

# PROCESS CATALOGUE 2016





# INDEX

<b>INDUSTRIAL AUTOMATION</b>	<b>11</b>
<b>INDUSTRIAL CONTROLLERS</b>	<b>13</b>
KM1	16
KX1	18
KR1	20
R38	22
TLK <sup>41/42/43</sup>	24
TLK72	26
TLK96	28
TLK94	30
C1	32
M1	34
M2	36
M3/M4	38
X1/X3	40
Q1/Q3	42
<b>ADVANCED PROGRAMMER CONTROLLERS</b>	<b>45</b>
KM3	48
KM5	50
KX3	52
KX5	54
KX6	56
KR3	58
KRD3	60
KR5	62
K <sup>31/32/38/39</sup>	64
K <sup>48/49</sup>	66
K85	68
K30	70
M5	72
X5/Q5	74
<b>DIN RAIL MOUNTING CONTROLLERS</b>	<b>77</b>
D1/D2/D3	80
K30	82
KRD3	84
K85	86
TLZ35	88
<b>THERMOSTATS – ANALOGUE CONTROLLERS</b>	<b>91</b>
Z31A	94
TLZ35	96
E51A	98

W09	100
TCPDE M	102
<b>SPECIAL CONTROLLERS AND "CUSTOM"</b>	<b>105</b>
TC030	108
PELTIER CELLS CONTROLLER	110
<b>PAC SYSTEMS</b>	<b>113</b>
M81	116
AC3	118
MP02	120
MP-D <sup>1/2/4</sup>	122
CU02	124
OPENPCS	126
<b>PRE-PROGRAMMED SYSTEMS</b>	<b>129</b>
CLIMA PAC	130
BREWERY PAC	132
LIGHT PAC	134
<b>PLC AND OPERATOR PANELS</b>	<b>137</b>
P04	140
OPMT	142
OPMT	144
p <sup>01/30/32</sup>	146
<b>TIMERS - COUNTERS - POWER LIMITERS</b>	<b>149</b>
BWT40	152
TT <sup>34/49/73</sup>	154
TC <sup>34/49/73</sup>	156
TP <sup>34/49</sup>	158
<b>INDICATORS</b>	<b>161</b>
TLI40	164
K <sup>31V 138V</sup>	166
K <sup>48V</sup>	168
K <sup>85V</sup>	170
J1 / J3	172
J5	174
<b>ACQUISITION AND DATA RECORDING</b>	<b>177</b>
I/O MODULES	179
D7/D8/D9	182

ANALOGUE I/O	184
DIGITAL I/O	186
DIGITAL I/O	188
TDA	190
SUPERVISION	193
AUTOLINK	196
DX/DY	198
<b>EMISSION ANALYSIS AND COMBUSTION CONTROL SYSTEMS</b>	<b>203</b>
ZO2-3	204
OXI/OXM/OXR	206
ZCO	208
<b>ACCESSORIES</b>	<b>211</b>
<b>ACCESSORIES</b>	<b>213</b>
A01	214
A30	216
APS2 ALDR	218
APS2 ATOPEH	218
APS2 MODEM	218
BOX-AR	219
CAL	219
GUAR	219
TAPPO	220
TCTR	220
TLCOV	220
TR-AMP	221
ZOC	221
THERMOELEMENTS	222
THE GROUP	231



Manufacturing unit, Manaus (Brazil).



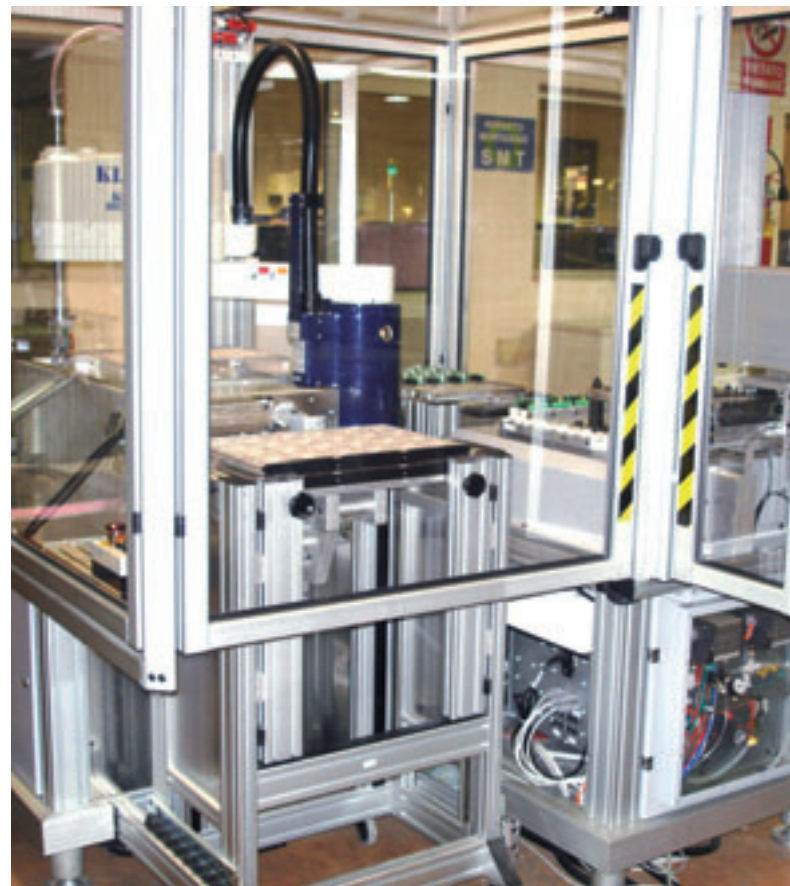
Headquarters, offices, R&D, Manufacturing unit, Vigevano (Italy).

# COMPANY PROFILE

Ascon Tecnologica is an Italian company that develops, manufactures and commercializes a complete range of products for the regulation and automation of machinery and systems in the manufacturing and processing sectors as well as that of industrial and commercial refrigeration.

The group Ascon Tecnologica has more than 200 employees and, in its productive plants, realizes every year over a million of instruments.

Ascon Tecnologica operates in over 50 countries with 6 branches, its own agents and a distribution network, offering clients sales and after-sales assistance.





# QUALITY CERTIFICATION / SAFETY AND APPROVALS

Ascon Tecnologic S.r.l. has obtained:

- the certification of "Quality System" in conformity to UNI EN ISO 9001:2008 released by the corporate certifier DNV GL Business Assurance Italia S.r.l.
- the "Management System Certificate" in conformity to OHSAS 18001:2007 released by the corporate certifier DNV GL Business Assurance Italia S.r.l.

The instruments are developed for the use in conformity to the actual compliance, as concern the CE mark according to Directives 2006/95/CE (Low Voltage) and 2004/108/CE (EMC).

The applicable rules, according to the model, are:

## **Safety**

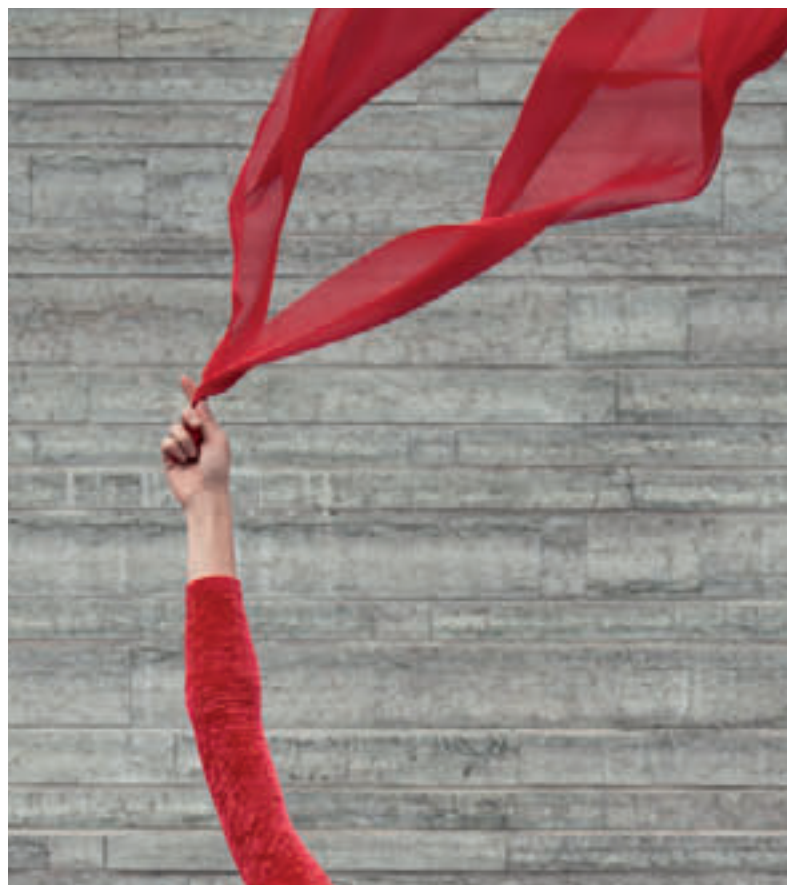
- EN61010-1
- EN60730-1
- UL873 for use conforming as foreseen by Underwriters Laboratory Inc. (only for approved instruments).

## **EMC**

EN61326-1

Remarks: please make reference to the documentation and the individual certifications for details of the applicable norms.





# INDUSTRIAL AUTOMATION



*Flexible*  
control



# INDUSTRIAL CONTROLLERS



## Evolution...cubed !

Experience and innovation are at the base of this range of products, able to answer to any demand of performances.

From the "entry level" controller with innovative "Sensitive-Touch" keyboard to the more sophisticated microprocessor based controllers with PID algorithm, in different sizes, standard and not.

New KUBE line: more and more in less space!  
Pocket size, energy saving functions and advanced features.

# INDUSTRIAL CONTROLLERS

FEATURES		KM1	KX1	KR1	R38	TLK41	TLK42	TLK43
Dimensions (mm)	78 x 35			•	•			
	24 x 48							
	48 x 48	•				•	•	•
	48 x 96		•					
	72 x 72							
	96 x 96							
3 dynamic colour dual LED display		•	•	•				
Single display					•	•		
Dual display							•	•
Digit		4	4	4	4	4	4	4
"Sensitive Touch" keyboard					•			
Input	Universal input					•	•	•
	PTC-NTC				•			
	J-K	•	•	•	•			
	S							
	S-R-T	•	•	•				
	Pt100	•	•	•	•			
	ΔT Pt100							
	Pt1000	•	•	•	•			•
	IR sensors					•	•	•
	Digital	2	2	2				1
For CT								•
Relay or voltage for SSR drive outputs		4	4	4	2	4	4	4
Analogue current or voltage outputs								2
Measuring or Set Point retransmission								
Power supply	12 Vac/Vdc				•			
	24 Vac/Vdc	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•
Control	ON/OFF and PID	•	•	•	•	•	•	•
	Servomotor control							•
RS485		•	•	•		•	•	•
Timer on board		•	•	•				
Programmer								
CE certification		•	•	•	•	•	•	•
UL approval		•	•	•	•	•	•	•
ENEC approval					•			



# KM1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

*evolution*



**FEATURES**

DISPLAY		KM1
Dual LED		Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS		
Universal		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs		± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type) 1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS		
Up to 4		OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL		
Control		PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms		3 alarms programmable as absolute, deviation, band
Set Point		4 programmable Set Points
Serial communication		TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate		1200... 38400 baud
Working hours counters		A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function		Instantaneous power, time consumption
EVOogreen		Stand-by mode of display, selectable
Timer (optional)		Independent with 5 function modes
GENERAL		
Power supply		24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption		7 VA max.
Dimensions / Weight		48 x 48 mm (1/16DIN) - depth 63 mm / 125 g
Mounting		Flush in panel in 45 x 45 mm hole
Connections		16 screw terminals 2.5 mm <sup>2</sup> (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree		IP 65, mounted on panel with gasket
Operating / storage temperature		0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity		20... 95 RH%, without condensation
Conformity		EN 61010-1, EN 61326

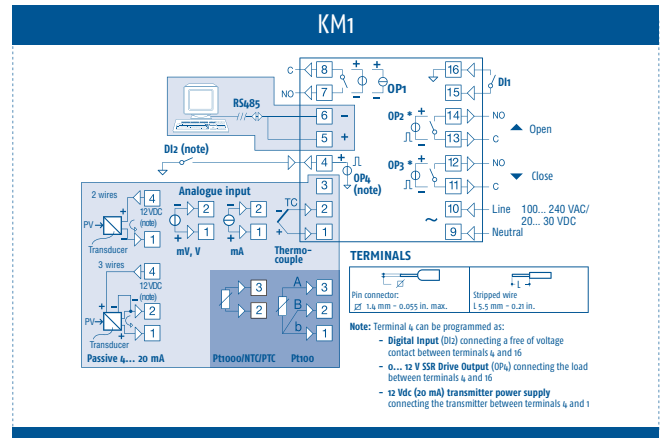


# HOW TO ORDER

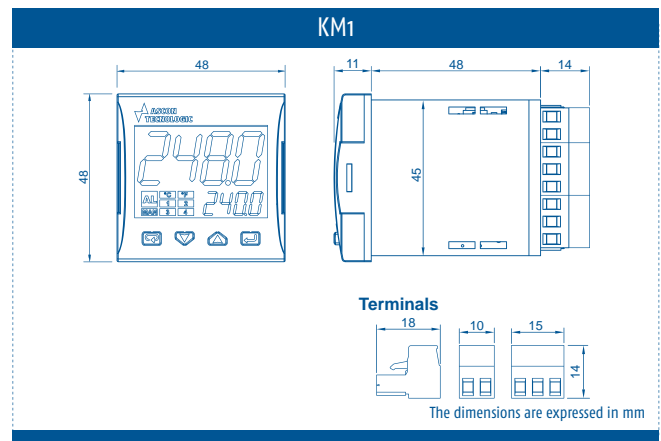
To compose the part number, pls. choose one of the option for each variable

KM1	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>IN/OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# KX1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

*evolution*



## FEATURES

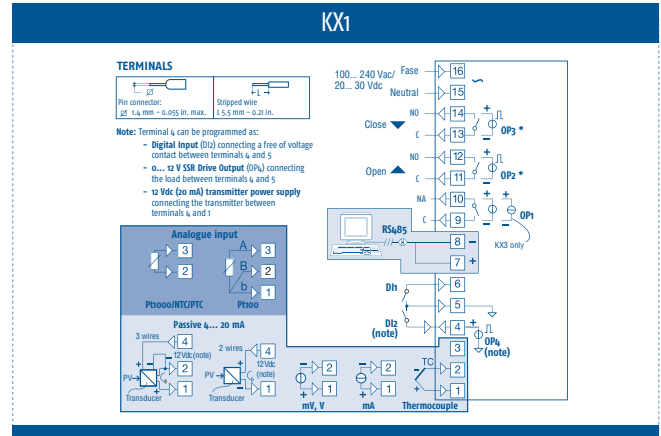
DISPLAY		KX1
Dual LED		Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 10 mm + 20 segments Bargraph
INPUTS		
Universal		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs		± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type) 1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS		
Up to 4		OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL		
Control		PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms		3 alarms programmable as absolute, deviation, band
Set Point		4 programmable Set Points
Serial communication		TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate		1200... 38400 baud
Working hours counters		A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function		Instantaneous power, time consumption
EVOogreen		Stand-by mode of display, selectable
Timer (optional)		Independent with 5 function modes
GENERAL		
Power supply		24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption		7 VA max.
Dimensions / Weight		48 x 96 mm (1/8 DIN) - depth 76 mm / 260 g
Mounting		Flush in panel in 45 x 93 mm hole
Connections		16 screw terminals 2.5 mm <sup>2</sup> (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree		IP 65, mounted on panel with gasket
Operating / storage temperature		0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity		20... 95 RH%, without condensation
Conformity		EN 61010-1, EN 61326

# HOW TO ORDER

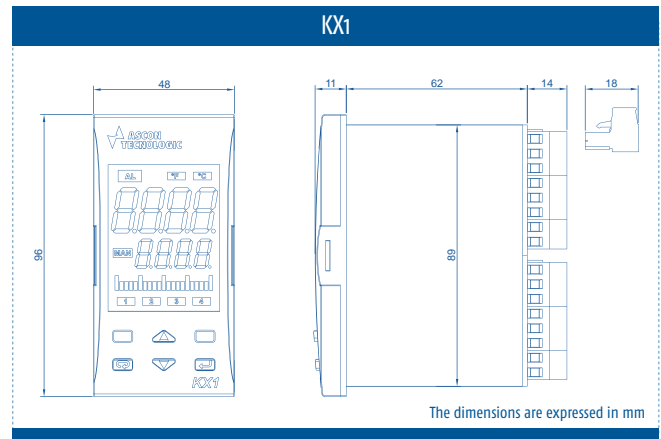
To compose the part number, pls. choose one of the option for each variable

KX1	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	O
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>IN/OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# KR1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

*evolution*



## FEATURES

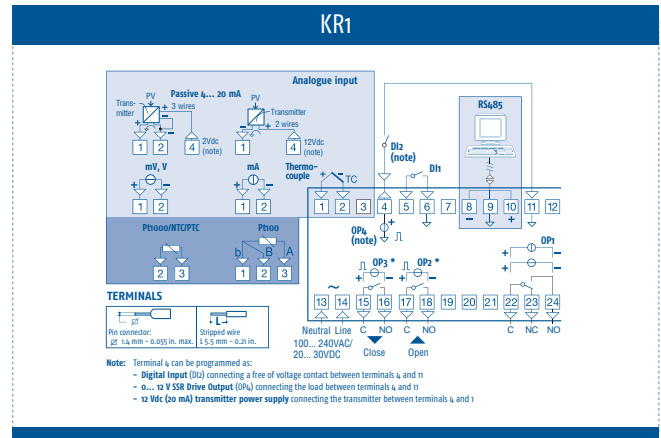
DISPLAY	
Dual LED	KR1 Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V ± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	78 x 35 mm - depth 78 mm + 14 mm (plug-in terminals) / 200 g
Mounting	Flush in panel in 69 x 28 mm hole
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

# HOW TO ORDER

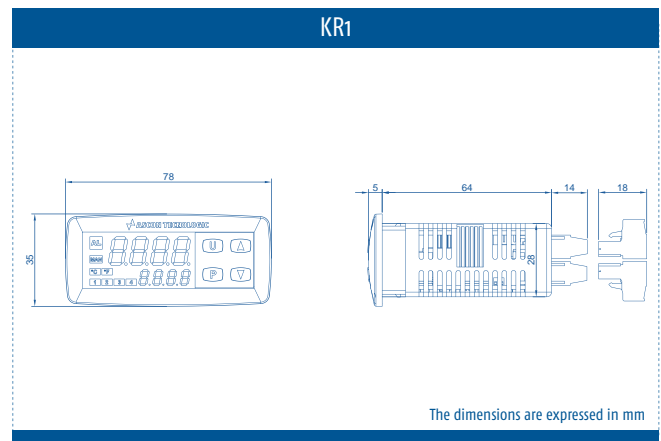
To compose the part number, pls. choose one of the option for each variable

KR1	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPDT 4A	R
Vdc for SSR driving	O
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# R38

- "SENSITIVE TOUCH" KEYBOARD
- EASY PROGRAMMING



## FEATURES

<b>DISPLAY</b>	<b>R38</b>
Single	4 red or blue digit, h 12 mm
<b>INPUTS</b>	
3 different configurations	Thermocouples J, K (-40... +999°C / -40... +999°F) or Infrared sensors: J or K Thermoresistances Pt 100 2 wires (-50.0... +850°C / -58... +999°F) autoranging Thermoresistances Pt 1000 2 wires (-50.0... +850°C / -58... +999°F) autoranging + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-50.0... +150°C / -58.0 a 302°F) autoranging e Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50.0... +109°C / -58.0... +228°F)
Accuracy	± 0.5% span ±1 digit@ 25°C
<b>OUTPUTS</b>	
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or voltage to drive SSR 20mA/12 Vdc ±20% 20 mA max.
Auxiliary power supply	12 Vdc/20 mA max.
<b>FUNCTIONAL</b>	
Control	ON/OFF single and double action, Neutral Zone, PID, programmable
PID functions	Autotuning
Sampling rate	1 sec
Serial communication	TTL ModBus
Baud rate	9600 baud
<b>GENERAL</b>	
Power supply	12 Vac/Vdc, 24 Vac, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm / 180 g approx.
Keyboard	Mechanical or "Sensitive Touch"
Connections	Screw terminal block 2 x 1 mm <sup>2</sup> plug-in connector or fix type
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... +50°C (32... 122°F) / -30... +70°C (-22... +158°F)
Operating humidity	20... 85 RH%, without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

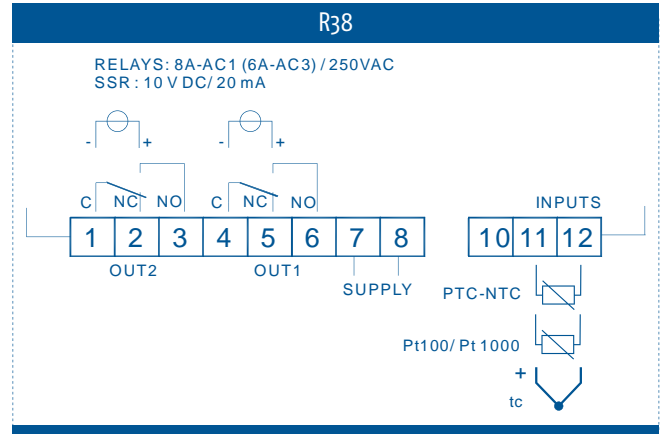
## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

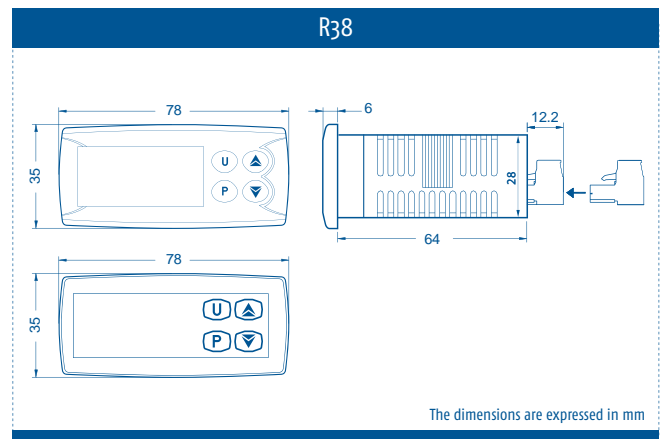
R38	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC (J,K)	F
Pt100 (2 wires only)	A
PTC/NTC/Pt1000	T
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
<b>TIPO COLLEGAMENTO</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



# TLK 41/42/43

- UNIVERSAL INPUT
- RS485
- UP TO 4 OUTPUTS
- CT INPUT



## FEATURES

DISPLAY	TLK41	TLK42	TLK43
Display	Single display: 4 red digit, h 12 mm	Dual display: 4 red and green digit, h 7mm	
<b>INPUTS</b>			
Universal	Thermocouples: J (-160... +1000°C/-256... +1832°F or -160.0... +999.9°C/-199.9... +999.9°F), K (-100... +1370°C/- 148... +2498°F or -100.0... +999.9°C/-148.0... +999.9°F), S (0... +1760°C/32... +3200°F or 0.0... 999.9°C/32.0... +999.9°F)		Thermocouples: J, K, S, B, C, E, L, N, R, T (see table next page for temperature ranges)
	Infrared sensors: J or K		
	Thermoresistances: Pt100 3 wires (-200... +850°C/-328... +1562°F or -199.9... +850.0°C/-199.9... +999.9°F) - according to EN 60751/A2, classe A or B	Thermoresistances: Pt100 and Pt1000 3 wires (see table next page for temperature ranges)	
Thermistors PTC KTY 81-121 (990 kΩ at 25°C) (-55... +150°C/-67... +302°F or -55.0... +150.0°C -67.0... +302.0°F) and NTC 103AT-2 (10Ω at 25°C) (-50... +110°C/-58... +230°F or -50.0... +110.0°C/-58.0... +230.0°F)			
Linear signals: 0/10... 50 mV, 0/12... 60 mV, 0/4... 20 mA, 0/1... 5 V, 0/2... 10 V			
Accuracy	±0.15% fs		
Current transformer (CT) input	CT 50 mA max.		
Digital input	--	optoisolated	
<b>OUTPUTS</b>			
Up to 4	OUT 1: Relay SPST-NO (5 A-AC1, 2 A-AC3/250 Vac) or 7 mA/14 Vdc 20 mA max. to drive SSR OUT 2, OUT 3 and OUT 4: Relay SPST-NO (3 A-AC1, 1,5 A-AC3/250 Vac) or 7 mA/14 Vdc 20 mA max. to drive SSR		
Auxiliary power supply	12 Vdc/20 mA max.		
Current (as alternative to Relay output)	--	OUT 1 and OUT 2: 0/4... 20 mA.	
Voltage (as alternative to Relay output)	--	OUT 1 and OUT 2: 0/2... 10 V	
<b>FUNCTIONAL</b>			
Control	ON/OFF, Neutral Zone, PID single and double action		
PID functions	AUTOTUNING, FAST TUNING, Selftuning		
Multi Set Point	Up to 4 pre-programmable Set Point		
Servomotor control	--	3 points	
Signal retransmission	--	On analogue output	
Serial communication	RS485 with ModBus-RTU (JBUS) protocol		
Baud rate	--	1200... 38400 baud, programmable	
<b>GENERAL</b>			
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)		
Power consumption	10 VA approx.		
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 98 mm / 190 g approx.		
Mounting	Flush in panel in 45 x 45 mm hole		
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>		
Front protection degree	IP 65, mounted on panel with gasket		
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)		
Operating humidity	30... 95 RH% without condensation		
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)		



# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

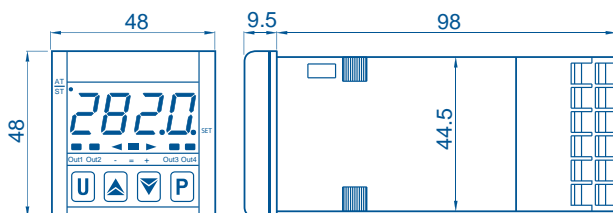
TLK41 / TLK42 / TLK43	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>OUT 1</b>	
Relay	R
Voltage for SSR driving	0
0/4... 20mA (TLK43 only)	C
0/2... 10V (TLK43 only)	V
<b>OUT 2</b>	
Relay	R
Voltage for SSR driving	0
0/4... 20mA (TLK43 only)	C
0/2... 10V (TLK43 only)	V
Not available	-
<b>OUT 3</b>	
Relay	R
Voltage for SSR driving	0
Not available	-
<b>OUT 4</b>	
Relay	R
Voltage for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION AND DIGITAL INPUT</b>	
RS485	S
RS485 and digital input (TLK43 only)	I
Not available	-
<b>CURRENT TRANSFORMER INPUT</b>	
Available	H
Not available	-

Notes:

TLK41-TLK42-TLK43: OUT 3 and OUT 4 have to be of the same type (both R or 0).  
 CT INPUT: this function has to be always associated to an output (R or 0).  
 TLK43: Analogue output and CT function are mutually exclusive.  
 Digital input is always available when RS485 option is provided.  
 RS485 and OUT 4 are mutually exclusive.

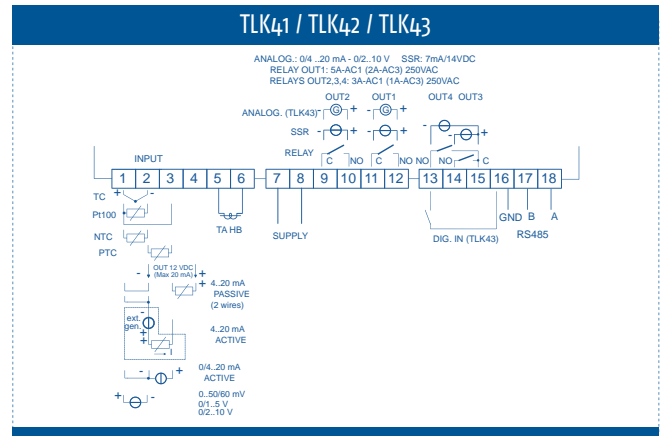
# DIMENSIONS

TLK41 / TLK42 / TLK43



The dimensions are expressed in mm

# CONNECTIONS



# TEMPERATURE RANGES

TLK43 TEMPERATURE RANGES	WITHOUT D.P.	WITH D.P.
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-100 ... 1370 °C - 148 ... 2498 °F	-100.0 ... 999.9 °C -148.0 ... 999.9 °F
tc S	0 ... 1760 °C 32 ... 3200 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 750.0 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-250 ... 1300 °C -418 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-250 ... 400 °C -418 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
Infrared sensors (ZIS)	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt1000 (IEC)	-200 ... 500 °C -328 ... 932 °F	-199.9 ... 500.0 °C -199.9 ... 932.0 °F
Pt100 (IEC)	-200 ... 850 °C -328 ... 1562 °F	-199.9 ... 850.0 °C -199.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ... 302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F

# TLK72

- ON/OFF AND PID CONTROLLER
- RS485
- UP TO 3 RELAY OUTPUTS



## FEATURES

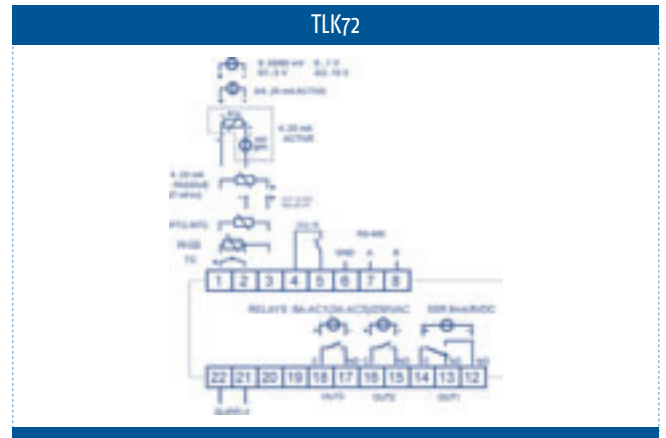
DISPLAY	
Single	TLK72 4 red digit, h 12 mm + 3 LED Bargraph
INPUTS	
4 different configurations	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200... 850 °C/-328... 1562 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150 °C/-67... 302 °F) and Thermistors NTC 103AT-2 (10 kΩ at 25°C) (-50... 110 °C/-58... 230 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Linear signals 0/4... 20mA Linear signals 0/1... 5V, 0/2... 10V
Accuracy	±0.5 % fs (tc S: ± 1% fs)
OUTPUTS	
Up to 3	OUT 1 : Relay SPDT (8 A-AC1, 3 A-AC3 / 250 V AC) or voltage to drive SSR 8Vdc/8 mA OUT 2 e OUT 3: Relay SPST-NO (8 A-AC1 3A-AC3/250 Vac) or voltage to drive SSR 8Vdc/8 mA
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID
PID functions	AUTOTUNING, FAST TUNING, Selftuning
Multi Set Point	Up to 4 pre-programmable Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	10 VA approx.
Dimensions / Weight	72 x 72 mm - depth 97 mm / 325 g approx.
Mounting	Flush in panel in 67 x 67 mm hole
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... +50°C (+32... +122°F) / -10... +60°C (+14... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 89/336 (EN 61326), Directive CEE BT 73/23 and 93/68 (EN 61010-1)

## HOW TO ORDER

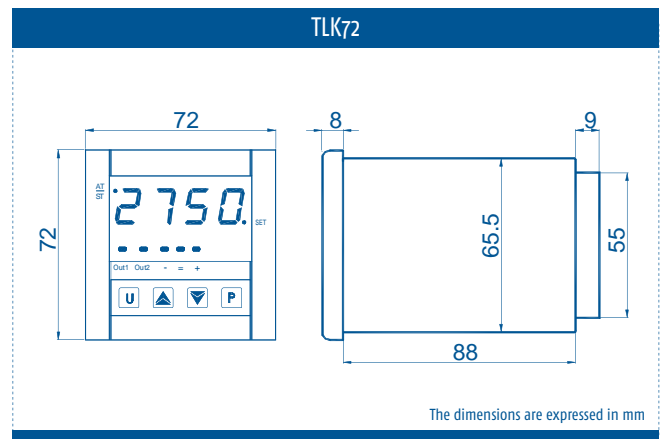
To compose the part number, pls. choose one of the option for each variable

TLK72	
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC (J,K,S,IRS)+PT100,mV	C
TC (J,K,S,IRS)+PTC,NTC,mV	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay	R
Voltage for SSR driving	O
<b>OUT 2</b>	
Relay	R
Voltage for SSR driving	O
Not available	-
<b>OUT 3</b>	
Relay	R
Voltage for SSR driving	O
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
Not available	-
<b>DIGITAL INPUT</b>	
Available	I
Not available	-

## CONNECTIONS



## DIMENSIONS



# TLK96

- ON/OFF AND PID CONTROLLER
- UP TO 2 RELAY OUTPUTS



## FEATURES

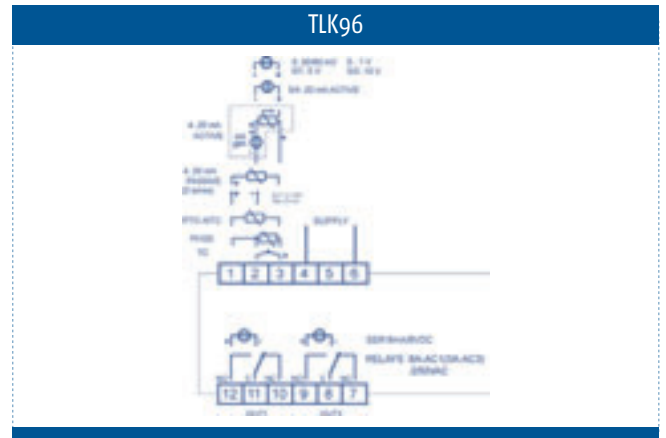
DISPLAY		TLK96
Single		4 red digit, h 14 mm
INPUTS		
4 different configurations		Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200... 850 °C/-328... 1562 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
		Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150 °C/-67... 302 °F) and Thermistors NTC 103AT-2 (10 kΩ at 25°C) (-50... 110 °C/-58... 230 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
		Linear signals 0/4... 20mA
		Linear signals 0/1... 5V, 0/2... 10V
Accuracy		±0.5 % fs (tc S: ± 1% fs)
OUTPUTS		
Up to 2		OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 V AC) or voltage to drive SSR 8Vdc/8 mA
Auxiliary power supply		12 Vdc/20 mA max.
FUNCTIONAL		
Control		ON/OFF, Neutral Zone, PID
PID functions		AUTOTUNING
GENERAL		
Power supply		24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption		10 VA approx.
Dimensions / Weight		96 x 96 mm (1/4 DIN) - depth 73 mm / 250 g approx.
Mounting		Flush in panel in 90 x 90 mm hole
Connections		Screw terminal block 2 x 1 mm <sup>2</sup>
Front protection degree		IP 54, mounted on panel with gasket
Operating / storage temperature		0... 50°C (32... 122°F) / -10 ... 60 °C (14... 140°F)
Operating humidity		30... 95 RH% without condensation
Conformity		Directive CEE EMC 89/336 (EN 61326), Directive CEE BT 73/23 and 93/68 (EN 61010-1)

## HOW TO ORDER

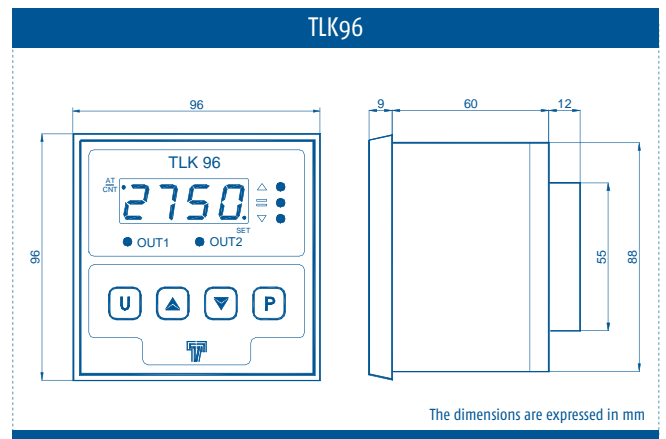
To compose the part number, pls. choose one of the option for each variable

<b>TLK96</b>	
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC (J,K,S,IRS)+PT100,mV	C
TC (J,K,S,IRS)+PTC,NTC,mV	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay	R
Voltage for SSR driving	O
<b>OUT 2</b>	
Relay	R
Voltage for SSR driving	O
Not available	-

## CONNECTIONS



## DIMENSIONS



# TLK94

- UNIVERSAL INPUT
- RS485
- UP TO 5 OUTPUTS
- SERVOMOTOR CONTROL



**FEATURES**

DISPLAY		TLK94
Dual display	Main display: 4 red digit, h 10 mm Secondary display: 4 green digit, h 7.5 mm	
INPUTS		
Universal	Thermocouples J, K, S, B, C, E, L, N, R, T and Infrared sensors J or K + Thermoresistances Pt 100 and Pt1000 3 wires + Linear signals 0/10... 50mV, 0/4... 20mA, 0/12... 60mV, 0/1... 5V, 0/2... 10V (see table next page for temperature ranges)	
Accuracy	± 0.2 % fs + 1 digit; PTC/NTC: ± 0.5 % fs + 1 digit	
Current transformer (CT) input	CT 50 mA max. optoisolated	
Digital inputs	2 for free voltage contacts	
OUTPUTS		
Up to 6	OUT 1 : Relay SPST-NO (6 A-AC1, 3 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR or 0/4... 20 mA or 0/2... 10 V OUT 2: Relay SPST-NO (4 A-AC1, 2 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR or 0/4... 20 mA or 0/2... 10 V OUT 3, OUT 4, OUT 5 : Relay SPST-NO (4 A-AC1, 2 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR OUT6: 12Vdc/20 mA to drive SSR	
Up to 4	12 Vdc/20 mA max.	
FUNCTIONAL		
Control	ON/OFF, PID single and double action, PID for servomotor control	
PID functions	AUTOTUNING, FAST TUNING, Selftuning	
Multi Set Point	Up to 4 pre-programmable Set Point	
Servomotor control	3 points	
Signal retransmission	On analogue output	
Serial communication	RS485 with ModBus-RTU (JBUS) protocol	
Baud rate	1200... 38400 baud, programmable	
GENERAL		
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	
Power consumption	10 VA approx.	
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 98 mm / 260 g approx.	
Mounting	Flush in panel in 45 x 92 mm hole	
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>	
Front protection degree	IP 54, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F) / -10 ... 60 °C (14... 140°F)	
Operating humidity	30... 95 RH% without condensation	
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)	

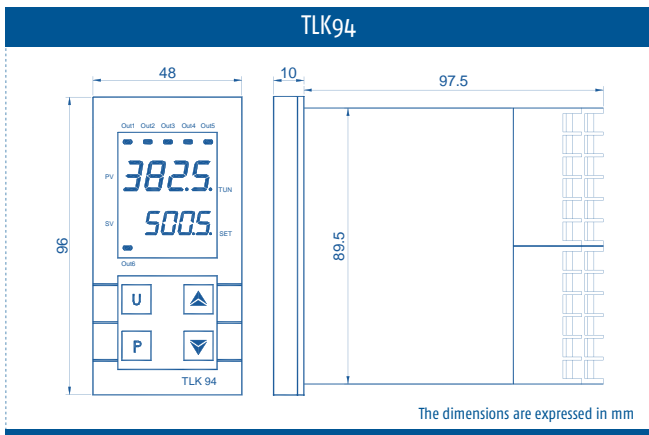
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

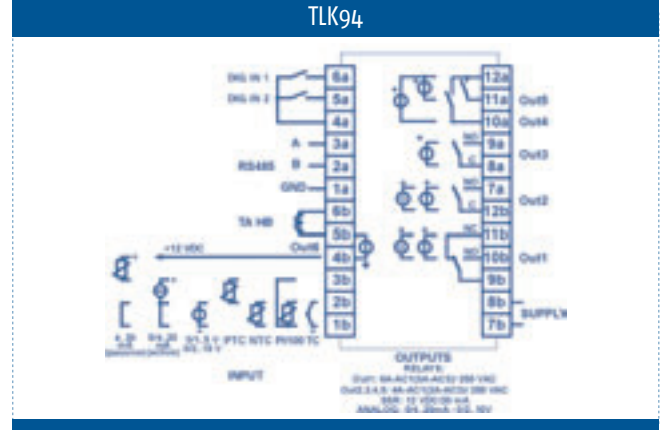
TLK94	
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>OUT 1</b>	
Relay SPDT 6 A-AC1	R
Voltage for SSR driving	0
0/4... 20 mA	I
0/2... 10 V	V
<b>OUT 2</b>	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
0/4... 20 mA	I
0/2... 10 V	V
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
<b>OUT 4</b>	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
<b>OUT 5</b>	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION AND DIGITAL INPUT</b>	
RS485	S
CT input	H
RS485 and CT input	T
Not available	-

Note : When selected OUT 3, OUT 4 and OUT 5 must be identical. (ALL Relay or ALL voltage for SSR driving).

# DIMENSIONS



# CONNECTIONS



# TEMPERATURE RANGES

TLK94 TEMPERATURE RANGES		
INPUT	WITHOUT DP	WITH DP
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-100 ... 1370 °C - 148 ... 2498 °F	-100.0 ... 999.9 °C -148.0 ... 999.9 °F
tc S	0 ... 1760 °C 32 ... 3200 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 750.0 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-250 ... 1300 °C -418 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-250 ... 400 °C -418 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
Infrared sensors	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt100 (IEC)	-200 ... 850 °C -50 ... 1445 °F	-199.9 ... 850.0 °C -199.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ... 302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F
Pt1000 (IEC)	-200 ... 500 °C -328 ... 932 °F	-199.9 ... 500.0 °C -199.9 ... 932.0 °F

# C1

- CONTROLLER / INDICATOR
- WITH 1 OR 2 ALARMS



## FEATURES

<b>DISPLAY</b>	C1
Single	4 green digit, h 9 mm + 3 LEDs
<b>INPUTS</b>	
Universal	Thermocouples: L, J (0... 600°C/32... 1112°F), T (-200... 400/-328... 752°F), K (0...1200°C/32... 2192°F), S (0... 1600°C/32... 2912°F) + Thermoresistances PT100 (-200... 600°C/-328... 1112°F or -99.9... 300.0°C/-99.9... 572.9°F) connection with 2 or 3 wires + Linear signals: 0/10... 50 mV; 0/4...20 mA + Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
<b>OUTPUTS</b>	
Up to 3	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac 1A/250Vac-AC1 OUT 2: 5Vdc 30mA max., ± 10% (not isolated) to drive SSR OUT 3 (opt.): Measuring retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter
<b>FUNCTIONAL</b>	
Control	ON/OFF or PID single action
PID functions	PID control with cycle time and overshoot control, 2 Autotuning algorithms
Signal retransmission	Measuring retransmission
Serial communication (as alternative to retransmission output)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200... 9600 baud, programmable
<b>GENERAL</b>	
Power supply	100... 240 Vac/Vdc (-15...+10%), 24Vac(-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3 VA max.
Dimensions / Weight	48 x 24 - depth 120 mm / 100 g approx.
Mounting	Flush in panel in 45 x 22.2 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH% without condensation
Conformity	EN 61000-6-3:2001, EN 61000-6-4:2001, EN 61000-6-2:2001

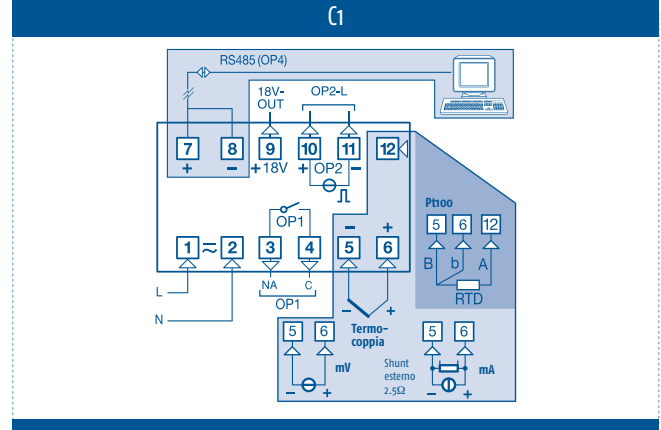


## HOW TO ORDER

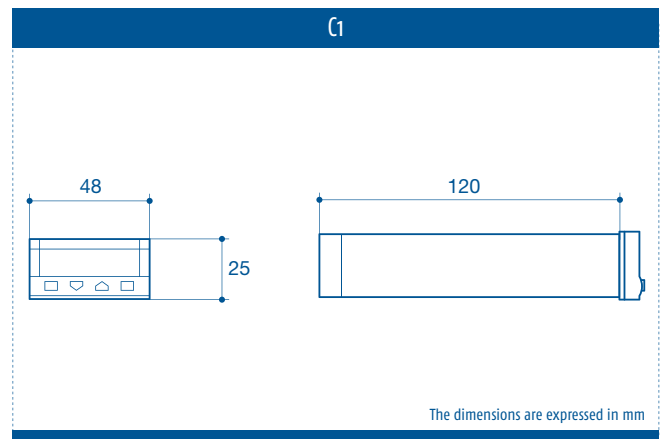
To compose the part number, pls. choose one of the option for each variable

C1		CODE
<b>POWER SUPPLY</b>		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
<b>OUTPUTS</b>		
Relay		0
Triac		3
Voltage for SSR driving		6
<b>SERIAL COMMUNICATION</b>		<b>OPTIONS</b>
Not available	Not available	00
	Transmitter Power supply	06
	Transmitter Power supply + retransmission	07
RS485	Not available	50
	Transmitter Power supply	56
<b>SPECIAL FUNCTIONS</b>		
Limit switch version		9
Not available		0
<b>INSTRUCTION MANUAL</b>		
Italian/English		0
Not available		9
<b>FRONT FRAME COLOUR</b>		
Dark grey		0
Dark grey + shunt 0.1%		2
<b>SPECIAL EXECUTION</b>		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

## CONNECTIONS



## DIMENSIONS



The dimensions are expressed in mm

# M1

- CONTROLLER / INDICATOR / TRANSMITTER
- WITH 1 OR 2 ALARMS



## FEATURES

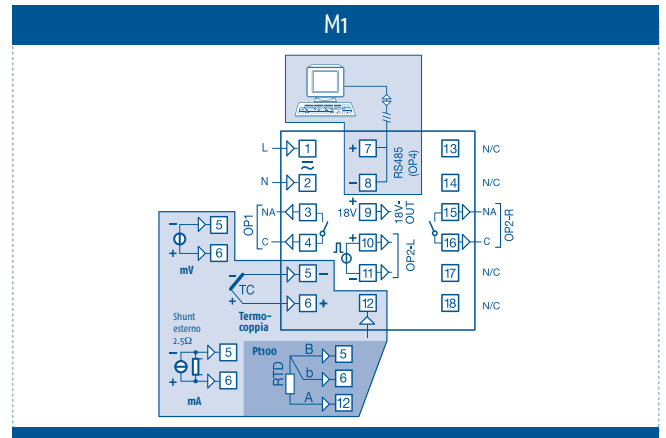
<b>DISPLAY</b>	M1
Single	4 green digit, h 10 mm + 6 LEDs
<b>INPUTS</b>	
Universal	Thermocouples: L, J (0... 600°C/32... 1112°F), T (-200... 400/-328... 752°F), K (0...1200°C/32... 2192°F), S (0... 1600°C/32... 2912°F) + Thermoresistances PT100 (-200... 600°C/-328... 1112°F or -99.9... 300.0°C/-99.9... 572.9°F) connection with 2 or 3 wires + Linear signals: 0/10... 50 mV; 0/4...20 mA + Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
<b>OUTPUTS</b>	
Up to 4	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac 1A/250Vac-AC1 OUT 2 + OUT 3: 5Vdc 30mA max., ± 10% (not isolated) to drive SSR / Relay SPST-NO (2A/250Vac-AC1) OUT 4 (opt.): Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter
<b>FUNCTIONAL</b>	
Control	ON/OFF or PID single action
PID functions	PID control with cycle time and overshoot control, 2 Autotuning algorithms
Signal retransmission	Measuring or Set Point retransmission
Serial communication (as alternative to retransmission output)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200... 9600 baud, programmable
<b>GENERAL</b>	
Power supply	100... 240 Vac/Vdc (-15...+10%), 24Vac(-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3.5 VA max.
Dimensions / Weight	48 x 48 - depth 120 mm / 130 g approx.
Mounting	Flush in panel in 45 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH% without condensation
Conformity	EN 61000-6-3:2001, EN 61000-6-4:2001, EN 61000-6-2:2001

# HOW TO ORDER

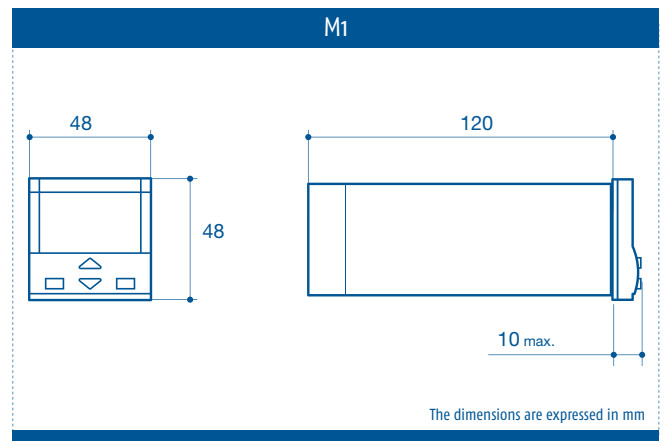
To compose the part number, pls. choose one of the option for each variable

M1		CODE
<b>POWER SUPPLY</b>		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
<b>OUTPUTS</b>		
Relay/Relay		0
Triac/Relay		3
Relay/Voltage for SSR driving		6
Relay/triac		7
<b>SERIAL COMMUNICATION</b>		
	<b>OPTIONS</b>	
Not available	Not available	00
	Transmitter Power supply	06
	Transmitter Power supply + retransmission	07
RS485	Not available	50
	Transmitter Power supply	56
<b>SPECIAL FUNCTIONS</b>		
Limit switch version		9
Not available		0
<b>INSTRUCTION MANUAL</b>		
Italian/English		0
Not available		9
<b>FRONT FRAME COLOUR</b>		
Dark grey		0
Dark grey + shunt 0.1%		2
<b>SPECIAL EXECUTION</b>		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

# CONNECTIONS



# DIMENSIONS



# M2

• TEMPERATURE CONTROLLER  
FOR HOT RUNNERS



**FEATURES**

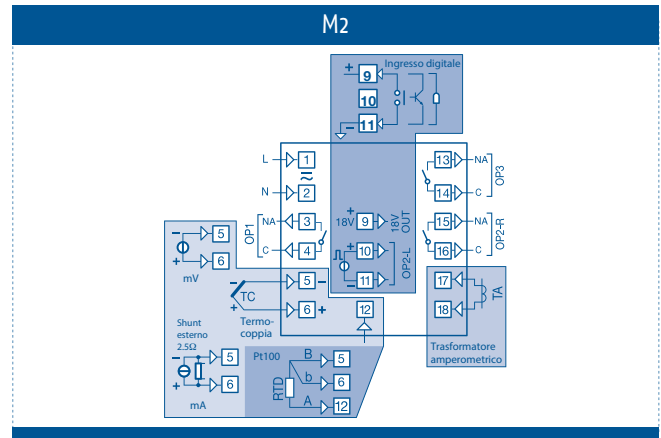
DISPLAY		M2
Dual		Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 8 mm + 6 LEDs
INPUTS		
Universal		Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)
Accuracy		0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
Auxiliary input		Current Transformer for Heater Break function
Digital inputs		1 digital input for free voltage contacts
OUTPUTS		
Up to 3		OUT 1: Relay SPST-NO 2A/250Vac-AC1 OUT 2: 5Vdc, ±10%, 30mA max. (not isolated) to drive SSR / Relay SPST-NO, 2A/250Vac-AC1 OUT 3: Relay SPST-NO 2A/250Vac-AC1
Auxiliary power supply		+18Vdc ±20%, 30mA max. for external transmitter
FUNCTIONAL		
Control		ON/OFF, PID a singola/doppia azione
PID functions		Dead band, relative cooling gain, cooling sampling time, overshoot control, higher limit
Serial communication		Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate		1200... 9600 baud, programmable
GENERAL		
Power supply		100... 240Vac (-15...+10%) o 24Vdc (-25...+12%) e 24Vdc (-15...+25%) (50/60Hz)
Power consumption		2.6 VA max.
Dimensions / Weight		48 x 48 - depth 120 mm / 130 g
Mounting		Flush in panel in 45 x 45 hole
Connections		Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)
Front protection degree		IP65
Operating / storage temperature		0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)
Operating humidity		5... 95% RH without condensation
Conformity		EN 61010-1

## HOW TO ORDER

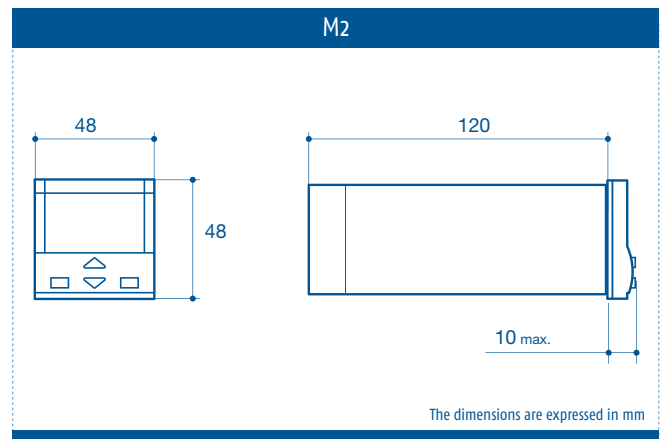
To compose the part number, pls. choose one of the option for each variable

M2		CODE
<b>POWER SUPPLY</b>		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
<b>OUT 2</b>		
Relay/Voltage for SSR driving		1
Voltage for SSR driving		6
<b>INPUT DIGITALE</b>		<b>OPTIONS</b>
Not available	Not available	00
	Current Transformer input (CT)	03
INPUT digitale	Not available	90
	Current Transformer input (CT)	93
<b>SPECIAL FUNCTIONS</b>		
Not available		0
SP modification from digital input		6
Average Safety Output		7
SP modification from digital input + Average Safety Output		8
<b>INSTRUCTION MANUAL</b>		
Italian/English		0
Not available		9
<b>FRONT FRAME COLOUR</b>		
Dark grey		0
Dark grey + shunt 0.1%		2
<b>SPECIAL EXECUTION</b>		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

## CONNECTIONS



## DIMENSIONS



# M3/M4

- HEAT/COOL TEMPERATURE CONTROLLER
- HEAT/COOL TEMPERATURE CONTROLLER WITH ANALOGUE OUTPUT



## FEATURES

DISPLAY	M3	M4
Dual	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 6.75 mm + 5 LEDs	
<b>INPUTS</b>		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Digital inputs	--	Auto/man switching, stand-by/Set Point switching, keyboard lock, timer
Auxiliary input (optional)	Current Transformer for Heater Break function	
<b>OUTPUTS</b>		
Up to 4	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac OUT 2: 5Vdc, ±10%, 30mA max.(not isolated) to drive SSR / Relay SPST-NO, 2A/250Vac-AC1 OUT 3: Relay SPST-NO 2A/250Vac-AC1 / Triac OUT 4 (opt.): Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)   OUT 4: (Opt.) control output, current: 0/4... 20mA 750Ω/15V max.	
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter	
Outputs configurations	1 loop PID or ON/OFF double action with 1 or 2 alarms	
<b>FUNCTIONAL</b>		
Control	ON/OFF or PID single/double action	
Alarms	2 alarms programmable as high/low or band alarm Hysteresis 0.1... 10.0% e.s.	
PID functions	Dead band, relative cooling gain, cooling sampling time, overshoot control, higher limit	
Special functions	Sensor Break, Heater Break, Latching/Blocking and loop break	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication (opt.)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200... 9600 baud, programmable	
<b>GENERAL</b>		
Power supply	100... 240 Vac (-15...+10%) 0 24Vac (-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	6 VA max.	
Dimensions / Weight	48 x 48 - depth 120 mm / 130 g	
Mounting	Flush in panel in 45 x 45 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

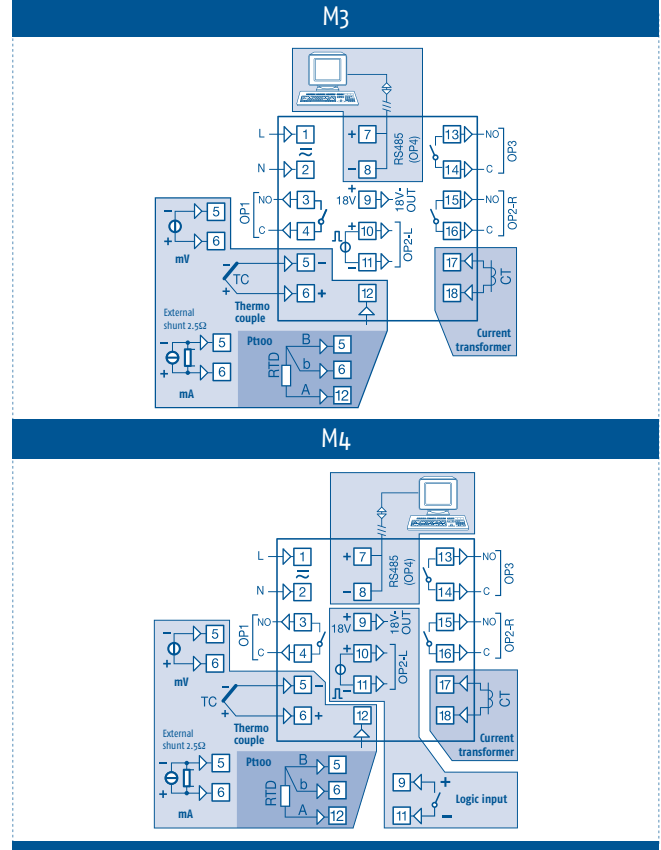
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

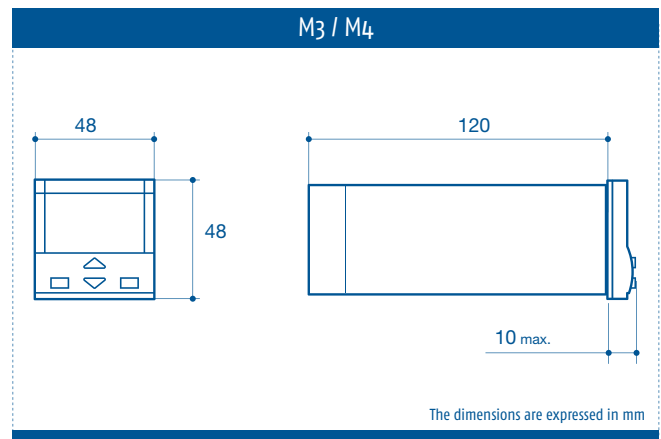
M3 / M4	CODE	
<b>POWER SUPPLY</b>		
100... 240 Vac/Vdc	3	
24 Vac/Vdc	5	
<b>OUT 1, 2 E 3</b>		
Relay/Relay/Voltage for SSR driving	0	
Relay/Relay/Voltage for SSR driving + Relay	1	
Relay/Relay/Voltage for SSR driving + triac	2	
Triac/Relay/Voltage for SSR driving + Relay	4	
Triac/Relay/Voltage for SSR driving + triac	5	
Relay + triac/Voltage for SSR driving + Relay (M3 only)	7	
Relay + Voltage for SSR driving (M3 only)	8	
<b>SERIAL COMMUNICATION + DIGITAL INPUT</b>		
	<b>OPTIONS</b>	
	Not available	00
	Current Transformer input (CT)	03
	Transmitter supply 18V	06
	Transmitter supply 18V + Retransmission (*) + CT input	07
	Transmitter supply 18V+ CT input	08
	Transmitter supply 18V + CT input + Retransmission (*)	09
	Not available	50
	Transmitter supply 18V	56
	Transmitter supply 18V + CT input	58
	Not available	90
	CT input	93
	Analogue Control Output	97
	Analogue Control Output + CT input	99
<b>SPECIAL FUNCTIONS</b>		
	Not available	0
	Start-up + Timer	2
	Limit switch version	9
<b>INSTRUCTION MANUAL</b>		
	Italian/English	0
	Not available	9
<b>FRONT FRAME COLOUR</b>		
	Dark grey	0
	Dark grey + shunt 0,1%	2
<b>SPECIAL EXECUTION</b>		
	Not available	0
	On DIN rail	1
	Mounting B/DIN, No display	2
	Tropicalized	3

(\*) With code 07 and code 09, the analogue output can be used also as control output.

# CONNECTIONS



# DIMENSIONS



# X1/X3

- HEAT-COOL TEMPERATURE CONTROLLERS
- DOUBLE ACTION CONTROLLER WITH ANALOGUE OUTPUT



**FEATURES**

DISPLAY	X1	X3
Dual	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 9 mm + 11 LEDs	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 9 mm + 16 LEDs,
<b>INPUTS</b>		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Auxiliary input	Non isolated remote Set Point: current 0/4... 20mA or voltage 1... 5/ 0... 5/ 0... 10V Current Transformer for Heater Break function	
Digital inputs	--	3
<b>OUTPUTS</b>		
Up to 5	OUT 1: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 2: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 3: Relay, SPDT, 2A/250Vac (4A/120Vac) OUT 4: Relay, SPDT, 2A/250Vac (4A/120Vac) or Logic not isolated: 0/5Vdc, ±10% 30mA max. OUT 5: Analogue for Measuring or Set Point retransmission, current: 0/4... 20mA max. 750Ω/10V max.	
Analogue control output	Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. or voltage: 0... 1/5/10V 500Ω/20mA max.	
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)	
<b>FUNCTIONAL</b>		
Control	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms PID for Servomotor control
Alarms	Up to 3	
PID functions	Error dead band, overshoot control, manual reset, cycle time, Control output high limit, Soft-start output valve, output safety value	
Double action (Heat-Cool) with overlap	Dead band, Relative cool gain, cycle time (time proportional output), Cool output high limit For X3 only: Cool output hysteresis	
Servomotor control (without position potentiometer)	--	Motor travel time, motor minimum step
Pre-programmed Set Point	--	1 program, 8 segments 1 initial and 1 end, from 1 to 9999 cycles/continuous cycling
Special functions	Timer (1... 9999s/min), Stand-by Set Point, Start-up, Start-up Set Point	
Tuning	One Shot Tuning	Fuzzy Tuning One Shot
Auto/Man Station	--	Standard with Bumpless function, by keypad digital input or serial communication
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200, 2400, 4800, 9600 bit/sec, 2 wires	
<b>GENERAL</b>		
Power supply	100... 240Vac (-15... +10%) or 24Vac (-25... +12%) and 24Vdc (-15... +25%) / 50/60Hz	
Power consumption	6VA max.	
Dimensions / Weight	48 x 96 mm - depth 110 mm / 250 g approx.	
Mounting	Flush in panel in 45 x 92 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

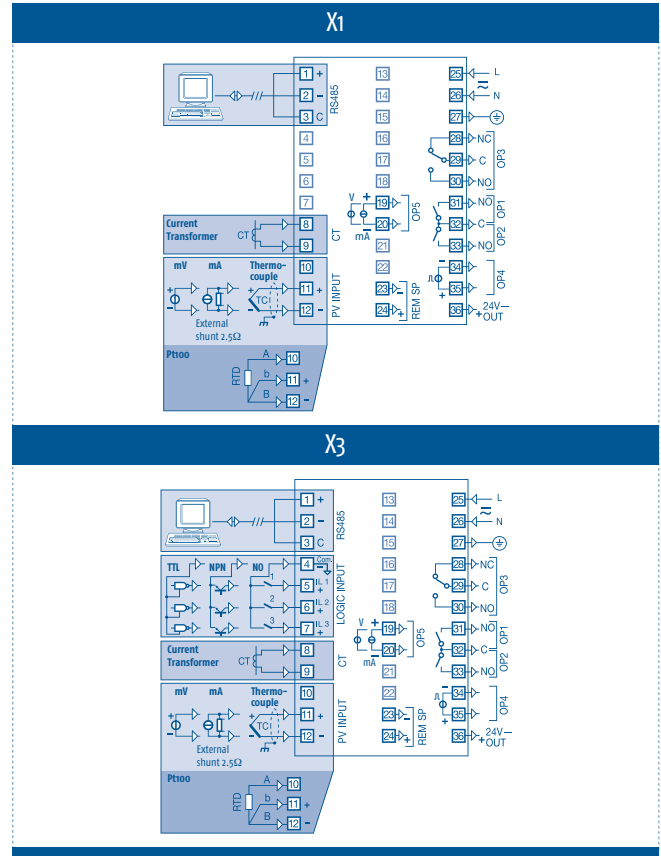


# HOW TO ORDER

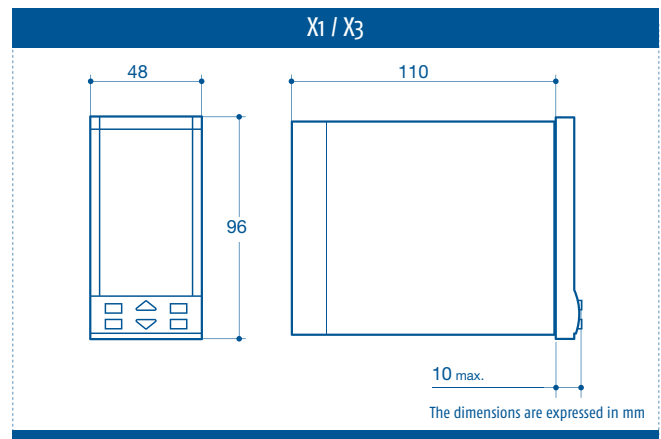
To compose the part number, pls. choose one of the option for each variable

X1 / X3	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac/Vdc	3
24 Vac/Vdc	5
<b>OUT 1, OUT 2, OUT 3 AND OUT 4</b>	
Relay-Relay-Relay-Voltage for SSR driving	1
Triac-triac-Relay-Voltage for SSR driving	5
Relay-Relay-Relay-Relay	9
<b>SERIAL COMMUNICATION</b>	
Not available	0
RS485	5
<b>OPTIONS</b>	
Not available	0
Servomotor (X3 only)	2
Retransmission + Remote Set Point (X1 only)	5
Analogue Output + Remote Set Point (X3 only)	5
Servomotor + Analogue Output + Remote Set Point (X3 only)	7
<b>SPECIAL FUNCTIONS</b>	
Not available	0
Start-up + Timer	2
1 Program 8 segments (X3 only)	3
<b>INSTRUCTION MANUAL</b>	
Italian/English	0
Not available	9
<b>FRONT FRAME COLOUR</b>	
Dark grey	0
Dark grey + shunt 0.1%	2
<b>SPECIAL EXECUTION</b>	
Not available	0
Tropicalized	3

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# Q1/Q3

- HEAT-COOL TEMPERATURE CONTROLLERS
- DOUBLE ACTION CONTROLLER WITH ANALOGUE OUTPUT



## FEATURES

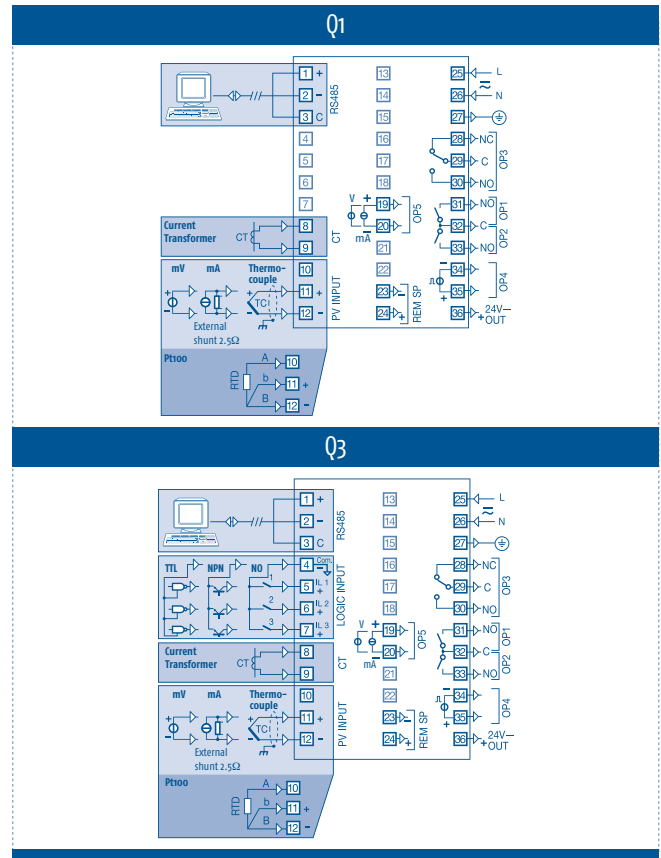
DISPLAY	Q1	Q3
Dual	Main display: 4 green digit, h 15 mm Secondary display: 4 green digit, h 12 mm + 11 LEDs	Main display: 4 green digit, h 15 mm Secondary display: 4 green digit, h 12 mm + 16 LEDs
<b>INPUTS</b>		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Auxiliary input	Non isolated remote Set Point: current 0/4... 20mA or voltage 1... 5/ 0... 5/ 0... 10V Current Transformer for Heater Break function	
Digital inputs	--	3
<b>OUTPUTS</b>		
Up to 5	OUT 1: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 2: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 3: Relay, SPDT, 2A/250Vac (4A/120Vac) OUT 4: Logic not isolated: 0/5Vdc, ±10% 30mA max. for retransmission OUT 5: Analogue for Measuring or Set Point retransmission, current: 0/4... 20mA max. 750Ω/10V max. +18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)	
Auxiliary power supply		
<b>FUNCTIONAL</b>		
Control	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms PID for Servomotor control
Alarms	Up to 3	
PID functions	Error dead band, overshoot control, manual reset, cycle time, Control output high limit, Soft-start output valve, output safety value	
Double action (Heat-Cool) with overlap	Dead band, Relative cool gain, cycle time (time proportional output), Cool output high limit For Q3 only: Cool output hysteresis	
Servomotor control (without position potentiometer)	--	Motor travel time, motor minimum step
Pre-programmed Set Point	--	1 program, 8 segments 1 initial and 1 end, from 1 to 9999 cycles/continuous cycling
Special functions	Timer (1... 9999s/min), Stand-by Set Point, Start-up, Start-up Set Point	
Tuning	One Shot Tuning	Fuzzy Tuning One Shot
Auto/Man Station	--	Standard with Bumpless function, by keypad digital input or serial communication
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200, 2400, 4800, 9600 bit/sec, 2 wires	
<b>GENERAL</b>		
Power supply	100... 240Vac (-15... +10%) or 24Vac (-25... +12%) and 24Vdc (-15... +25%) / 50/60Hz	
Power consumption	6 VA max.	
Dimensions / Weight	96 x 96 mm - depth 110 mm / 470 g approx.	
Mounting	Flush in panel in 92 x 92 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

# HOW TO ORDER

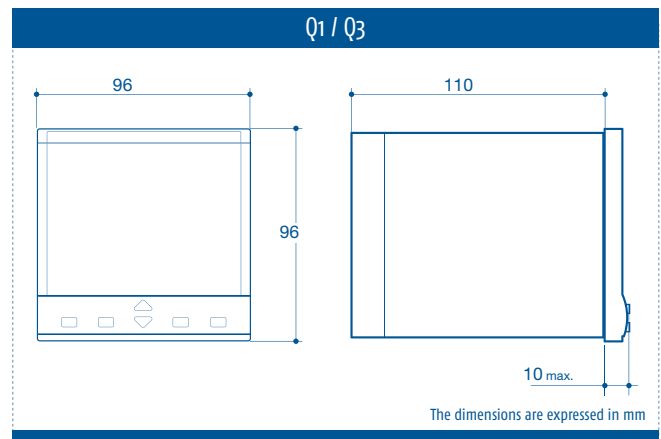
To compose the part number, pls. choose one of the option for each variable

Q1 / Q3	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac/Vdc	3
24 Vac/Vdc	5
<b>OUT 1, OUT 2, OUT 3 AND OUT 4</b>	
Relay-Relay-Relay-Voltage for SSR driving	1
Triac-triac-Relay-Voltage for SSR driving	5
Relay-Relay-Relay-Relay	9
<b>SERIAL COMMUNICATION</b>	
Not available	0
RS485	5
<b>OPTIONS</b>	
Not available	0
Servomotor (Q3 only)	2
Retransmission + Remote Set Point (Q1 only)	5
Analogue Output + Remote Set Point (Q3 only)	5
Servomotor + Analogue Output + Remote Set Point (Q3 only)	7
<b>SPECIAL FUNCTIONS</b>	
Not available	0
Start-up + Timer	2
1 Program 8 segments (Q3 only)	3
<b>INSTRUCTION MANUAL</b>	
Italian/English	0
Not available	9
<b>FRONT FRAME COLOUR</b>	
Dark grey	0
Dark grey + shunt 0.1%	2
<b>SPECIAL EXECUTION</b>	
Not available	0
Tropicalized	3

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES



# ADVANCED PROGRAMMER CONTROLLERS



## The most complete range you may wish!

Single and multiloop controllers and advanced programmers, multifunction and with incorporated and independent timer, in all sizes.

New KUBE line: more and more in less space!  
Pocket size, energy saving functions and advanced features.

## ADVANCED PROGRAMMER CONTROLLERS

FEATURES		KM3	KM5	KX3	KX5	KX6	KR3	KRD3
Dimensions (mm)	78x35						•	•
	48x48	•	•					
	48x96			•	•	•		
	70 x 84 4 DIN Modules							
	96x96							•
Without display								
3 dynamic colour triple LED display						•		
3 dynamic colour dual LED display		•	•	•	•		•	
4 digit Single display								
4 digit Dual display								
4 digit Triple display								
"Sensitive Touch" keyboard								
Input	Universal	•	•	•	•		•	•
	J-K-S-R-T + IR + PTC-NTC							
	J-K-S-R-T + IR + Pt100							
	J-K-S-R-T + IR + 0/4... 20 mA					•		
	ΔT Pt100							
	Digital	2		2			2	
	Frequency Potentiometer For CT							
Relay or voltage for SSR drive outputs		4	4	4	4	4	4	4
Analogue current or voltage outputs		1	1	1	1	1	1	1
Measuring or Set Point retransmission		•	•	•	•	•	•	•
Power supply	12 Vac/Vdc							
	24 Vac/Vdc	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•
Control	ON/OFF and PID	•	•	•	•	•	•	•
	Servomotor control		•		•	•		•
RS485 ModBus Slave		•	•	•	•	•	•	•
RS485 ModBus Master		•	•	•	•	•	•	•
Profibus DP								
Mathematical package								
Timer on board		•		•			•	
Programmer		•		•			•	
CE certification		•	•	•	•	•	•	•
UL approval		•	•	•	•	•	•	•
ENEC approval								



# KM3

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

*evolution*



## FEATURES

DISPLAY	
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs	± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type)
	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone
Alarms	Autotuning and Selftuning algorithms, Overshoot control
Set Point	3 alarms programmable as absolute, deviation, band
Signal retransmission	4 programmable Set Points
Serial communication	Measuring or Set Point retransmission
Baud rate	TTL (standard) + RS485 (optional), ModBus RTU protocol
Working hours counters	1200... 38400 baud
Wattmeter function	A cumulative non-erasable counter and a second one resettable with alarm
EVOogreen	Instantaneous power, time consumption
Programmer (optional)	Stand-by mode of display, selectable
Timer (optional)	Up to 8 segments with guaranteed soak
	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

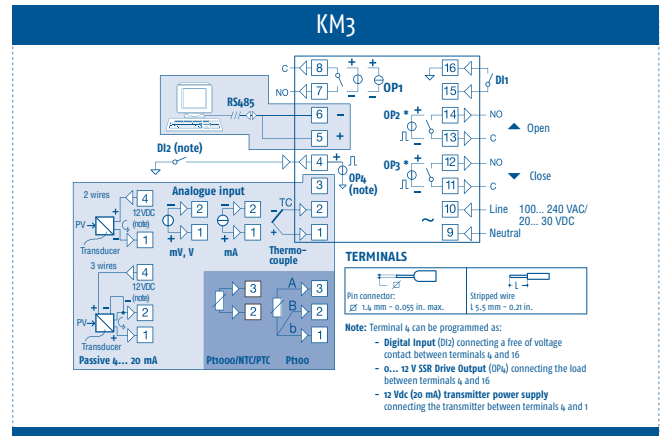


# HOW TO ORDER

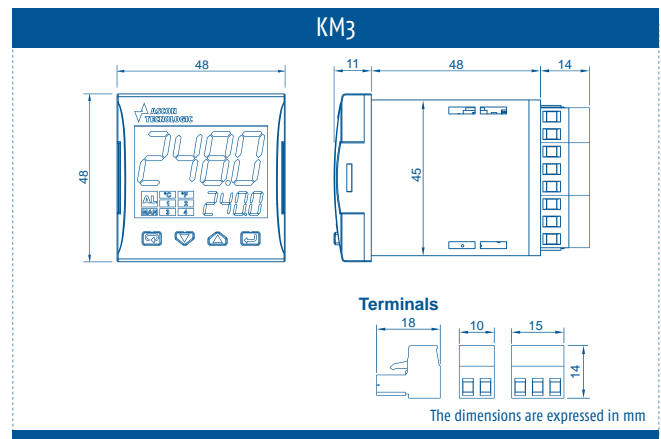
To compose the part number, pls. choose one of the option for each variable

KM3	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# KM5

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

*evolution*



## FEATURES

DISPLAY	
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs	± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type) 1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

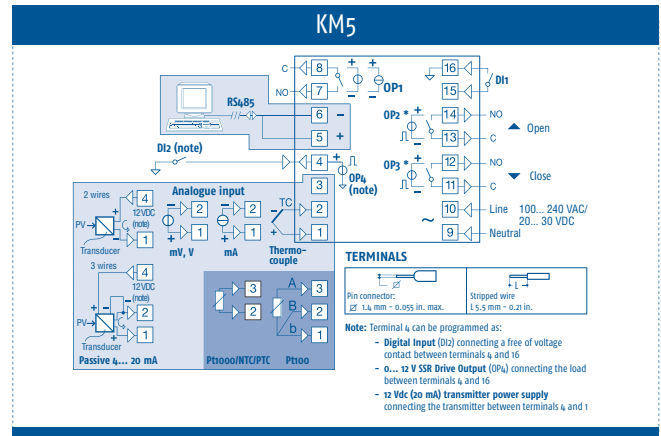
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

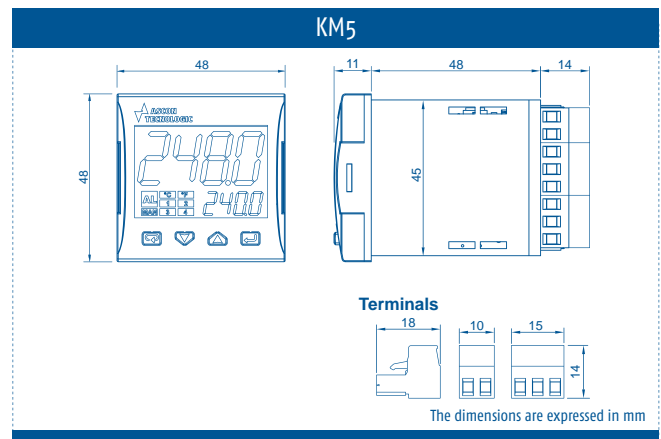
KM5	CODE
<b>VERSION</b>	
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(\*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

# CONNECTIONS



# DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# KX3

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

*evolution*



## FEATURES

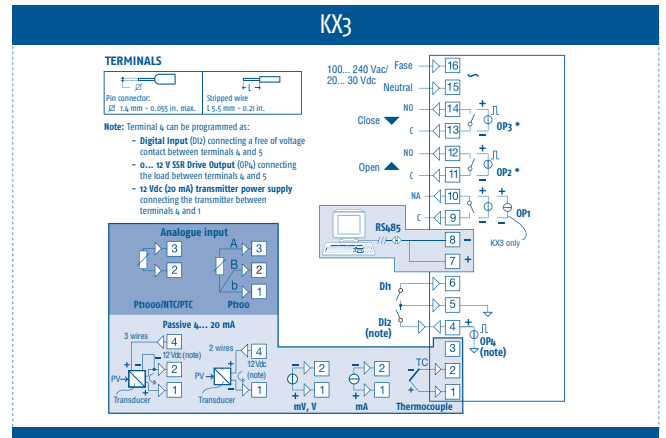
DISPLAY		KX3
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 10 mm 20 segments Bargraph	
INPUTS		
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V	
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V	
Digital inputs	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)	
Accuracy	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)	
OUTPUTS		
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 11.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input	
FUNCTIONAL		
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Seltuning algorithms, Overshoot control	
Alarms	3 alarms programmable as absolute, deviation, band	
Set Point	4 programmable Set Points	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol	
Baud rate	1200... 38400 baud	
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm	
Wattmeter function	Instantaneous power, time consumption	
EVOogreen	Stand-by mode of display, selectable	
Programmer (optional)	Up to 8 segments with guaranteed soak	
Timer (optional)	Independent with 5 function modes	
GENERAL		
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)	
Power consumption	7 VA max	
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 76 mm / 160 g	
Mounting	Flush in panel in 45 x 93 mm hole	
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22.... AWG14) fix, plug-in or clamp type	
Front protection degree	IP 65 mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)	
Operating humidity	20... 95 RH% without condensation	
Conformity	EN 61010-1, EN 61326	

# HOW TO ORDER

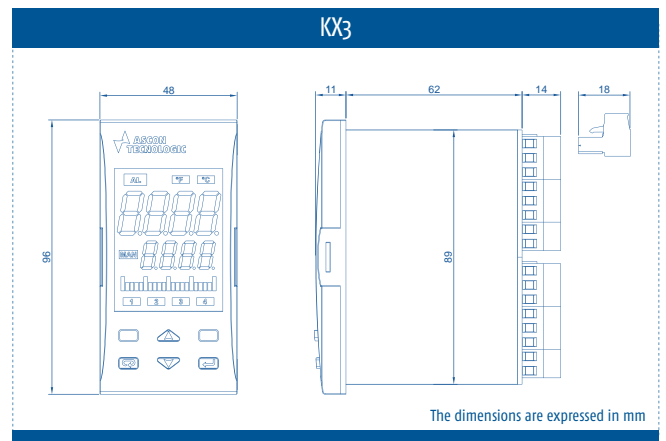
To compose the part number, pls. choose one of the option for each variable

KX3	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# KX5

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

*evolution*



## FEATURES

DISPLAY		KX5
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 10 mm 20 segments Bargraph	
INPUTS		
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V	
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V	
Digital inputs	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)	
Accuracy	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)	
OUTPUTS		
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input	
FUNCTIONAL		
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control	
Servomotor control	Available	
Alarms	3 alarms programmable as absolute, deviation, band	
Set Point	4 programmable Set Points	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol	
Baud rate	1200... 38400 baud	
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm	
Wattmeter function	Instantaneous power, time consumption	
EVOogreen	Stand-by mode of display, selectable	
Programmer (optional)	Up to 12 segments with guaranteed soak	
Programs storage (optional)	Up to 8 programs	
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)	
GENERAL		
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)	
Power consumption	7 VA max	
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 76 mm / 160 g	
Mounting	Flush in panel in 45 x 93 mm hole	
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type	
Front protection degree	IP 65 mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)	
Operating humidity	20... 95 RH% without condensation	
Conformity	EN 61010-1, EN 61326	

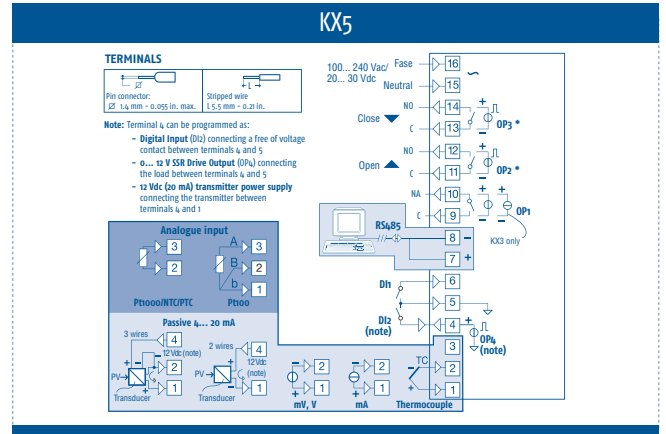
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

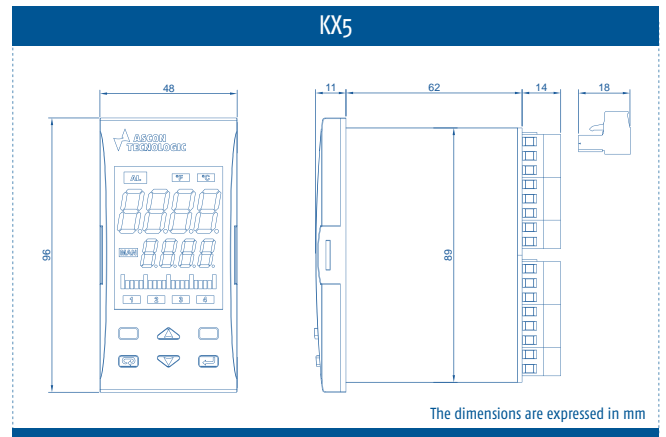
KX5	CODE
<b>VERSION</b>	
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(\*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

# CONNECTIONS



# DIMENSIONS



# KX6

- 3 DYNAMIC COLOUR LED DISPLAY
- INPUT FROM POTENTIOMETER
- SELF-CALIBRATION POTENTIOMETER
- SELF-PACED RUNNING TIME SERVOMOTOR

*evolution*



## FEATURES

DISPLAY		KX6
3 displays, LED type		Upper (main) display: 15.5 dynamic three colours red, green and amber or 1 fixed selectable colour Central display: 4 digit height 10 mm (green colour) Lower display: 2 1/2 digit height 10 mm (green colour)
INPUTS		
Input 1 (configurable)		Thermocouples: J (-50... +1000°C/-58... +1832°F), K (-50... +1370°C/-58... +2498°F), S/R (-50... +1760°C/-58... +3200°F), T (-70... +400°C/-94... +752°F) Linear signals: 0/4... 20mA
Measurement accuracy		±0.5% span ±1 digit, (±1% span ±1 digit for T/c type S)
Input 2		Potentiometer 100 Ω... 10 kΩ (option)
Digital inputs		DI1: 1 contact input DI2: Isolated voltage input (24 VAC/DC or 110/230 VAC) (option)
OUTPUTS		
Up to four		OUT1: Relay SPST-NO 2A/240 VAC or analogue 0/4... 20 mA, 0/2... 10 V galvanically isolated OUT2: Relay SPST-NO 2A/240 VAC OUT3 and OUT4: Relay SPST-NO 2A/240 VAC (for resistive loads)
FUNCTIONAL		
Control		PID single action (direct or reverse) for servomotor control or linear output (mA/V), PID Heating or Heating/Cooling action. On/Off, On/Off with Neutral Zone, Autotune, Selftune and evoTune. Overshoot control
Alarms		2 alarms (configurable as absolute, deviation and band alarm)
Set Point		4 Set points selectable
Serial communications		TTL (standard) + RS485 (optional), protocol: MODBUS RTU
Communications speed		1200... 38400 baud selectable (8 bit + 1 stop bit, no parity)
Evogreen		Time based Display switch-off, selectable
Other functions		Self-calibration potentiometer Auto learning servomotor stroke time
GENERAL		
Power supply		100... 240 VAC/DC (-15... +10%), 50/60 Hz, power consumption 7 VA max.
Temperature		Operating: 0... 50°C (32... 122°F); Storage: -20... +70°C (-4... +158°F);
Relative humidity		20... 95 RH% with no condensation
Front removable		Instrument removable from the case without unwiring or opening the cabinet
Conformity		EN 61010-1, EN 61326



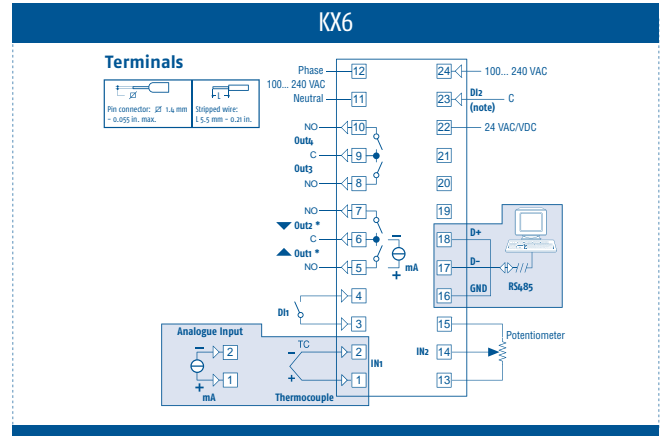
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

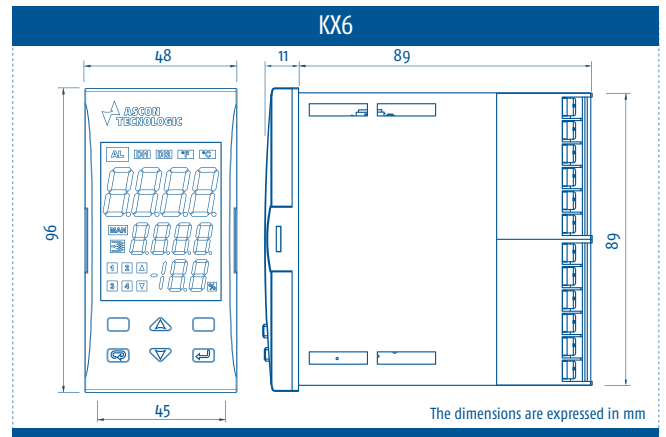
KX6	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac	H
<b>INPUT</b>	
TC, mA, mV + digital input 1 (*)	B
<b>OUT 1 + OUT2</b>	
OUT1 + OUT2: Relay SPST-NO 2A for Servomotor driving	MM
OUT1: 0/4... 20 mA, 0/2... 10V galvanically isolated	I-
OUT2: Not available	
<b>OUT 3</b>	
Relay SPST-NO 2A	R
<b>OUT 4</b>	
Relay SPST-NO 2A	R
<b>OPTIONS (TTL MODBUS IS ALWAYS AVAILABLE)</b>	
Potentiometer input + Digital Input 2 + RS 485 Modbus	C
Potentiometer input + Digital Input 2	P
RS485 Modbus	S
None	-

(\*) It's possible to obtain an input 0... 10V or 0... 5V, ordering the following part no, respectively:  
 AP ADPINMV-KX-V10  
 AD ADPINMV-KX-V5

# CONNECTIONS



# DIMENSIONS



# KR3

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

*evolution*



## FEATURES

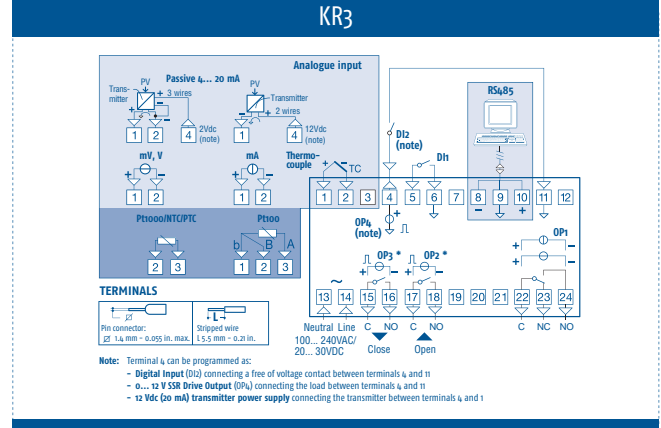
DISPLAY		KR3
Dual LED		Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS		
Universal		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy		Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs		± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type) 1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS		
Up to 4		OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL		
Control		PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms		3 alarms programmable as absolute, deviation, band
Set Point		4 programmable Set Points
Signal retransmission		Measuring or Set Point retransmission
Serial communication		TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate		1200... 38400 baud
Working hours counters		A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function		Instantaneous power, time consumption
EVOgreen		Stand-by mode of display, selectable
Programmer (optional)		Up to 8 segments with guaranteed soak
Timer (optional)		Independent with 5 function modes
GENERAL		
Power supply		24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption		7 VA max
Dimensions / Weight		78 x 35 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting		Flush in panel in 45 x 45 mm hole
Connections		16 screw terminals 2.5 mm <sup>2</sup> (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree		IP 65, mounted on panel with gasket
Operating / storage temperature		0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity		20... 95 RH% without condensation
Conformity		EN 61010-1, EN 61326

# HOW TO ORDER

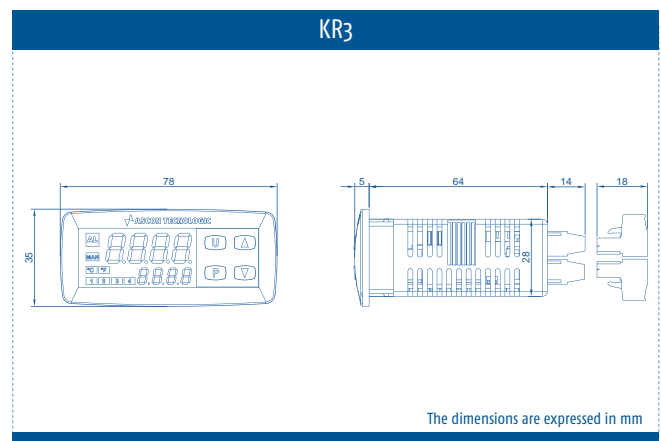
To compose the part number, pls. choose one of the option for each variable

KR3	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# KRD3

- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER
- INDEPENDENT TIMER
- WORKING HOURS COUNTER

*evolution*



## FEATURES

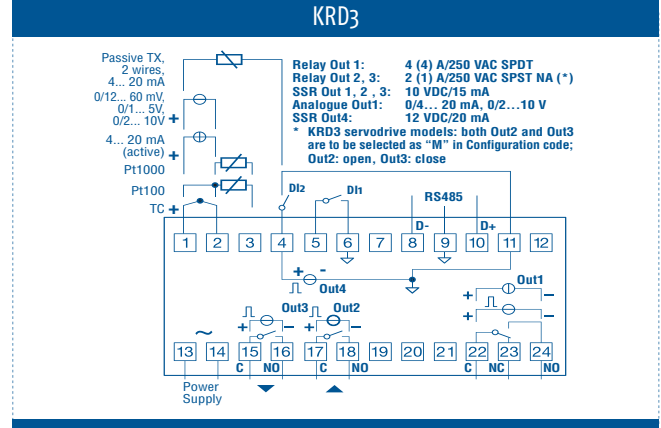
INPUTS	
Input	KRD3 Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital input	1, always on board
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm - 200 g
Mounting	On OMEGA DIN A rail or on wall
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

# HOW TO ORDER

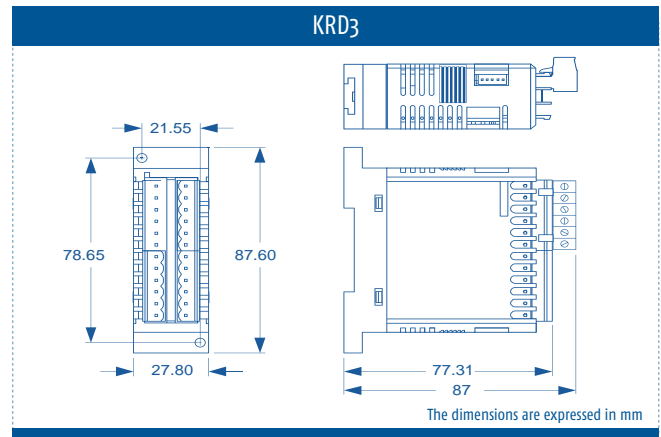
To compose the part number, pls. choose one of the option for each variable

KRD3	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV/digital input	C
<b>OUT 1</b>	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated	I
<b>OUT 2</b>	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
<b>OUT 4</b>	
Digital input or digital output or transmitter supply	D
<b>RS485</b>	
Available (Standard)	S
Not available (Optional)	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# KR5

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

*evolution*



## FEATURES

DISPLAY	
	<b>KR5</b>
Dual LED	Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Digital inputs	± 0.5% span ±1 digit, (±1% span ±1 digit for T/C S type) 1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

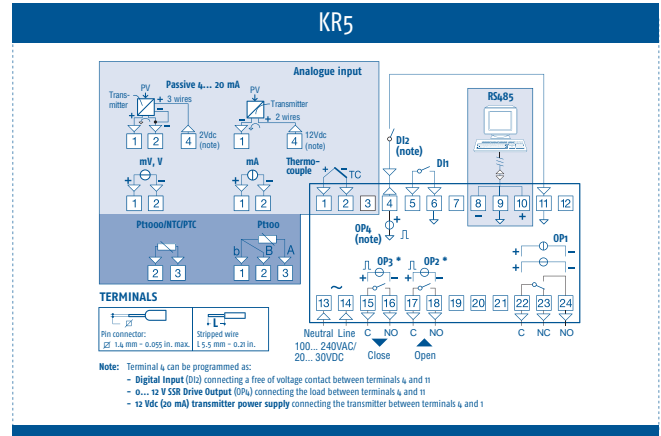
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

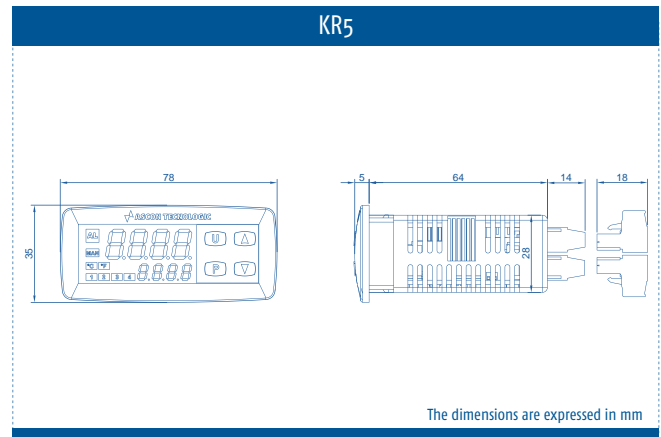
KR5	CODE
<b>VERSION</b>	
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
<b>OUT 1</b>	
Relay SPDT 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
<b>OUT 2</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 3</b>	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
<b>OUT 4</b>	
Digital input 2 or digital output or transmitter supply	D
<b>RS485</b>	
Available	S
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(\*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

# CONNECTIONS



# DIMENSIONS



# K 31/32/38/39

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

DISPLAY	K31	K32	K38	K39
Display	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm
<b>INPUTS</b>				
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F)			
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)			
	Linear signals 0/4... 20mA			
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V			
Accuracy	±0.5% fs + 1 digit; tc S ±1% fs + 1 digit			
Digital inputs	2 for free voltage contacts		--	
<b>OUTPUTS</b>				
Up to 4 (K31 and K32) Up to 2 (K38 and K39)	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR		OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR	
Auxiliary power supply	12 Vdc/20 mA max.			
<b>FUNCTIONAL</b>				
Control	ON/OFF, Neutral Zone, PID single and double action			
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms			
Multi Set Point	Up to 4 pre-programmable Set Point			
Program	Up to 8 segments with guaranteed soak			
Timer	Independent with 4 function modes			
Signal retransmission	Set Point		--	
Serial communication	RS485 with ModBus-RTU (JBUS) protocol		TTL ModBus	
Baud rate	1200... 38400 baud, programmable		--	
<b>GENERAL</b>				
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)			
Power consumption	6 VA approx.			
Dimensions / Weight	78 x 35 mm - depth 64 mm or 78.5 mm with plug-in terminals / 180 g approx.		78 x 35 mm - depth 64 mm / 180 g approx.	
Keyboard	Mechanical	Mechanical or "Sensitive Touch"	Mechanical	
Mounting	Flush in panel in 71 x 29 mm hole			
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm <sup>2</sup>		Screw terminal block 2 x 1 mm <sup>2</sup>	
Front protection degree	IP 65, mounted on panel with gasket			
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)			
Operating humidity	20... 85 RH% without condensation			
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)			



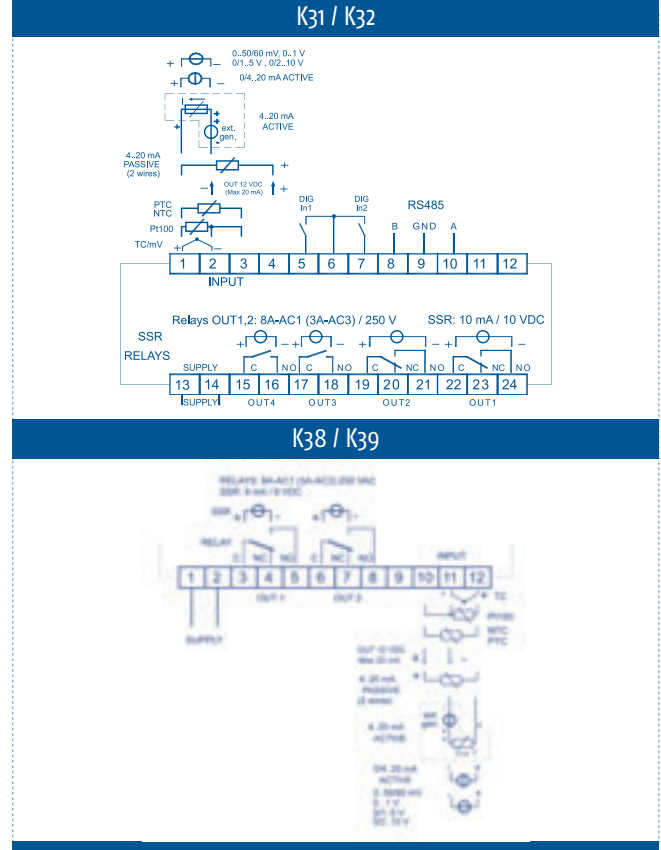
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

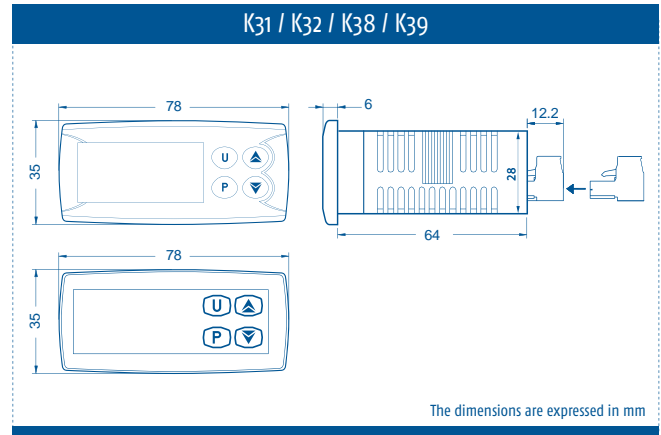
K31 / K32 / K38 / K39	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*) – K32 only	S
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Mosfet output (K31 only)	M
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3 (SOLO K31 E K32)</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
<b>OUT 4 (SOLO K31 E K32)</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
<b>SERIAL COMMUNICATION (K31 AND K32)</b>	
RS485	S
TTL ModBus	-

(\*) K32: Capacitive Touch screen keyboard

# CONNECTIONS



# DIMENSIONS



The dimensions are expressed in mm

# K 48/49

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

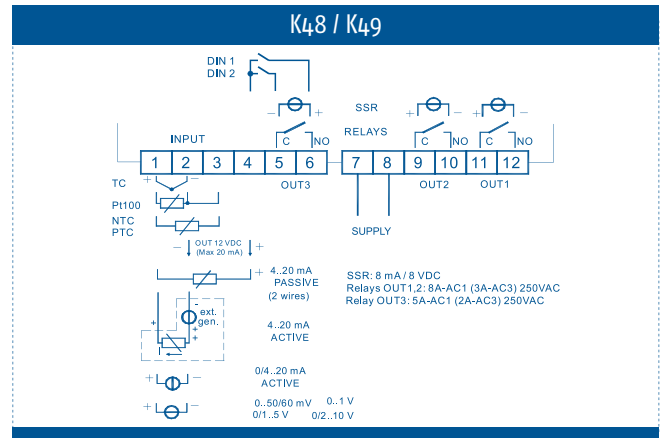
DISPLAY	K48	K49
Display	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm
<b>INPUTS</b>		
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F)	
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)	
	Linear signals 0/4... 20mA	
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V	
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit	
Digital inputs	2 for free voltage contacts, as alternative to OUT 3	
<b>OUTPUTS</b>		
Up to 3	OUT 1 and OUT 2: Relay SPST-NO (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR	
Auxiliary power supply	12 Vdc/20 mA max.	
<b>FUNCTIONAL</b>		
Control	ON/OFF, Neutral Zone, PID single and double action	
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms	
Multi Set Point	Up to 4 pre-programmable Set Point	
Program	Up to 8 segments with guaranteed soak	
Timer	Independent with 4 function modes	
Serial communication	TTL ModBus	
<b>GENERAL</b>		
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	
Power consumption	6 VA approx.	
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 98 mm / 180 g approx.	
Mounting	Flush in panel in 45 x 45 mm hole	
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>	
Front protection degree	IP 65, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)	

# HOW TO ORDER

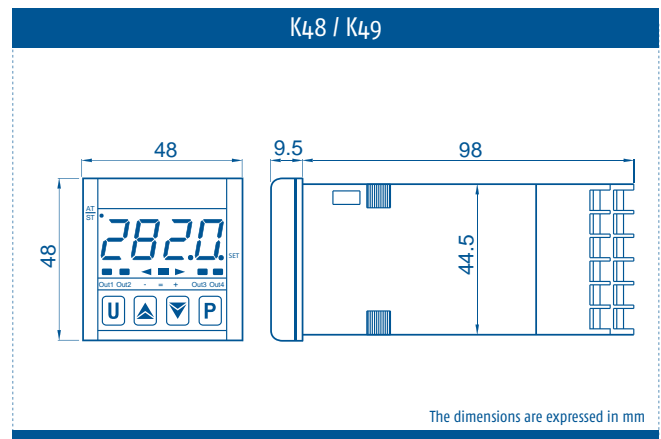
To compose the part number, pls. choose one of the option for each variable

K48/K49	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3/ DIGITAL INPUTS</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
2 digital inputs	D
Not available	-

# CONNECTIONS



# DIMENSIONS



# K85

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

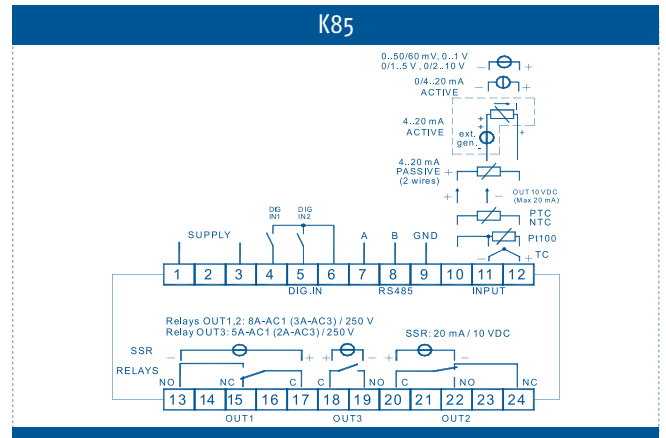
DISPLAY	
Single	K85 4 red digit, h 12 mm + 3 LEDs Bargraph
INPUTS	
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F) Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 3	OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	4 DIN rail module, 70 x 84 mm - depth 60 mm / 230 g approx.
Mounting	On OMEGA DIN A rail
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>
Front protection degree	IP 40
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

# HOW TO ORDER

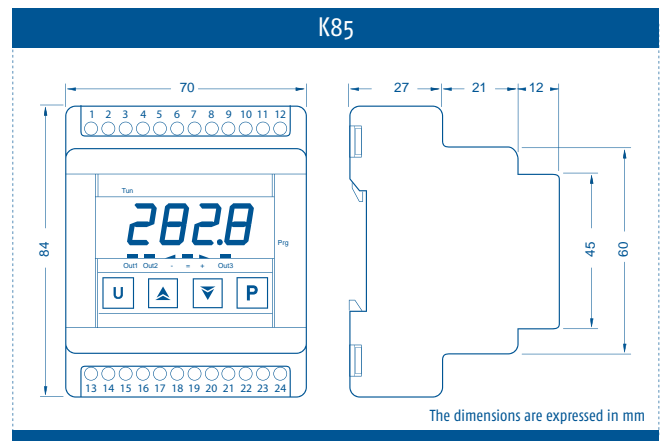
To compose the part number, pls. choose one of the option for each variable

K85	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3/ DIGITAL INPUTS</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL ModBus	-
<b>DIGITAL INPUT</b>	
2 digital inputs	D
Not available	-

# CONNECTIONS



# DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# K30

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

### INPUTS

K30	
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F) Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
Accuracy	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	±0.5% fs + 1 digit; tc S ± 1% fs + 1 digit
	2 for free voltage contacts

### OUTPUTS

Up to 5	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 5: 12V ±20% 20 mA max. to drive SSR (always available on board)
Auxiliary power supply	12 Vdc/20 mA max.

### FUNCTIONAL

Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable

### GENERAL

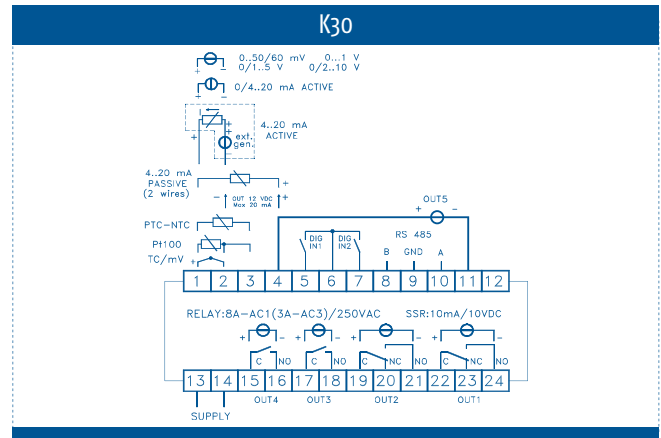
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75.5 mm or 78.5 mm with plug-in terminals / 180 g approx.
Mounting	On OMEGA DIN A rail
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm <sup>2</sup>
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

# HOW TO ORDER

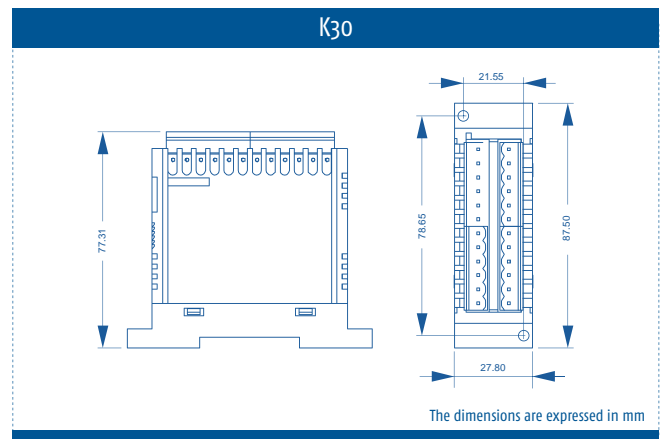
To compose the part number, pls. choose one of the option for each variable

K30	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1 / OUT 5 SSR (ALWAYS ON BOARD)</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 4</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL ModBus	-

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# M5

- PROCESS CONTROLLER
- ANALOGUE CONTROL OUTPUT OR SERVOMOTOR OUTPUT
- 16 SEGMENTS PROGRAMMER



## FEATURES

DISPLAY	
Double	M5 Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 8 mm + 8 LEDs
INPUTS	
Universal	Thermocouples: L/J/E (0... +600°C / 32... +112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32...3272°F), W3/W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +112°F) Linear signals: 0/4...20 mA, 0... 50mV/0... 300mV, 0/1... 5V/0... 10V - Engineering units with or without decimal and square root extraction Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (thermoelements) 0 0.1% ±1 digit (for mA and mV)
Auxiliary inputs (opt.)	Non isolated remote Set Point: current 0/4... 20mA or voltage 1...5/ 0...5/ 0...10V Current Transformer for Heater Break function Potentiometer position feedback measurement
Digital inputs	2
OUTPUTS	
Up to 4	OUT 1 and OUT 2: Relay NO, 2A/250Vac for resistive loads or Triac 1A/250Vac for resistive loads OUT 3: Relay NO, 2A/250Vac for resistive loads OUT 4: Analogue in current: 0/4...20mA max. 750Ω/10V max./ voltage: 0...1/5/10V 500Ω / 20mA max. (galvanically isolated) or 0...18Vdc, 20mA max. to drive SSR
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)
FUNCTIONAL	
Control	PID, ON/OFF
PID functions	PID H/C control, Dead band, overshoot control, manual reset, cycle time, high and low limits, max. control output speed rate, Soft-start, safety output, forcing output, Fuzzy Tuning, Adaptive Tuning
Operating modes	1 Loop with single/double action with or without programmer
Set Point	Local + 2 stored Set points, only Remote, Local and Remote, Local with trim, Remote with trim, Time programmable
Program	1 program, 16 segments, 1... 9999 cycles or continuous cycling (OFF)
Auto/Man station	Integrated, Bumpless operated from keyboard, digital inputs and serial communication
Servomotor control	Motor travel time, motor minimum step
Signal retransmission	Measuring or Set Point retransmission
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200, 2400, 4800, 9600, 19200 bit/s, a 3 wires
GENERAL	
Power supply	100... 240 Vac (-15...+10%) 0 24Vac (-25...+12%) e 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3VA max.
Dimensions / Weight	48 x 48 mm (1/16 DIN), depth 150 mm / 230 g approx.
Mounting	Flush in panel in 45 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH without condensation
Conformity	EN 61010-1

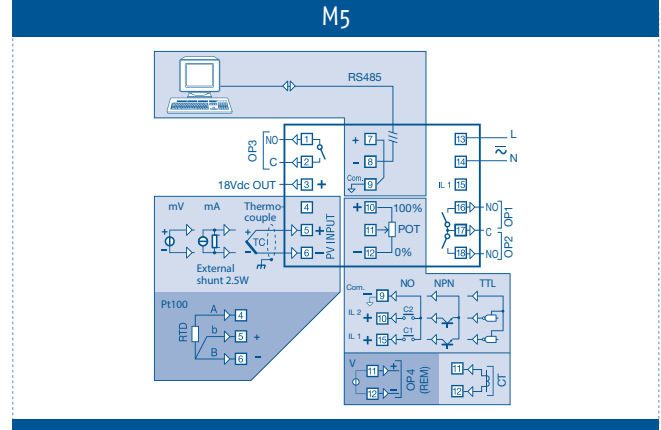


# HOW TO ORDER

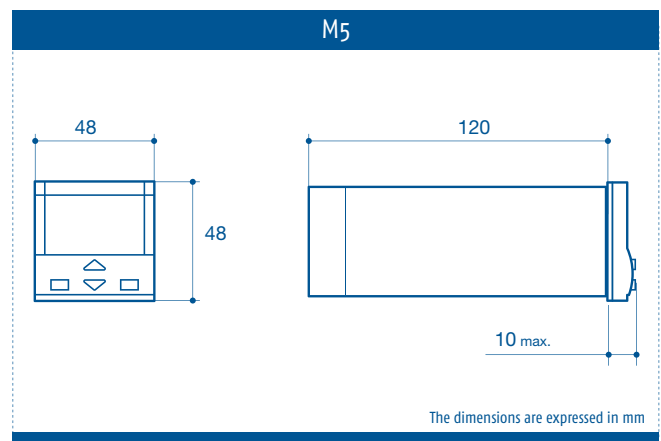
To compose the part number, pls. choose one of the option for each variable

M5		CODE
<b>POWER SUPPLY</b>		
100... 240 Vac		3
24 Vac/Vdc		5
<b>OUT 1 AND OUT 2</b>		
Relay/Relay		1
Relay/triac		2
Triac/Relay		4
Triac/triac		5
<b>SERIAL COMMUNICATION</b>		
	<b>OPTIONS</b>	
Not available	Not available	00
	Potentiometer	01
	Remote Set Point	02
	CT input	03
	Voltage for SSR driving/ Analogue output	04
Not available	Voltage for SSR driving/ Analogue output+ Remote Set point	05
	Not available	50
	Potentiometer	51
RS485	Remote Set Point	52
	CT input	53
	Voltage for SSR driving/ Analogue output	54
<b>SPECIAL FUNCTIONS</b>		
Not available		0
Programmer		1
<b>INSTRUCTION MANUAL</b>		
Italian/English		0
Not available		9
<b>FRONT FRAME COLOUR</b>		
Dark grey (std)		0
Dark grey shunt 0.1%		2
<b>SPECIAL EXECUTION</b>		
Not available		0
On DIN rail		1
On DIN rail without display		2
Tropicalized		3

# CONNECTIONS



# DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# X5/Q5

- CONTROLLER WITH PROFIBUS DP
- UP TO 6 OUTPUTS: 2 ANALOGUE OUTPUTS AND 4 SET POINTS
- PROGRAMMER AND MATHEMATICAL PACKAGE



## FEATURES

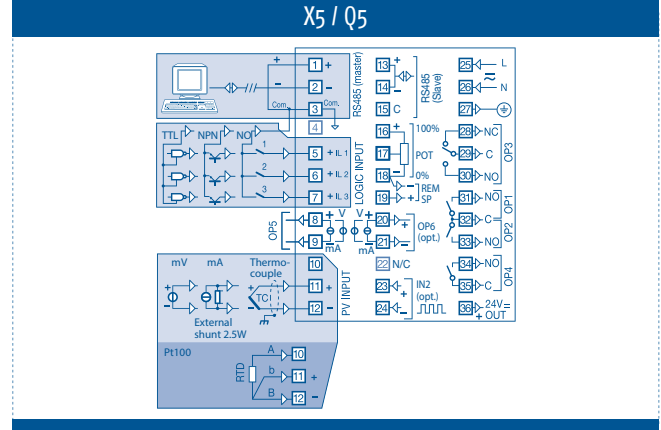
DISPLAY	X5	Q5
Triple	Main display (PV): 4 green digit, h 12 mm Secondary display (SP): 4 green digit, h 7 mm Third display (OUT): 4 green digit, h 7 mm	Main display (PV): 4 green digit, h 15 mm Secondary display (SP): 4 green digit, h 12 mm Third display (OUT): 4 green digit, h 9 mm
<b>INPUTS</b>		
Universal	Thermocouples: U/I/E (0... +600°C / 32... +112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32...3272°F), W3/W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +112°F) Linear signals: 0/4...20 mA, 0... 50mV/0... 300mV, 0/1... 5V/0... 10V - Engineering units with or without decimal and square root extraction Infrared sensors or special ranges (custom)	
Frequency	0...2000 Hz, 0...20000 Hz;	
Auxiliary inputs	Remote Set Point not isolated (accuracy 0.1%) Current 0/4...20 mA Voltage 0/1... 5V/0... 10V	
Digital inputs	Potentiometer position feedback measurement 3 for voltage contacts	
<b>OUTPUTS</b>		
Up to 6	OUT 1 and OUT 2: Relay NO, 2A/250Vac or Triac, 1A/250Vac, for resistive loads OUT 3: Relay SPDT, 2A/250Vac for resistive loads OUT 4: Relay NO, 2A/250Vac for resistive loads OUT 5 and OUT6: current: 0/4...20mA max. 750Ω/10V max. / voltage: 0...1/5/10V 500Ω / 20mA max. or 0/24Vdc ±10% - 30mA max. to drive SSR	
Auxiliary power supply	+24DC ±20% 30mA max. - for external transmitter	
Alarms	Up to 4 alarms programmable as high/low, band alarm, deviation, Loop Break, Sensor Break	
<b>FUNCTIONAL</b>		
Control	PID, ON/OFF single or double action, Split range	
PID functions	PID H/C control, Dead band, overshoot control, manual reset, cycle time, high and low limits, max. control output speed rate, Soft-start, safety output, forcing output, Fuzzy Tuning, Adaptive Tuning	
Servomotor control	PID algorithm for 3 position Servomotor: Increase/Stop/Decrease according to: motor travel time, motor minimum step, Potentiometer	
Set Point	Local + 3 stored Set points, only Remote, Local and Remote, Local with trim, Remote with trim, programmable (Remote Set Point mutually exclusive with frequency input)	
Program	4 programs, 16 segments, 1... 9999 cycles or continuous cycling (OFF)	
Auto/Man station	Integrated, Bumpless operated from keyboard, digital inputs and serial communication	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol MASTER and SLAVE - RS 485 asynchronous/isolated, PROFIBUS DP protocol	
Baud rate	RS 485 (MASTER or SLAVE) Up to 19.200 bit/s; PROFIBUS DP Up to 12Mb/s max. distance 100m (12Mb/s)	
<b>GENERAL</b>		
Power supply	100... 240 Vac (-15...+10%) or 24Vac (-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	5VA max.	
Dimensions / Weight	48 x 96 mm (1/8 DIN), depth 110 mm / 250 g approx.	96 x 96 mm (1/4 DIN), depth 110 mm / 500 g approx.
Mounting	Flush in panel in 45 x 92 mm hole	Flush in panel in 92 x 92 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

# HOW TO ORDER

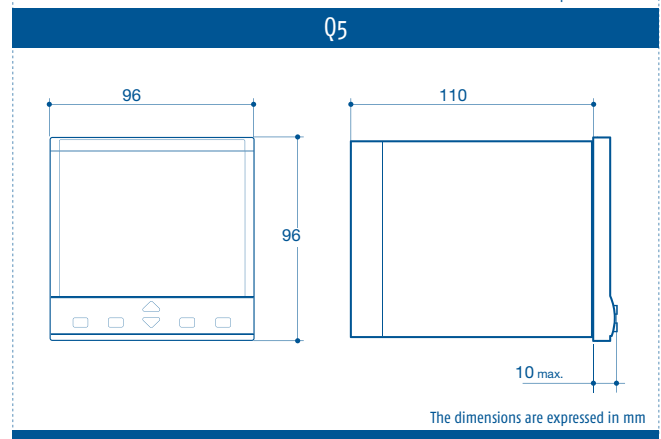
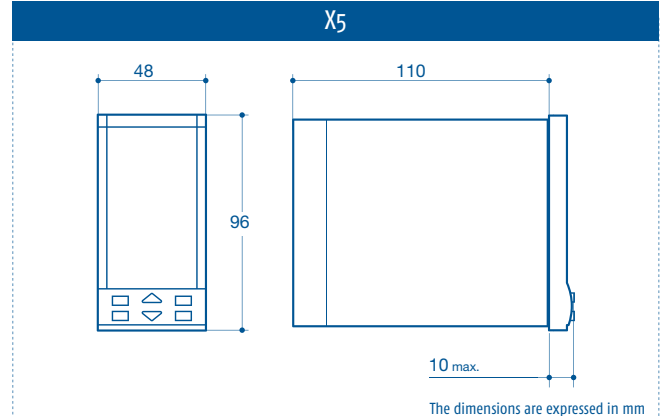
To compose the part number, pls. choose one of the option for each variable

X5 / Q5	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac	3
24 Vac/Vdc	5
<b>OUT 1, OUT 2, OUT 3, OUT 4 AND OUT 5</b>	
Relay-Relay-Relay-Relay-logic/analogue	1
Triac-triac-Relay-Relay-logic/analogue	5
<b>SERIAL COMMUNICATION</b>	
Not available	0
Mathematical package (MP)	1
RS485 + MP	5
RS485 Slave+Master+MP	6
Profibus DP+MP	7
RS485 + Profibus DP+MP	8
<b>OPTIONS</b>	
Not available	0
HZ input	1
OUT 6 analogue	4
OUT 6 analogue + Hz	6
OUT 6 analogue + 300Hz input - (X5 only)	7
<b>SPECIAL FUNCTIONS</b>	
Not available	0
4 Programs 16 segments	4
<b>INSTRUCTION MANUAL</b>	
Italian/English	0
Not available	9
<b>FRONT FRAME COLOUR</b>	
Dark grey	0
Dark grey + shunt 0.1%	2
<b>SPECIAL EXECUTION</b>	
Not available	0
Tropicalized	3

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES



# DIN RAIL MOUNTING CONTROLLERS



## Versatile and compact

A complete range of modules, which are open to the outside world with "Manager/Gateway" and with a wide range of operator interfaces.

Modules plug and play for the control and the acquisition of analog and digital signals.

## DIN RAIL MOUNTING CONTROLLERS

FEATURES		D1	D3
Dimensions (mm)	78 x 35		
	22.5 x 99	•	•
	70 x 85 4 DIN Modules		
Single display 4 digit			
Input	Number of inputs	1	1
	Universal	•	•
	J-K-S-R-T + IR + PTC-NTC		
	J-K-S-R-T + IR + Pt100		
Relay or voltage for SSR drive outputs	Digital	1	1
	For CT	•	
Analogue current or voltage outputs			4
Measuring or Set Point retransmission			1
Power supply	12 Vac/Vdc		•
	24 Vac/Vdc	•	•
	100... 240 Vac		
Control Loops		1	1
Control	ON/OFF and PID	•	•
	ON/OFF		
	Servomotor control		•
RS485 ModBus Slave		•	•
Timer on board		•	•
Start up		•	•
Programmer			
CE certification		•	•
UL approval		•	•

	D2	K30	KRD3	K85	TLZ35
	•	•	•		
				•	•
	2	1	1	1	1
	•	•	•	•	•
	1+2	2	2	2	
	2+2	5	4	4	2
			1		
	•	•	•	•	•
	2	1	1	1	1
	•	•	•	•	•
	•	•	•	•	•
	•	•	•	•	•
	•	•	•	•	•
	•	•	•	•	•

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# D1/D2/D3

- 1 OR 2 LOOP CONTROLLERS
- SINGLE OR DOUBLE ACTION
- UP TO 3 ALARMS + RS485 + CT INPUT



## FEATURES

INPUTS	D1	D3	D2
Number of inputs	1		2
Universal	Thermocouples: L/J/E (0... +600°C / 32... +112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C/32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32... 3272°F), Ni-NiMo (0... 1100°C / 32... 2012°F), W3, W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 (-99.9... 300.0°C / -99.9... 572.0°F and -200... 600°C / -328... 112°F) Linear signals: 0/10...50 mV; 0/4...20 mA (shunt) Infrared sensors or special ranges (custom)		
Auxiliary input	Current transformer	--	
Digital inputs	1 voltage digital input		1 voltage digital input (+ 2 programmable)
OUTPUTS			
Up to 4 (D1) Up to 5 (D3) Up to 3 (D2)	OUT 1 and OUT 2: Relay NO, 2A res./250Vac (4A res./120Vac)/SSR, 1A res./250Vac OUT 3: Relay NO, 2A res./150Vac OUT 4: Logic not isolated: 0...5 Vdc OUT 5: (D3 only) 0/4... 20 mA, 15V max.		OUT 1 and OUT 2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac, logic not isolated 0/5 Vdc OUT 3: Logic not isolated 0/5 Vdc
Outputs function	--		NOT
Auxiliary power supply	+24dc, ±20%, 30 mA max. - for external transmitter		--
FUNCTIONAL			
Control	1 Loop PID with overshoot control, ON/OFF single and double action (Heat-Cool)		Double acquirer, 2 loops PID with overshoot control or ON/OFF single action
PID functions	Dead band, overshoot control, manual reset, cycle time, max. control output speed rate, Soft-start, safety output		
PID algorithm for Servomotor	--	Optional	--
Set Point	Local, Local + 2 stored, with tracking, Stand-by		Local, Local + 2 stored Stand-by
Special functions	Timer, Start-up		
Alarms	Up to 3		Up to 4
Alarm functions	Sensor break, Latching/Blocking, Loop break, Heater break associated to the timer (if available)		
Tuning	Fuzzy Tuning One shot or Natural Frequency		
Auto/Man station	Integrated, Bumpless operated from digital input and serial communication		
Signal retransmission	--	Measuring or setpoint retransmission (reference value)	--
Serial communication	Isolated RS485 with Modbus RTU protocol		
Baud rate	RS 485 (MASTER or SLAVE) 1200, 2400, 4800, 9600 bit/s 3 wires		
GENERAL			
Power supply	24Vac (-25... +12%), 24Vdc (-15... +25%) / 50/60Hz		
Power consumption	4VA max.		
Front indications	3 red LEDs for DO + 1 green LED for PWR/COM		4 red LED for DO + 1 green LED for PWR/COM
Dimensions / Weight	22.5 x 99 mm, depth 114.5 mm / 159 g approx.		
Mounting	On DIN A rail		
Connections	Power supply and comms: 0.08... 1.5 mm <sup>2</sup> (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm <sup>2</sup> (AWG24-AWG12)		
Protection degree	IP20 (terminal block)		
Parameters access	Tramite linea seriale e software di supervisione		
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)		
Operating humidity	5... 95 RH% without condensation		
Conformity	EN61010-1 (IEC1010-1)		

Note: these modules can be inserted into Profibus DP and DeviceNet nets, together with a DX module, with the possibility of automatic reconfiguration.

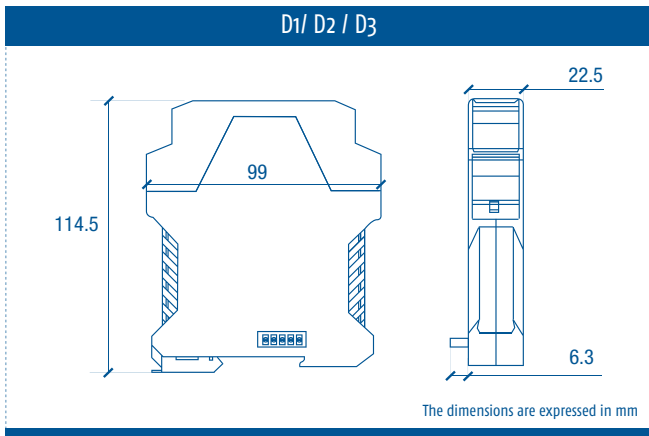


# HOW TO ORDER

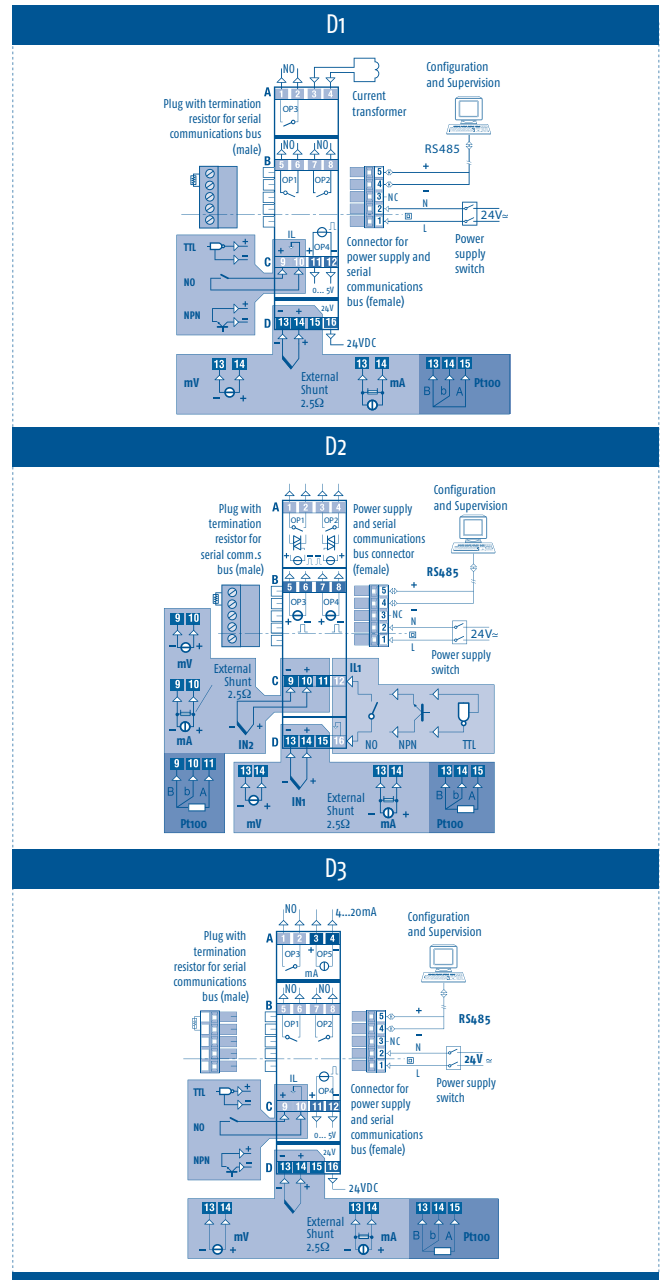
To compose the part number, pls. choose one of the option for each variable

D1 / D2 / D3	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	5
<b>OUT 1 E 2</b>	
Relay (D1 only)	0
Relay-Relay	1
Relay-Vdc for SSR driving (D2 only)	2
Triac (D1 only)	3
Vdc for SSR driving-Vdc for SSR driving (Solo D2)	3
Triac-triac (D2 only)	4
Triac-triac (D1 and D3 only)	5
Triac-Vdc for SSR driving (D2 only)	5
<b>SERIAL COMMUNICATION</b>	
RS485	5
<b>OPTIONS 1</b>	
Not available	0
Servomotor (D3 only)	2
Current transformer (D1 only)	3
Analogue Out (D3 only)	5
Servomotor + Analogue Out (D3 only)	7
<b>SPECIAL FUNCTIONS (D1 AND D3 ONLY)</b>	
Not available	0
Start-up + Timer	2
<b>INSTRUCTION MANUAL</b>	
Italian/English	0
Not available	9
<b>OPTIONS 2</b>	
Shunt 1%	0
Shunt 0.1%	2
<b>OPTIONS 3</b>	
Not available	0
Tropicalization	3

# DIMENSIONS

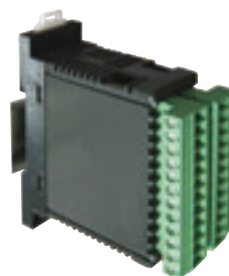


# CONNECTIONS



# K30

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

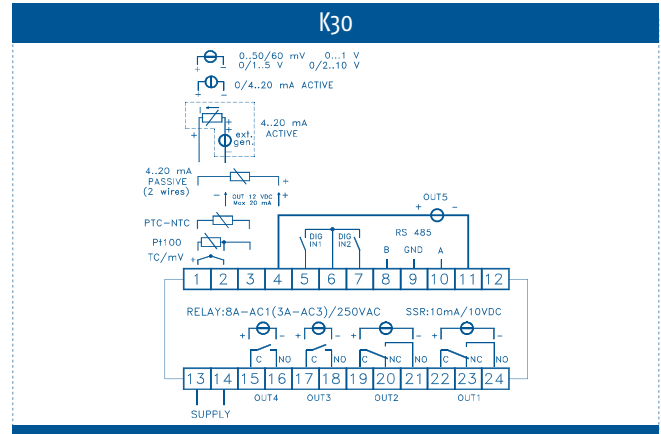
INPUTS	
4 different configurations	K30 Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F) Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F) Linear signals 0/4... 20mA
Accuracy	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	±0.5% fs + 1 digit; tc S ± 1% fs + 1 digit
2 for free voltage contacts	
OUTPUTS	
Up to 5	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 5: 12V ±20% 20 mA max. to drive SSR (always available on board)
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75.5 mm or 78.5 mm with plug-in terminals / 180 g approx.
Mounting	On OMEGA DIN A rail
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm <sup>2</sup>
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

## HOW TO ORDER

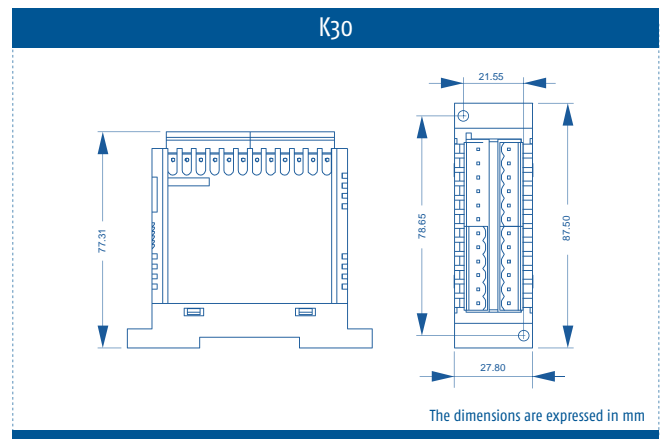
To compose the part number, pls. choose one of the option for each variable

K30	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1 / OUT 5 SSR (ALWAYS ON BOARD)</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 4</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL ModBus	-

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# KRD3

- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER
- INDEPENDENT TIMER
- WORKING HOURS COUNTER

*evolution*



## FEATURES

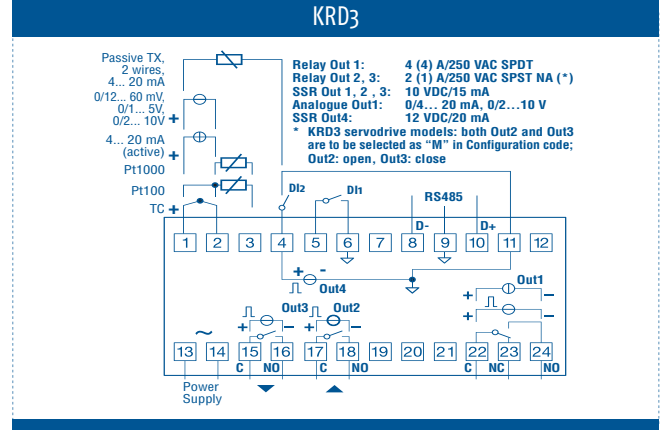
INPUTS	
Input	KRD3 Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58... 3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital input	1, always on board
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional) OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm - 200 g
Mounting	On OMEGA DIN A rail or on wall
Connections	16 screw terminals 2.5 mm <sup>2</sup> (AWG22... AWG14) fix, plug-in or clamp type
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

# HOW TO ORDER

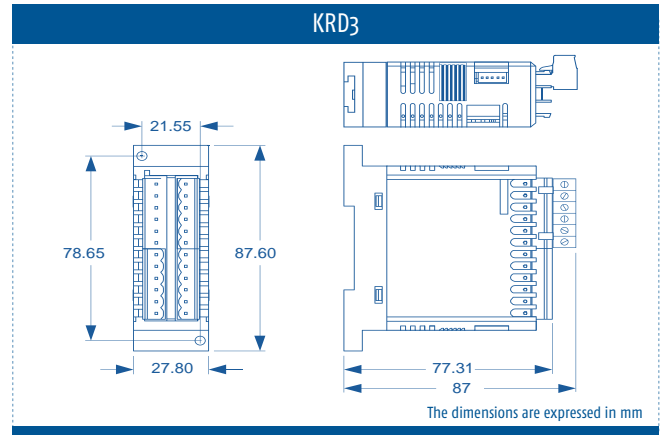
To compose the part number, pls. choose one of the option for each variable

KRD3	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, RTD, mA, V, mV/digital input	C
<b>OUT 1</b>	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated	I
<b>OUT 2</b>	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
<b>OUT 4</b>	
Digital input or digital output or transmitter supply	D
<b>RS485</b>	
Available (Standard)	S
Not available (Optional)	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

# CONNECTIONS



# DIMENSIONS



# K85

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



## FEATURES

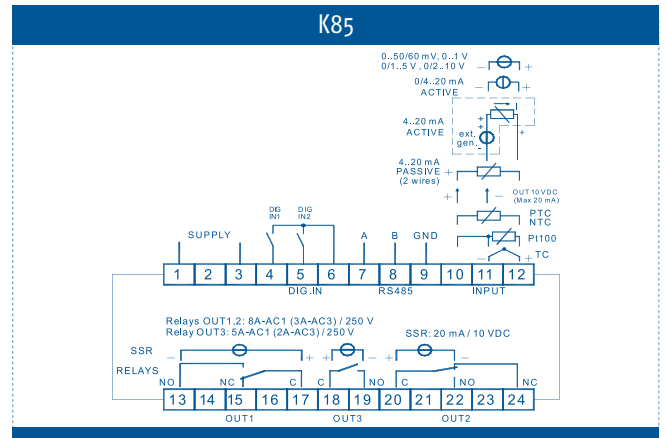
DISPLAY	
Single	K85 4 red digit, h 12 mm + 3 LEDs Bargraph
INPUTS	
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200... 850°C / -328... 1562°F) Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 3	OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	4 DIN rail module, 70 x 84 mm - depth 60 mm / 230 g approx.
Mounting	On OMEGA DIN A rail
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>
Front protection degree	IP 40
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

# HOW TO ORDER

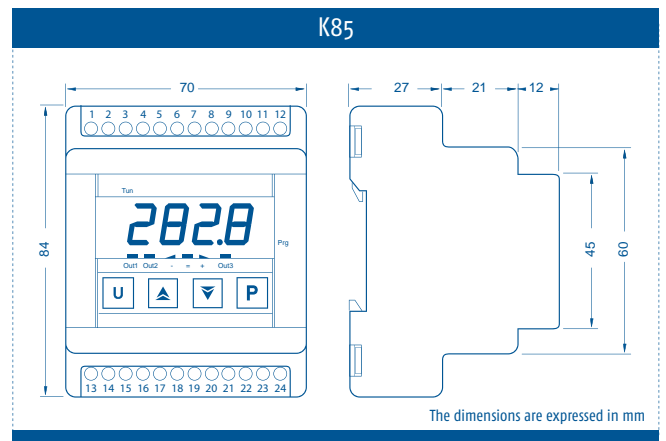
To compose the part number, pls. choose one of the option for each variable

K85	CODE
<b>VERSION</b>	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3/ DIGITAL INPUTS</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL ModBus	-
<b>DIGITAL INPUT</b>	
2 digital inputs	D
Not available	-

# CONNECTIONS



# DIMENSIONS



# TLZ35

- THERMOSTAT
- 1 INPUT AND UP TO 2 OUTPUTS



## FEATURES

TLZ35	
<b>DISPLAY</b>	
Single	4 red digit, o blu, h 12 mm
<b>INPUT</b>	
One	Termistori PTC KTY 81-121 (990Ω a 25°C) -50... +150°C (-58... +302°F) oppure Termistori NTC 103AT-2 (10kΩ a 25°C) -50... +109°C (-58... +228°F)
Digital input	1 digital input for free voltage contacts
Accuracy	± 0.5 % fs
<b>OUTPUTS</b>	
Up to 2	OUT 1: Relay SPST-NO 16A -AC1(6A-AC3)/250 Vac or SPDT 16A- AC1(6A-AC3)/250 Vac OUT2: Relay SPDT 8A-AC1 (3A-AC3)/ 250 Vac
Relay operations	100000 operations for relay SPST-NO 16A and SPDT 8A - 50000 operations for relay SPDT 16A
<b>FUNCTIONAL</b>	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	At intervals time by stopping compressor
<b>GENERAL</b>	
Power supply	12, 24 Vac/Vdc, 100... 240 Vac ± 10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	4 DIN rail modules - 70 x 84 x 60 mm / 150 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	On OMEGA DIN A rail
Front protection degree	IP40, for internal use
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

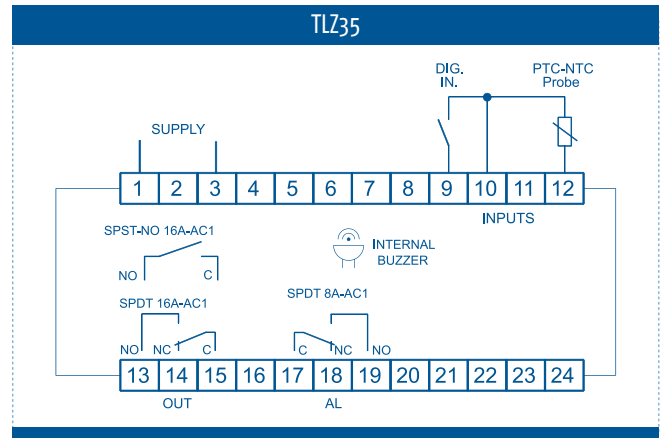


# HOW TO ORDER

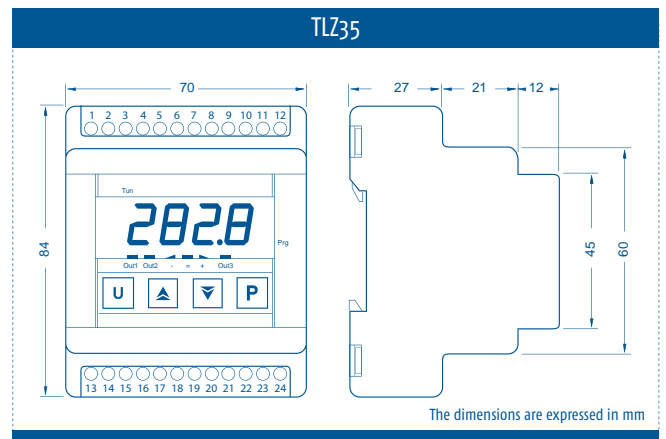
To compose the part number, pls. choose one of the option for each variable

TLZ35	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
<b>OUT 2</b>	
Relay	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES



# THERMOSTATS – ANALOGUE CONTROLLERS



**Simple, reliable and cost effective !**

Digital thermostats in different sizes for every application and analog controllers in the 1/16 DIN - 48 x 48 mm case.

## THERMOSTATS – ANALOGUE CONTROLLERS

FEATURES		Z31A	TLZ10
Dimensions (mm)	78 X 35	•	•
	68 X 35		
	48 X 48		
	75 X 122		
	70 X 84 4 DIN rail module		
Single display	•	•	
Digit	3	4	
"Sensitive Touch" keyboard	•		
Input	PTC-NTC	•	•
	J-K		
	Pt100		
	Digital		
Relay or voltage for SSR drive outputs	1	1	
Power supply	12 Vac/Vdc	•	•
	12... 24 Vac/Vdc	•	
	24 Vac/Vdc		•
	115 Vac		
	230 Vac		
	24... 240 Vac		
Control	100... 240 Vac	•	•
	ON/OFF	•	•
	PD		
CE certification	•	•	
UL approval	•	•	
ENEC approval (with "Sensitive Touch" keyboard only)	•		

	TLZ11	TLZ35	E51A	W09	TCPDE
	•				
			•		
					•
				•	
	•	•	•	•	
	4	4	3	3	
	•	•	•	•	
					•
					•
	•	•			
	2	2	1	1	1
	•	•	•		
	•	•			
			•		
			•		
	•	•		•	•
	•	•	•	•	•
	•	•	•	•	•
	•	•		•	•
	•	•			

INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# Z31A

- THERMOSTAT 1 INPUT AND 1 OUTPUT
- “SENSITIVE TOUCH” KEYBOARD



## FEATURES

Z31A	
<b>DISPLAY</b>	
Single	3 red or blue digit, h 15.5 mm
<b>INPUTS</b>	
One	PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
<b>OUTPUTS</b>	
One	OUT 1: Relay SPDT or SPST-NO (16A - 1HP 250V, 1/2HP 125 Vac); EN 61810: 16 (9) A - EN 60730: 10 (4) A UL 60730: 12 A Res., 30 LRA, 5 FLA 12 A max. for plug-in version
Relay electrical life	100000 operations for SPST-NO 16A and SPDT 8A relays 50000 operations for SPDT 16A relay
<b>FUNCTIONAL</b>	
Control	ON/OFF
Acoustic alarm	Internal Buzzer (optional)
<b>GENERAL</b>	
Power supply	12 Vac/Vdc, 12...24 Vac/Vdc, 100...240 Vac ±10% (50/60 Hz)
Power consumption	4 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals / 120 g approx.
Keyboard	Mechanical or “Sensitive Touch”
Connections	Screw terminal block 2.5 mm <sup>2</sup> or plu-in connector with screw terminals 2.5 mm <sup>2</sup>
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN61000-4-6: 3V), 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9). Regulation 37/2005/CE (EN13485 air, S, A, 2, - 50°C +90°C wheter used with NTC 103AT11 probe).

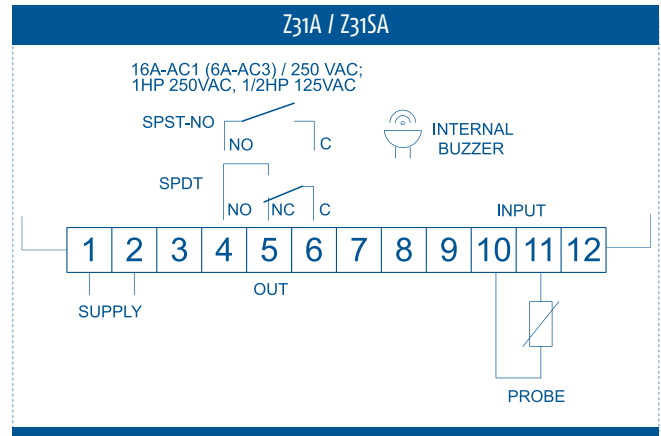
## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

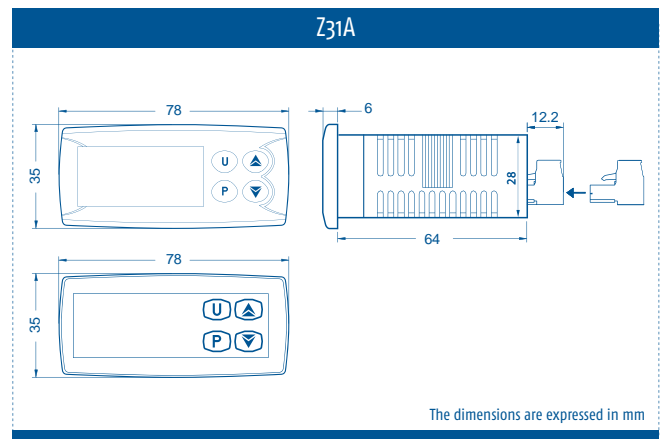
Z31A	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



# TLZ35

- THERMOSTAT
- 1 INPUT AND UP TO 2 OUTPUTS



## FEATURES

DISPLAY	
Single	TLZ35 4 red digit, 0 blu, h 12 mm
INPUT	
One	Thermistors PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or Thermistors NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Digital input	1 digital input for free voltage contacts
Accuracy	± 0.5 % fs
OUTPUTS	
Up to 2	OUT 1: Relay SPST-NO 16A -AC1(6A-AC3)/250 Vac or SPDT 16A- AC1(6A-AC3)/250 Vac OUT 2: Relay SPDT 8A-AC1 (3A-AC3)/ 250 Vac
Relay electrical life	100000 operations for relay SPST-NO 16A and SPDT 8A - 50000 operations for relay SPDT 16A
FUNCTIONAL	
Regolazione	ON/OFF
Allarme acustico	Internal buzzer (optional)
Controllo sbrinamento	At intervals time by stopping compressor
GENERAL	
Power supply	12, 24 Vac/Vdc, 100... 240 Vac ± 10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	4 DIN rail modules - 70 x 84 x 60 mm / 150 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	On OMEGA DIN A rail
Front protection degree	IP40, for internal use
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

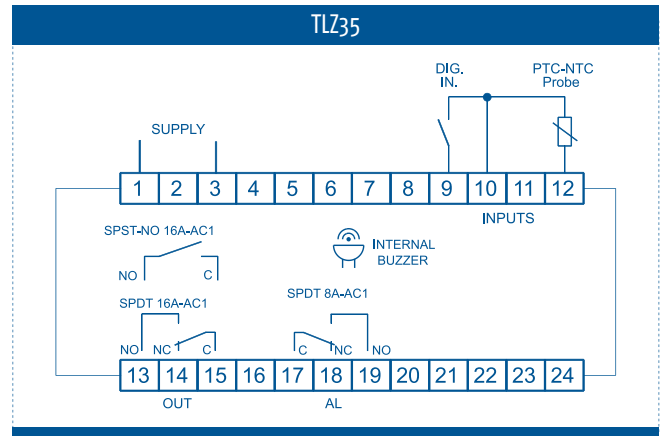


## HOW TO ORDER

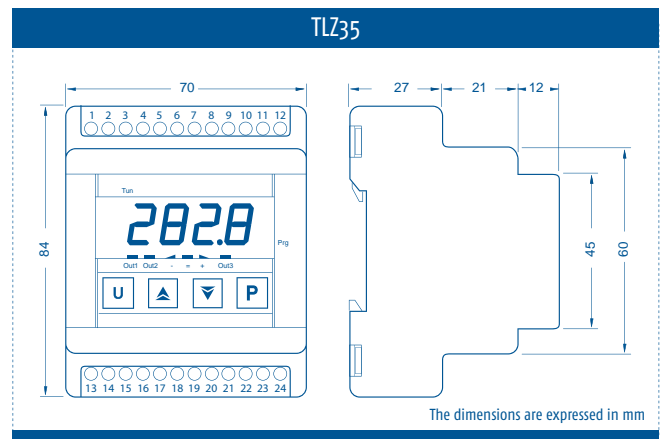
To compose the part number, pls. choose one of the option for each variable

TLZ35	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
<b>OUT 2</b>	
Relay	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-

## CONNECTIONS



## DIMENSIONS



# E51A

- THERMOSTAT
- 1 INPUT AND 1 OUTPUT
- SMALL DIMENSIONS



## FEATURES

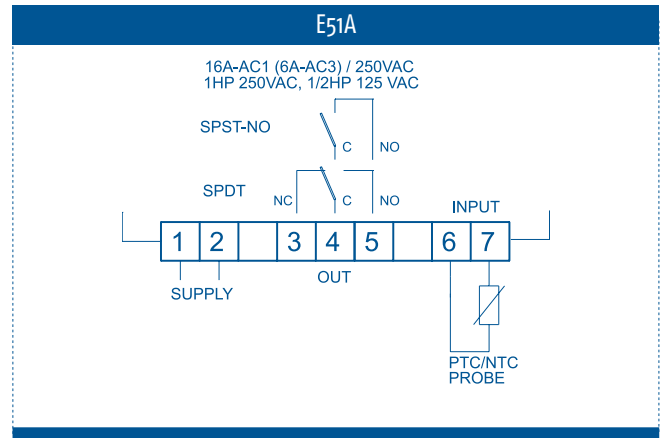
E51A	
<b>DISPLAY</b>	
Display	3 red or blue digit, h 14 mm
<b>INPUT</b>	
One	PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
<b>OUTPUT</b>	
One	OUT 1: Relay SPDT or SPST-NO (16A-AC1, 6A-AC3 250 Vac, 1 HP 250 Vac, 1/2HP 125 Vac); 12 A max. for plug-in version
Relay electrical life	100000 operations for relay SPST-NO 16A and SPDT 8A, 50000 operations for relay SPDT 16A
<b>FUNCTIONAL</b>	
Control	ON/OFF
<b>GENERAL</b>	
Power supply	12 Vac/Vdc, 115, 230 Vac ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	68 x 35 mm – depth 50 mm / 105 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	Flush in panel in 58 x 25 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN61000-4-6: 3V), 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9)

## HOW TO ORDER

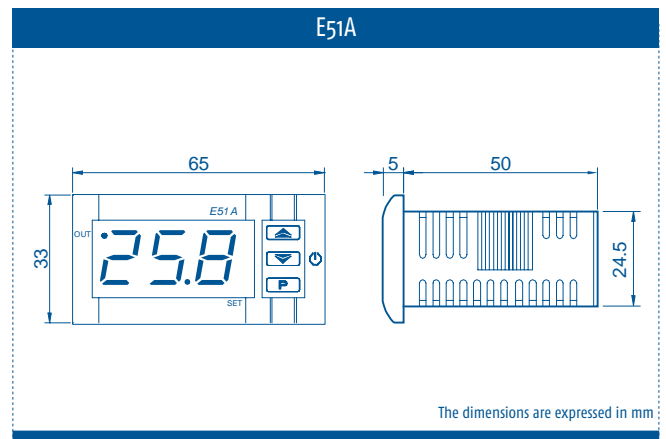
To compose the part number, pls. choose one of the option for each variable

E51A	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
115 Vac	C
230 Vac	D
<b>INPUT</b>	
PTC	P
NTC	N
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST-NO-16A-AC1	R

## CONNECTIONS



## DIMENSIONS



# W09

- THERMOSTAT 1 INPUT AND 1 OUTPUT
- WALL MOUNTING



## FEATURES

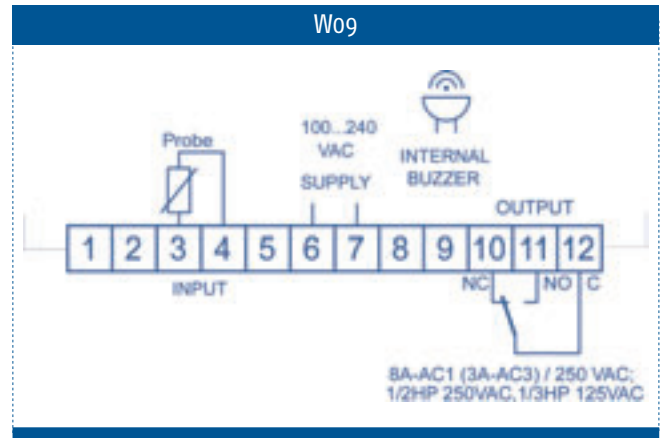
<b>DISPLAY</b>	W09
Single	3 red or blue digit, h 15,5 mm
<b>INPUTS</b>	
One	Thermistors PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or Thermistors NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
<b>OUTPUTS</b>	
One	OUT1: Relay SPDT 8A, 1/2HP 250V, 1/3 HP 125 Vac - EN 61810: 8 (3) A - EN 60730: 8 (4) A - UL 60730: 10A Res., 12 LRA, 2 FLA
<b>FUNCTIONAL</b>	
Control	ON/OFF
Defrosting control	At intervals time by stopping compressor
Acoustic alarm	Internal Buzzer (optional)
<b>GENERAL</b>	
Power supply	100...240 Vac ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	75 x 122 mm - depth 34 mm / 120 g approx.
Connections	Screw terminal block for cables 0.2...1.5 mm <sup>2</sup> / AWG 24...16
Mounting	On wall. Cables outlet: on the back side or lateral side by PG9 cable gland
Front protection degree	IP40
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply and relay outputs, 1KV inputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN61000-4-6: 3V); Directive 2006/95/CE (EN 60730-1, EN 60730-2-9). Regulation 37/2005/CE (EN13485 air, S, A, 2, - 50°C +90°C wheter used with NTC 103AT11 probe). Regulation 37/2005/CE (EN13485 air, S, A, 2, - 50°C +90°C wheter used with NTC 103AT11 probe).

## HOW TO ORDER

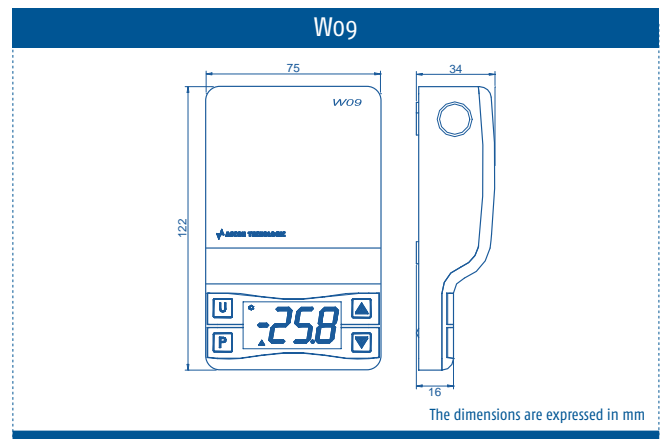
To compose the part number, pls. choose one of the option for each variable

W09	CODE
<b>POWER SUPPLY</b>	
100... 240Vac	H
<b>OUT 1</b>	
Relay SPDT-8A-AC1	R
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTION</b>	
Screw type	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# TCPDE M

- ANALOGUE CONTROLLER
- ON/OFF AND PD CONTROL
- RANGES FROM 100 TO 1200°C



## FEATURES

INPUTS		TCPDE M
2 different configurations		Thermocouples J, K Thermoresistances Pt 100 IEC
Accuracy		±5% f.s.
OUTPUT		
One		OUT1: Relay 8A-AC1 (3A-AC3)/250Vac or 20 mA/12 Vdc to drive SSR
FUNCTIONAL		
Control		ON/OFF, PD Ranges available from 100 to 1200°C:
		0... 100°C (Pt100 only)
		0... 200°C
		0... 250°C
		0... 350°C
		0... 600°C
		0... 1000°C
		0... 1100°C
		0... 1200°C
GENERAL		
Power supply		24... 240 Vac ±10% (50/60 Hz)
Power consumption		3 VA approx.
Dimensions / Weight		48 x 48 mm (1/16 DIN) - depth 89 mm / 200 g approx.
Connections		Faston 6.3 mm terminals or Octal socket
Mounting		Flush in panel in 45.5 x 45.5 mm hole
Front protection degree		IP 54, mounted on panel with gasket
Operating / storage temperature		0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity		30... 95 RH% without condensation
Conformity		Directive EMC 2004/108/CE (EN 61326), Directive BT 2006/95/CE (EN 61010-1)

# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TCPDE M	CODE
<b>RANGES</b>	
0... 100°C (PT100 only)	1
0... 200°C	2
0... 350°C	3
0... 600°C	4
0... 1000°C	6
0... 1200°C	7
0... 250°C	8
0... 1100°C	9
<b>POWER SUPPLY</b>	
24... 240 Vac	U
<b>INPUT</b>	
J	J
K	K
PT100	P
<b>OUTPUT</b>	
Relay	R
0... 12 V for SSR driving	T
<b>WIRING DIAGRAM</b>	
Thermocouples	31
Thermoresistances (*)	32
Thermocouples	33
Thermocouples	34
Thermocouples	35
<b>CONNECTIONS</b>	
Faston	F
Octal	0
<b>CONTROL</b>	
ON/OFF	0
PD	P

(\*) max. range for PT100 input: 350°C

# CONNECTIONS

**TCPDE M - TC INPUT**

**TCPDE M - PT100 INPUT**

SSR: 12 VDC; 20 mA

# DIMENSIONS

**TCPDE M**

The dimensions are expressed in mm

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES





# SPECIAL CONTROLLERS AND "CUSTOM"



## The only limit is your imagination...

Our production program includes many models that can be used in specific applications such as controllers for Peltier cells, differential controllers, controllers dedicated to the bakery sector and also "custom" products to meet specific customer requirements.

## SPECIAL CONTROLLERS AND "CUSTOM"

FEATURES		TC030	TLK33
Dimensions (mm)	78 x 35		•
	72 x 144	•	
Single display			•
Triple display		•	
Digit		3+3+4	4
Inputs	J-K	•	
	TC J,K,S, IR + PT100		•
	TC J,K,S, IR + PTC, NTC		•
	0/4... 20mA 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V		•
Relay outputs		7	
Voltage output 12... 24 Vdc and Vdc for SSR driving (10mA/Vdc)			2
Power supply	230 Vac	•	
	12... 24 Vdc		•
	ON/OFF	•	
Control	Peltier cells: PID double action, Autotuning FAST, Selftuning, Fuzzy overshoot control		•
RS485		•	•
8 programs		•	
CE certification		•	•



# TC030

- CONTROLLER FOR COOKING OVENS
- UP TO 8 PROGRAMS
- UP TO 4 INPUTS FOR TOP, FLOOR STEAMER AND AUXILIARY PROBE



## FEATURES

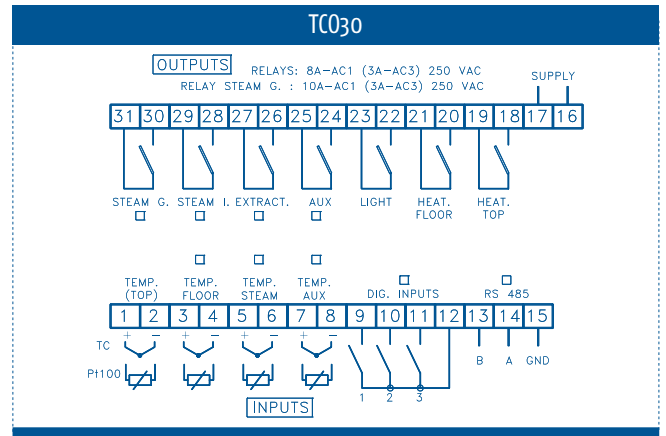
TC030	
<b>DISPLAY</b>	
Triple	2 temperature indications: 3 red digit, h 14 mm 1 time indication: 4 red digit, h 7 mm
<b>INPUTS</b>	
Up to 4: Top, Floor, Steamer and auxiliary probe	Thermocouples: J/K (-50 ... +999 °C/-58 ...+999 °F)
Digital inputs	3, for free voltage contacts
<b>OUTPUTS</b>	
Up to 7	OUT STEAM: 1 Relay SPST-NO (16 A-AC1, 6 A-AC3 / 250 Vac) Other OUTS: Relay SPST-NO (8 A-AC1, 3 A-AC3 / 250 Vac)
<b>FUNCTIONAL</b>	
Control	ON/OFF
Programs	8 cooking programs
Internal clock lifetime memory without power supply	Approx. 7 years by means of internal battery
Serial communication	RS485 isolated, ModBus RTU
Baud rate	2400... 38400 baud
<b>GENERAL</b>	
Power supply	230 Vac ± 10% (50/60 Hz)
Power consumption	9 VA approx.
Dimensions / Weight	72 x 144 mm, depth 77 mm / 600 g approx.
Mounting	Flush in panel in 68 x 139 mm hole
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Operating / storage temperature	0... 50°C (32... 122°F)/-20... +70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation

## HOW TO ORDER

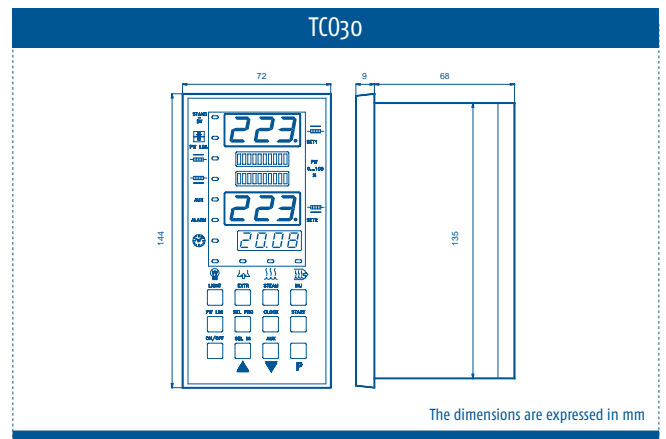
To compose the part number, pls. choose one of the option for each variable

TC030	CODE
<b>INPUT</b>	
J-K	C
<b>POWER SUPPLY</b>	
230 Vac	D
<b>AUXILIARY PROBE INPUT</b>	
Available	A
<b>AUXILIARY OUTPUT</b>	
Relay	R
<b>STEAM PROBE INPUT</b>	
Available	V
<b>SERIAL COMMUNICATION</b>	
RS485	S
<b>3 DIGITAL INPUTS</b>	
Available	I

## CONNECTIONS



## DIMENSIONS



## PELTIER CELLS CONTROLLER

- PID CONTROL
- UP TO 2 OUTPUTS
- RS485



### FEATURES

<b>DISPLAY</b>	<b>TLK33</b>
Single	4 red digit, h 12 mm
<b>INPUTS</b>	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200... 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts
Accuracy	± 0,5% span ±1 digit, Tc S : ±1% span ±1 digit
<b>OUTPUTS</b>	
Up to 2, in voltage to direct drive Peltier cells	12... 24 Vdc (equal to power supply) to direct drive Peltier cells max. 7A; up to 2 alarm outputs in voltage for SSR driving (10mA/ 10Vdc)
Auxiliary supply	12 Vdc / 20 mA max.
<b>FUNCTIONAL</b>	
Control	PID dual action, Autotuning FAST, Selftuning algorithms, Fuzzy overshoot control
Set Point	4 Set Points programmable
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200... 38400 baud, programmable
<b>GENERAL</b>	
Power supply	12... 24 Vdc ±10%
Power consumption	4 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75,5 mm / 130 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

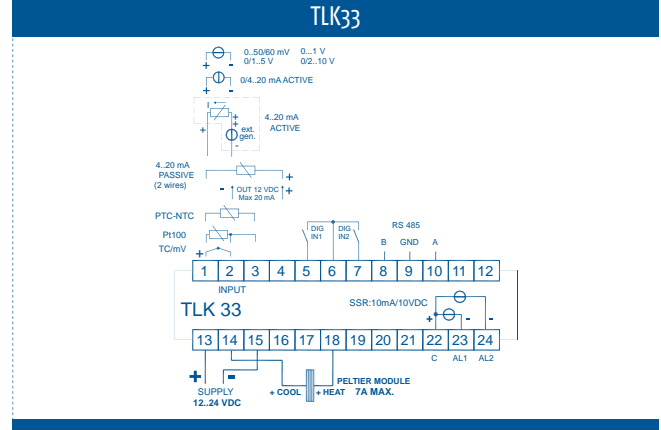
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

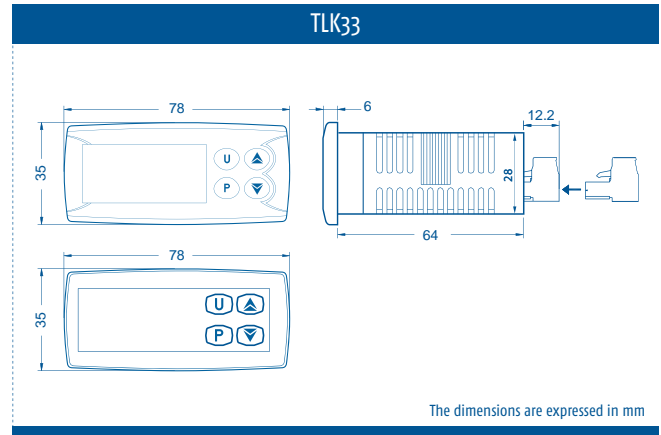
TLK33	CODE
<b>POWER SUPPLY</b>	
12... 24 Vdc	G
<b>INPUT</b>	
PT100 + TC (I,K,S,IRS), mV	D
PTC,NTC,mV + TC (I,K,S,IRS)	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
<b>CONTROL OUTPUTS ( 2 FOR SSR )</b>	
12... 24 Vdc for Peltier cells (7A max)	0
<b>OUT AL1</b>	
Vdc for SSR driving	0
Not available	-
<b>OUT AL2</b>	
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485 + 2 digital inputs	S
Not available	-
<b>DIGITAL INPUT</b>	
Available	I
Not available	-

TLK33 : When the RS485 is required, 2 digital inputs are always on board too.

# CONNECTIONS



# DIMENSIONS



The dimensions are expressed in mm





# PAC SYSTEMS



## The right solution for every application!

New generation of programmable controllers (PAC – Programmable Automation Controller). They manage the control, the monitoring and permit the remote control of machines and small industrial plants.

Two hardware solutions are available: one modular and distributed (SigmaPAC) and one compact (MicroPAC).

# PAC SYSTEMS

FEATURES		M81
Dimensions (mm)	10 moduli DIN (175 x 110 mm)	•
	8 moduli DIN (152 x 110 mm)	
Inputs (16 bit)	Ingresso universale	
	NTC-PT1000	8
	0/4... 20 mA, 0/1... 5V, 0... 10V	4
	Digitali	12
	Potenziometro	
	Raziometrico (5V)	1
Relay or voltage outputs		10
Analogue outputs (current or voltage)		
Analogue outputs (voltage only)		4
Power supply	24 Vac/Vdc	•
	24 Vdc	
Control	ON/OFF, PID con Autotuning avanzato	•
	Controllo Attuatori motorizzati	•
Processor ARM 32 bit		•
16 MB RAM, 2MB program and 64 KB flash		•
USB port		•
Real Time Clock		•
Ethernet port (communication, programming, configuration)		•
RS485 port		•
RS232 port		1
Modbus RTU (Master/Slave) protocol, Modbus TCP Server, ASCII		•
Profibus DP		
Programming languages : IL, ST, FBD, LD, SFC, CFC		•
Advanced libraries dedicated to process control		•
CE certification		•
UL approval (listed)		

(\*) with expansion units - see hereunder models

Digital expansion units:

MPD10808 (8 inputs 24 Vdc + 8 outputs 24 Vdc, 0.5A)

MPD11616 (16 inputs 24 Vdc + 16 outputs 24 Vdc, 0.5A)

MPD20808 (8 inputs 24 Vdc + 8 relays outputs 2A)

MPD40808 (8 inputs 120 Vac + 8 relays outputs 2A)

	AC3	MP02	CU02
		•	•
	•		
	2	2	
	6+2	6+2	
	8 + 32 (*)	8 + 32 (*)	1
	2	2	
	8+32 (*)	8+32 (*)	2
	4	4	
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	1	•	•
	•	•	•
	•	1	2
	•	•	•
	•	•	•
	•	•	•
		•	•
		•	•
		•	•

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# M81 SIGMA2

- COMPACT PROGRAMMABLE CONTROLLER (MICROPAC)
- 8 + 4 A/I
- 12 D/I + 10 D/O
- 4 A/O



**FEATURES**

INPUTS	
	<b>M81</b>
12 Analogue	8x Thermistors NTC 103AT-2, Thermoresistances Pt1000 and 4x Linear signals 0/1... 5V, 0/2... 10V, 0/4... 20 mA, ratiometrics
	Resolution: 16 bit
	Accuracy: 0.5% of span
	Input impedance >100kΩ (V); 300Ω (mA)
	Insulation 2500V channels to power supply and channels to logic (High level analogue signals) Insulation 800 V between power supply and logic (Sensors)
12 Digital	12 digital inputs for free voltage contacts
	Insulation 800 V between power supply and logic Compliant to IEC/EN 61131-2 (type 1)
OUTPUTS	
4 Analogue	4x 0... 10 V
	Resolution 16 bit
	Accuracy: 0.5% of span
	Load >1kΩ
	Insulation 800 V between power supply and logic
10 Digital	10 relay digital outputs channels (2 relays SPDT-5A, 8 relays SPST-NO 2A)
	Insulation 2500V channels to power supply and channels to logic
FUNCTIONAL	
Processor	ARM 32 bit
Memory	16 MB of RAM system, application memory max. 2 MB internal + 3.5 MB on USB key 64 kB redundant FLASH memory
Programming languages	IL, ST, FBD, LD, SFC, CFC
Standard	IEC61131-3
Real time clock	on board
Minimum time of cycle execution	10ms
Serial ports	Ethernet + RS485 + RS232/485
Protocols	Modbus RTU (Master/Slave), Modbus TCP Server, ASCII
GENERAL	
Power supply	24 Vac/Vdc (-15... +25%) (50/60 Hz)
Power consumption	13 VA (+6.5 VA with I/O modules)
Dimensions / Weight	175 x 110 mm, depth 60 mm / 450 g approx.
Mounting	On OMEGA DIN A rail
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F) / -40... +70°C (-40... 158°F)
Operating humidity	5... 95 RH% without condensation

## HOW TO ORDER

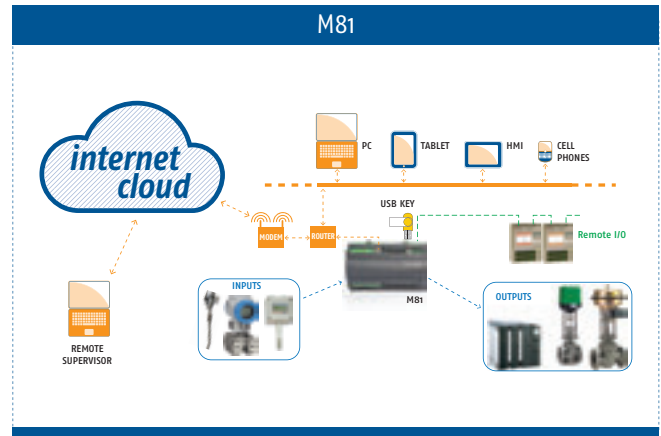
To compose the part number, pls. choose one of the option for each variable

M81	CODE
<b>ANALOGUE INPUTS</b>	
0/4... 20mA	-
0/5 Volt, ratiometrics	5
<b>OUT 1</b>	
Relay SPDT 5A	R
Vdc for SSR driving	0
SSR 2A 250 Vac	Q
<b>OUT 2</b>	
Relay SPDT 5A	R
Vdc for SSR driving	0
SSR 2A 250 Vac	Q
<b>OUT 7...10</b>	
Relay SPST 2A	R
Not available	-
<b>ANALOGUE OUTPUTS 1...4</b>	
0... 10V	V
Not available	-
<b>USB PORT</b>	
Available	U
Not available	-
<b>COMMUNICATION PORTS</b>	
COM 1 RS485/232	1
COM1 RS485/232 + COM2 RS485	2
<b>RESERVED PART NO.</b>	
-	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
<b>CASE</b>	
Grey colour	-
White colour	W

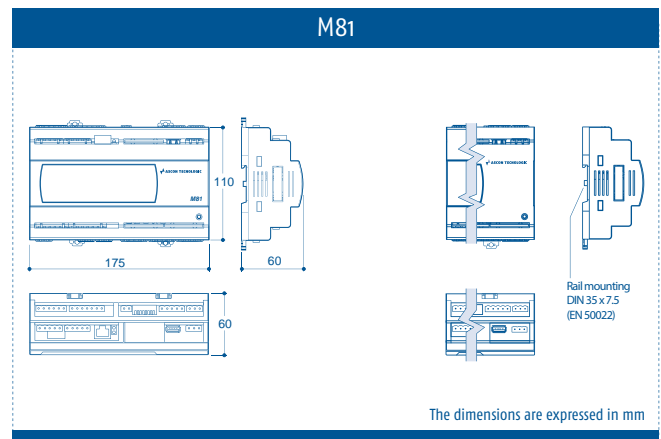
## ACCESSORIES

<b>CABLES</b>	
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
<b>POWER ADAPTORS</b>	
APS2 ALNDR75-24	POWER ADAPTOR 3,2 A
APS2 ALEDR12024	POWER ADAPTOR 5 A

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# AC3

- MULTIFUNCTION PROGRAMMABLE CONTROL SYSTEM
- MULTI LOOP
- PRE-PROGRAMMED HMI



## FEATURES

INPUTS	
<b>AC3</b>	
6 Analogue	6 programmable, 0...10V, 0/1...5V, 0...1V, 0/4...20mA 2 programmable, ±10V, ±5V, ±1V, 0/4...20mA Resolution: 16 bit - Accuracy: 0.1% of span - Input impedance >100k (V); 300 (mA) Isolamento: 800 V rispetto alimentazione e logica
2 Analogue, universal	2 configurabili: ±15mV, ± 35mV, ±50mV, ±100mV, ±300mV, ±1.25 V ad alta impedenza, TC (L, J, T, K, S, R, N), Pt100, Pt1000 e potenziometro (0.1... 10kΩ) Risoluzione: 16 bit - Accuratezza: 0.1% dello span - Impedenza di ingresso >10MΩ (V) Insulation 800 V between power supply and logic 40 Vpp between two channels (differential inputs)
8+32 Digital	8 + 32 (with expansion units) 24 VDC (ON: 5...30V, OFF: 0..3V) or 8 + 8/16 max.at 120 VAC Max. input frequency 80 Hz for counter input Sink type Reverse polarity protection, overvoltage Insulation 800 V between power supply and logic
OUTPUTS	
0/2/4 Analogue	0/2/4 programmable (option) ±10 V (±25 mA max.), 0/4... 20 mA Resolution 13 bit Accuracy: 0.1% of span Insulation 800 V between power supply and logic
8+32 Digital	8 + 32 (with expansion units) 24VDC, 0.5 A or 8 + 8/16 relays (2A, 240 VAC, NA) Source type (PNP) Overvoltage and short circuit protection Insulation 800V channels - power supply
HMI: Po4	
Processor	ARM 9 at 32 bit
LCD	TFT resistive type, 4.3", 16/9, back lighted LED
Resolution	480 x 272
Colours	262.000
Interfaces	Ethernet 10/100-T, USB 2.0
FUNCTIONAL	
Processore	ARM 32 bit
Memory	16 MB of RAM system, application memory max. 2 MB internal 64 kB redundant FLASH memory
Programming languages	IL, ST, FBD, LD, SFC, CFC
Standard	IEC61131-3
Real time clock	on board
Minimum time of cycle execution	≥5ms (10ms typical)
Serial ports	Ethernet + RS485 + RS232/485
Protocols	Modbus RTU (Master/Slave), Modbus TCP Server, ASCII
GENERAL	
Power supply	24 VDC (-15... +25%) / 50/60 Hz
Power consumption	13 VA (+3.5 VA with both expansion units) + 10 VA (for Po4)
Dimensions / Weight	MP02: 152 x 110 mm, depth 66 mm / 460 g approx. Po4: 83 x 159 mm, depth 28 mm / 200 g approx.
Mounting	MP02: OMEGA DIN rail - Po4: flush in panel 68 x 127 (panel only) or 68 x 138 (with adapter)
Front protection degree	MP02: IP20 - Po4: IP65
Operating / storage temperature	0... 50°C (32... 122°F) / -40...+70°C (-40... 158°F)
Operating humidity	5... 95 RH% without condensation

Notes: The basic module can be extended by 1 or 2 expansion modules connected directly to the CPU.  
To obtain more expansions it's possible to connect I/O modules both analog and digital to an RS485 port.

Digital Signal expansion units:

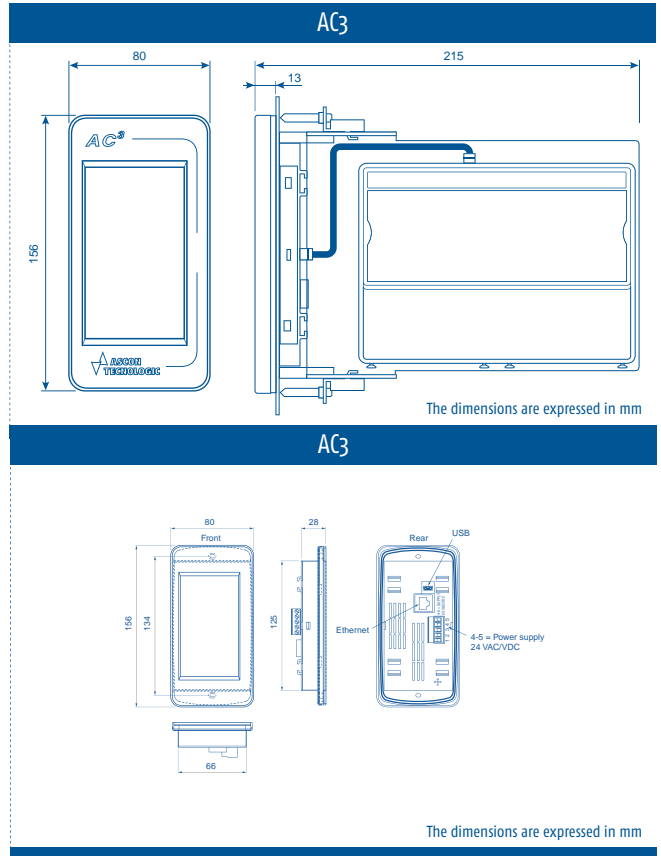
- MPD10808 (8 inputs 24 VDC + 8 outputs 24 VDC, 0.5A)
- MPD1616 (16 inputs 24 VDC + 16 outputs 24 VDC, 0.5A)
- MPD20808 (8 inputs 24 VDC + 8 outputs 2A relay)
- MPD40808 (8 inputs 120 VAC+ 8 outputs 2A relay)

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

HARDWARE MODULE	CODE
With hardware module MPO2	AC3 MP2
Without hardware module	AC3 ---
<b>ANALOG INPUTS</b>	
6 ch - 0/4... 20mA, Volt	0
8 ch - 0/4... 20mA, Volt	1
6 ch - 0/4... 20mA, Volt + 2 Universal channels	2
<b>ANALOG OUTPUTS</b>	
Not available	-
2 outputs 0/4... 20mA, Volt	1
4 outputs 0/4... 20mA, Volt	2
<b>EXPANSION UNIT 1</b>	
Not available	-
8 DI (24 VDC) + 8 DO (24 VDC)	1
8 DI (24 VDC) + 8 relay outputs	2
16 DI (24 VDC) + 16 DO (24 VDC)	3
8 inputs (120 VAC) + 8 relay outputs	4
<b>EXPANSION UNIT 2</b>	
Not available	-
8 DI (24 VDC) + 8 DO (24 VDC)	1
8 DI (24 VDC) + 8 relay outputs	2
16 DI (24 VDC) + 16 DO (24 VDC)	3
8 inputs (120 VAC) + 8 relay outputs	4
<b>OPERATOR PANEL MODULE</b>	
Not available	--
Operator panel <b>PO4</b> with adapter	P4
Adapter	PA
<b>USB PORT</b>	
Not available	-
USB port	U
<b>CABLES AND ACCESSORIES</b>	
Not available	--
Short plate + cable 0.15 m	P1
Long plate + cable 0.15 m	P2
Cable 0.15 m	C0
Cable 1 m	C1
Cable 2 m	C2
Cable 5 m	C5
<b>HW/SW CUSTOMIZATION</b>	
Not available	----
Ascon Technologic customization	ATA3
<b>SW VERSION</b>	
Not available	-
Release 0	0

## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# MP02 SIGMA2

• COMPACT PROGRAMMABLE CONTROLLER (MICROPAC) + ON BOARD I/O AND EXPANSION CAPABILITY

- 8 A/I + 8 D/I
- 4 A/O + 8 D/O



## FEATURES

INPUTS	
6 analogue	MP02 6x 0...10V, 0/1...5V, 0...1V - 0/4...20mA Resolution: 16 bit Accuracy: 0.1% of span Input impedance >100kΩ (V); 300Ω (mA) Insulation 800 V between power supply and logic
	±15 mV, ± 35mV, ±50 mV, ±100 mV, ±300 mV, ±1.25 V, TC (L, J, T, K, S, R, N), Pt100, Pt1000 and potentiometer (0.1... 10kΩ) Resolution: 16 bit Accuracy: 0.1% of span Input impedance >10 MΩ (V) Insulation 800 V between power supply and logic 40 Vpp between the channels (differential inputs)
	8 + 32 (with expansion units) 24 Vdc (ON: 5...30V, OFF: 0..3V) or 8 + 8/16 max. 120 Vac Counter input 80 Hz max. frequency Sink type Protection: Reverse polarity and overvoltage Insulation 800 V between power supply and logic
2 universal analogue	
8+32 digital	
OUTPUTS	
0/2/4 analogue	±10 V (±25 mA max.), 0/4... 20 mA Resolution: 13 bit Accuracy: 0.1% of span Insulation 800 V between power supply and logic
	8 + 32 (with expansion units) 24Vdc, 0.5 A or 8 + 8/16 relays (2A, 240 Vac, NA) Source type (PNP) Protection: Reverse polarity and short circuit Insulation 800V between channels and power supply
8+32 Digital	
FUNCTIONAL	
Processor	ARM 32 bit
Memory	16 MB of RAM system, application memory max. 2 MB internal, 64 kB redundant FLASH memory
Programming languages	IL, ST, FBD, LD, SFC, CFC
Standard	IEC61131-3
Real time clock	on board
Execution cycle Minimum time	≥5ms (10ms typical)
Serial ports	Ethernet + RS485 + RS232/485
Protocols	Modbus RTU (Master/Slave), Modbus TCP Server, ASCII
GENERAL	
Power supply	24 Vdc (-15... +25%) / 50/60 Hz
Power consumption	13 VA (+3.5 VA with both expansion units)
Dimensions / Weight	152 x 110 mm, depth 66 mm / 460 g approx.
Mounting	On OMEGA DIN A rail
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F) / -40... +70°C (-40... 158°F)
Operating humidity	5... 95 RH% without condensation

Note: MP02 unit can be expanded up to 2 I/O modules through the side connector and via one of the RS485 ports by using the Modbus I/O modules.

Digital expansion units:

- MPD10808 (8 inputs 24 Vdc + 8 outputs 24 Vdc, 0.5A)
- MPD11616 (16 inputs 24 Vdc + 16 outputs 24 Vdc, 0.5A)
- MPD20808 (8inputs 24 Vdc + 8 relays outputs 2A)
- MPD40808 (8 inputs 120 Vac + 8 relays outputs 2A)



## HOW TO ORDER

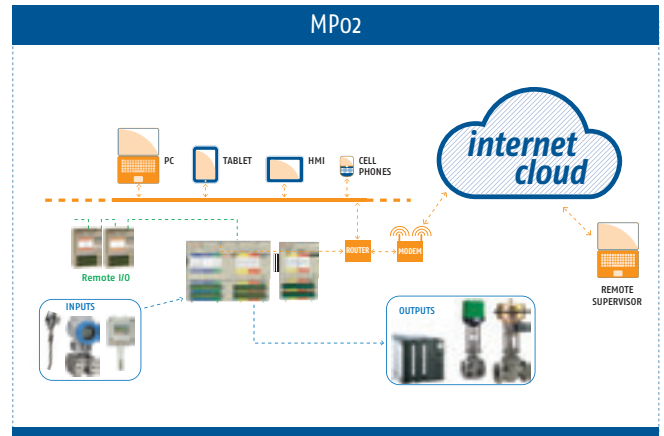
To compose the part number, pls. choose one of the option for each variable

MPo2	CODE
<b>ANALOGUE INPUTS</b>	
6 ch - 0/4... 20mA, Volt	0
8 ch - 0/4... 20mA, Volt	1
6 ch - 0/4... 20mA, Volt + Universal channels	2
<b>RESERVED PART NO.</b>	
-	-
<b>RESERVED PART NO.</b>	
-	-
<b>RESERVED PART NO.</b>	
-	-
<b>ANALOGUE OUTPUTS 1...4</b>	
Not available	-
2 ch. - 0/4... 20mA, Volt	1
4 ch. - 0/4... 20mA, Volt	2
<b>USB PORT</b>	
Not available	-
<b>COMMUNICATION PORTS</b>	
COM1 RS485/232 + COM2 RS485	2
<b>RESERVED PART NO.</b>	
-	-
<b>CONNECTIONS</b>	
Clamp type	M
<b>PACKAGING</b>	
Standard Ascon Tecnologic	-
Neutral	A
<b>INSTRUCTION MANUAL</b>	
Enghish	E

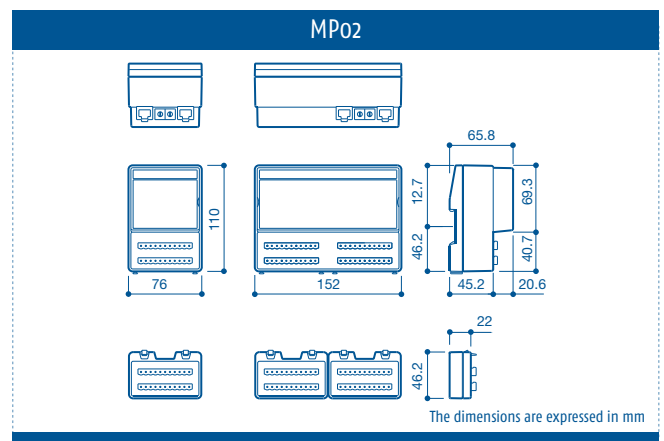
## ACCESSORIES

<b>CABLES</b>	
APS2 CABLECUCONF	RS232 CABLE 2M, CONFIG. CU, PC-DB9F/CU-RJ45
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
<b>POWER ADAPTORS</b>	
APS2 ALNDR75-24	POWER ADAPTOR 3.2 A
APS2 ALEDR12024	POWER ADAPTOR 5 A
<b>FILTERS</b>	
APS2 FILTRI	FERRITES + FILTERS
<b>PLUGS</b>	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 14 POLE SCREW TERMINALS
APS2 SPINAM14	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV14	PLUG WITH 14 POLE SCREW TERMINALS

## CONNECTIONS

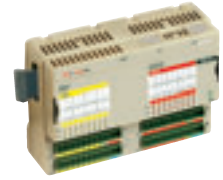


## DIMENSIONS



# MP-D 1/2/4

• EXPANSION UNITS  
FOR MICROPAC MP02



## FEATURES

INPUTS	MP-D1/08-08/Mo	MP-D2/08-08/Mo	MP-D4/08-08/Mo	MP-D1/16-16/Mo
Digital	8 inputs (24 Vdc)		8 inputs (120 Vac)	16 inputs (24 Vdc)
OUTPUTS				
Digital	8 outputs (24 Vdc, 0.5A)	8 relay outputs 2A, NO		16 outputs (24 Vdc, 0.5A)
GENERAL				
Power supply	24 Vdc (-15... +25%) (50/60 Hz)			
Power consumption	4 VA			
Dimensions / Weight	76 x 110 mm, depth 66 mm / 220 g			152 x 110 mm, depth 66 mm / 350 g
Mounting	On OMEGA DIN A rail			
Front protection degree	IP 20			
Connections	Terminal block with CLAMP connectors			
Operating / storage temperature	0... +50°C (32... +122°F) / -20...+85°C (-4... +185°F)			
Operating humidity	5... 95 RH% without condensation			

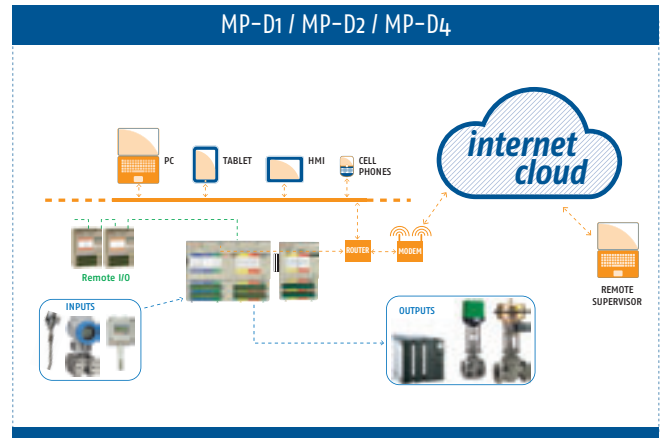
## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

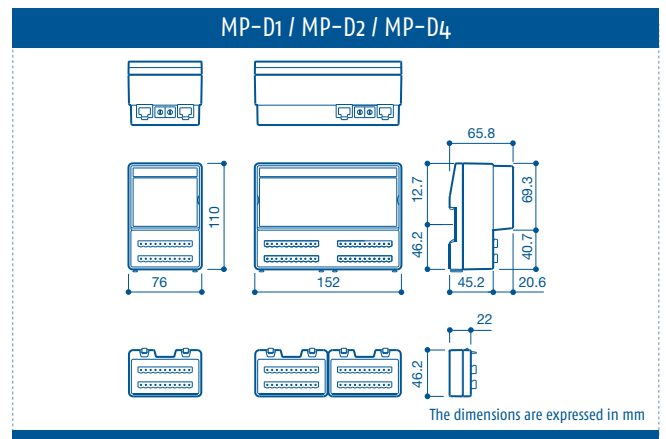
### EXPANSION UNITS - SIGMA2 MICROPAC

MP-D1/08-08/M0	8 digital inputs 24Vdc optoisolated + 8 digital outputs 24V 0.5V optoisolated
MP-D1/16-16/M0	16 digital inputs 24Vdc optoisolated + 16 digital outputs 24V 0.5V optoisolated
MP-D2/08-08/M0	8 digital inputs 24Vdc + 8 digital outputs 230Vac/2A relay SPST-NO
MP-D4/08-08/M0	8 digital inputs 120Vac + 8 digital outputs 230Vac/2A relay SPST-NO

## CONNECTIONS



## DIMENSIONS



# CU02 SIGMA2

- DISTRIBUTED PROGRAMMABLE CONTROLLER
- CANOPEN + ETHERNET
- 2XRS232 E 1XRS485
- 1 PROFIBUS DP SLAVE PORT



**FEATURES**

CONTROL UNIT - SIGMAPAC LINE - CU02	
<b>INPUT</b>	
Digital	one input 24Vdc NO contact
<b>OUTPUTS</b>	
Digital	1x relay 1A 120Vac/24Vdc resistive load for Watchdog and Wake Up functions
<b>FUNCTIONAL</b>	
Processor	ARM 32 bit
Memory	16 MB of RAM system, 128 kB redundant FLASH memory
Programming languages	IL, ST, FBD, LD, SFC, CFC
Standard	IEC61131-3
Real time clock	on board
Execution cycle Minimum time	≥5ms (10ms typical)
Serial ports	1xEthernet + 1XRS485 (CANOpen) + 1XRS232 + 1XRS232/USB + 1XRS485
Protocols	Modbus RTU (Master/Slave), Modbus TCP Server, CANOpen Master, Profibus DP, ASCII
<b>GENERAL</b>	
Power supply	24 Vdc (-15... +25%) (50/60 Hz)
Power consumption	6.5 VA
Dimensions / Weight	152 x 110 mm, depth 66 mm / 430 g circa
Mounting	On OMEGA DIN A rail
Front protection degree	IP 20
Operating / storage temperature	0... +55°C (32... +131°F) / -20...+85°C (-4... +185°F)
Operating humidity	5... 95 RH% without condensation

Note: SigmaPAC is a programmable distributed controller, modular and open. It is based on a CANOpen network to which are connected the I/O modules. I/O modules: See section "Acquisition and data recording".

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

CPU MODULE - SIGMA2	CODE
Model 01 - spare parts only	- 01
Model 02	- 02
SERIAL COMMUNICATION	
Not available	0
Profibus	2
RS232 + RS485	5
SERIAL COMMUNICATIONS	
RS232	0
USB	1
ETHERNET	
Available	1
INSTRUCTION MANUAL	
Italian / English	0
Not available	9
CUSTOMIZATION	
Standard	0
Customized	/ABA

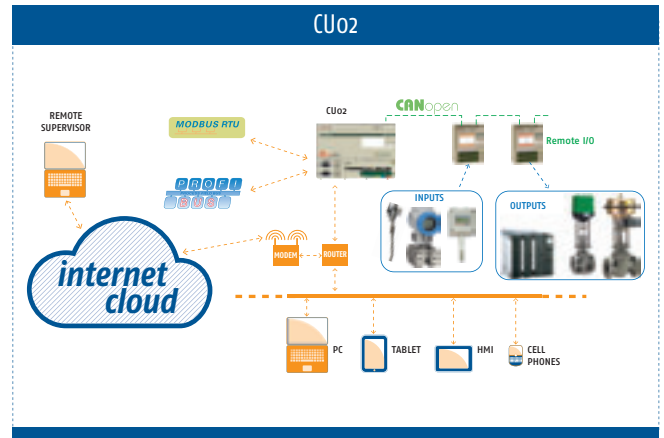
### AVAILABLE MODELS

CU-02 5010	Control unit with Ethernet port, RS232 and 2 additional serial comms. (232+485)
CU-02 2010	Control unit with Ethernet port, RS232 and Profibus DP slave

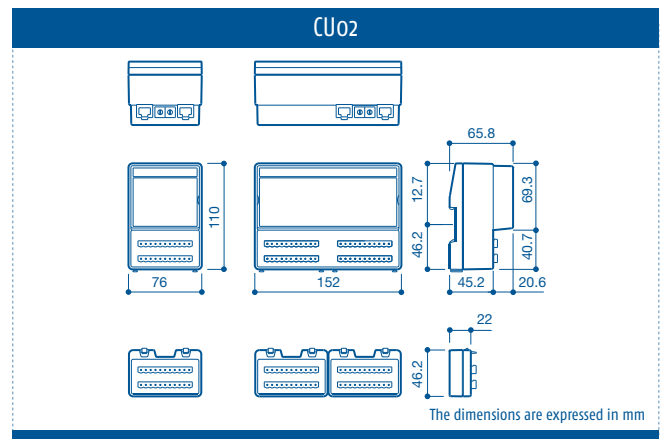
## ACCESSORIES

CABLES	
APS2 CABLECUCONF	RS232 CABLE 2M, CONFIG. CU, PC-DB9F/CU-RJ45
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
POWER ADAPTORS	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
PLUGS	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 14 POLE SCREW TERMINALS

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# OPENPCS

- PROGRAMMING SOFTWARE COMPLIANT TO STANDARD IEC 61131-3
- 6 PROGRAMMING LANGUAGES
- WIDE RANGE OF LIBRARIES TO SIMPLIFY THE PROGRAMMING



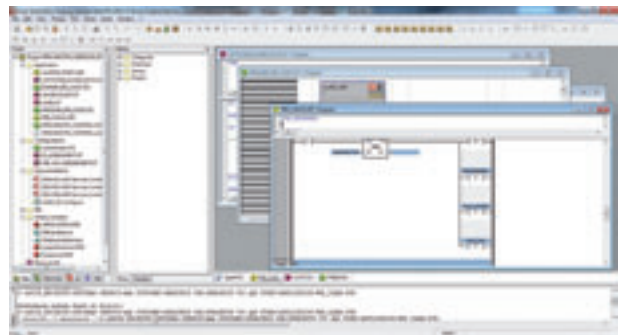
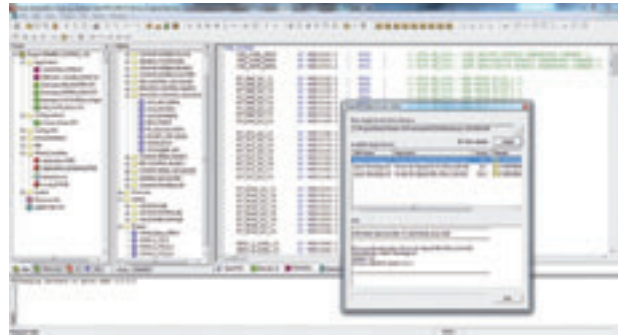
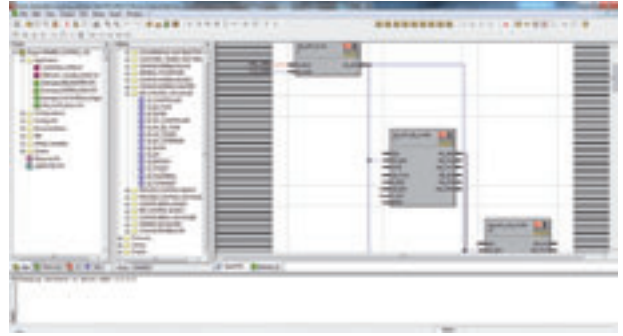
**FEATURES**

FUNCTIONAL	SOFTWARE OPENPCS
Standard	IEC 61131-3
Programming languages	Instruction List Structured Text Function Block Diagram Ladder Diagram Sequential Function Chart Continous Function Chart
Programming	Application project developing structured and simplified by the variable declaration method and keywords auto-recognition. Integrated online debug and simulation tools. Projects management "easy to use" trough the dedicated browser.
Libraries	AT_Generic_Advanced_Lib: includes advanced calculation and process functions such as Averages, Characterizations/Linearizations, A/D conversions, A/D Selectors, Totalizators, Limiters AT_Process_Generic_Lib: includes advanced calculation and process functions such as Alarms, Singnal's conditioning, Dew point, Relative Humidity, Bacteria load reduction (Fo), Compensated flow, Carbon potential calculation AT_IO_Modules_Basic_Lib: specifically designed to configure and manage the I/O modules AT_Process_Control_Lib: includes all the advanced PID functions dedicated to the process control such as single or double action controllers, within different Autotuning and Feed Forward modes AT_CUo2_Cpu_Lib: specifically designed to manage the whole communication and diagnostic operations of the onboard I/Os and remote modules AT_Communications_Lib: includes a complete set of function blocks dedicated to the Modbus Master, Slave and Profibus agents communication activities plus Modems management.

# HOW TO ORDER

SOFTWARE OPENPCS	IEC 61131-3 programming software
AP52 SWOPCS00	

# SCREENSHOTS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES





# PRE-PROGRAMMED SYSTEMS



## Solutions ready to be used!

Flexible systems able to suit to all plants, through a simple configuration and programming by means of touch screens.

# CLIMA PAC

- "TURN KEY" SOLUTION FOR BOILER ROOMS
- COMPLETE CONTROL SOLUTION WITH HIGH CONNECTIVITY



## FEATURES

CLIMAPAC	
Functions	The control system climaPAC is able to perform :
	boiler control in power or temperature
	the cascade of condensing modules
	adjustment of 3 independent heating outlets each with temperature curve and weekly programmable thermostat with 8 slots for attenuation
	adjustment of domestic hot water in the boiler
	the management of the recirculation circuit with programmable time bands
	the function against legionella
	management of solar panels
	reading counts calories in the central
	the remote management climaPAC allows to monitor online the system, to examine continuous recording of process data, to work on the operative parameters ( programmable thermostats, curves weather, etc . )
access to facilities and functionality is regulated by password	
for each plant the interventions carried out by the various operators can be recorded and it is possible to upload electronic documents so that it is always available via the Internet	
PRE-PROGRAMMED SOLUTION	
System elements	Electric panel code CPS 02
	Kit external operator panel
	Supervision via Web ClimaVEM
	PT1000 probe with thermowell and PT1000 probe for external mounting

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

CPS02	CODE
<b>OPERATOR PANEL</b>	
Without Operator panel	-
With Operator panel integrated in the system	P
<b>MODEM</b>	
Without Modem	-
With UMTS Modem for remote management	P
<b>INPUTS EXPANSION MODULES</b>	
Without modules	-
With 4 PT1000 inputs modules (for transfer of solar thermal)	4
With 6 PT1000 inputs modules	6
With 8 PT1000 inputs modules	8
<b>OUTPUTS EXPANSION MODULES</b>	
Without modules	-
With 8 0... 10V control outputs modules	8

## COMPONENTS

ACCESSORIES
OPKIT – Kit made of 7" Touch screen operator panel with connection cables
R2IA46P015NPSCO – PT1000 6X40 mm probe in ABS case
R2IB126P15NPS – PT1000 6X120 mm probe with 1.5 m PVC cable
9TUDRC102 – Thermowell for immersion probes 1/4 gas thread, pipe 7.5x60 mm under-thread 60 mm with PG7 connector

### ELECTRIC PANEL



M81



### OPERATOR PANELS



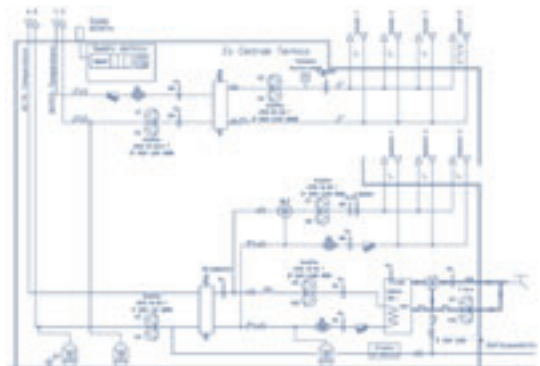
### OPERATOR PANELS



### PROBES AND THERMOWELL



### HYDRAULIC DIAGRAM



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# BREWERY PAC

• PRE-PROGRAMMED SYSTEM  
TO MANAGE BREWERY PLANTS



FEATURES

BREWERYPAC	
Functions	Solution that allows to control the temperature in the fermenter for beer production. Enabling is done through the touch screen and allows both control and supervision of individual fermenters. The modularity of the system is 8.
	Temperature control of the fermentors
	Temperature real time trend with time base of 1, 3, 6, 12 hours
	Daily historical trend
	Alarm management
	Alarm history recording
	Remote Management via Ethernet (also via the Web, via tablet or PC)
PRE-PROGRAMMED SOLUTION	
System components	Operator panel OPMT3105/N Modular solution: 1 to 32 controllers mod. K31 or 1 to 4 M81 controllers (each controlling 8 zones)

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

BP01 XXX-YY

OPMT3105/N pre-programmed with BreweryPAC interface on board  
no. 1... 8 Controllers mod. M81 pre-programmed with BreweryPAC applicative  
no. 1... 32 Controllers mod. K31

## COMPONENTS

M81



## SCREENSHOTS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# LIGHT PAC

• REMOTE MONITORING SOLUTION FOR LOAD DISTRIBUTION LIGHTS



FEATURES

LIGHTPAC	
What is it ?	<p>It is a control system to be installed in electrical cabin with optional functionality to handle remote commands with a Point to Point connection from a PC.</p> <p>The control system LightPAC consists of two electric panels : one for the power (LPS 01) and one for the control (CPS 03).</p> <p>The system is able to perform the programming of the load distribution of the lighting three-phase or single phase systems. The control panel is interfaced with the power panels LPS 01 equipped with power controllers TH...E series: these can control single-phase systems or three-phase power up to 60A.</p>
Functions	Power supply voltage reduced lighting
	Adjustment of the light depending on times (10 progr. with 6 slots)
	Measure of the current supplied
	Calculation of power and energy saving
	Registration of the average daily savings
	Remote Management via Ethernet (also via the Web)
PRE-PROGRAMMED SOLUTION	
System components	Electric panel code CPS 03
	Electric power panel code LPS 01

# COMPONENTS

ELECTRIC PANEL



OPERATOR PANELS



# DIMENSIONS

ELECTRIC PANEL



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES





# PLC AND OPERATOR PANELS



## Solutions for every demand of space!

PLC and operator panels with bright TFT display widescreen high resolution re back lighted LED and up to 256 MB of memory.

For every application where power and control have to be separate from the HMI, we offer operator panels, both for front panel mounting and with custom dimensions.

## PLC AND OPERATOR PANELS

FEATURES		P04	OPMT 8050E	OPMT 8070E
Dimensions (inches)	4.3"	•	•	
	7"			•
	9.7"			
	12.1"			
	15"			
Flash MB memory			128	128
RAM MB memory			128	128
Colours			16.7M	16M
Slot SD/SDHC card		•		
USB Host		•	•	•
USB Client				
Ethernet		•	•	•
Power supply	24 Vac/Vdc	•	•	•
COM1 RS232/485 2/4 wires			•	•
COM1 RS232				
COM2 RS485 2/4 wires				
COM3 RS485 2 wires		•	•	•
COM3 RS485 2w/ RS232				
CAN bus				
Programming Software (optional)		•	•	•
CE certification + UL approval			•	•

FEATURES		P01
Dimensions (mm)	78 x 35	
	on request	•
Single display		•
Double display		
Power supply	12 Vdc	•
	(from the controller) 9 Vdc	
TTL Modbus not isolated		•
CE certification + UL approval		•



# P04

- PLC WITH TOUCH SCREEN MONITOR
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 4.3"



## FEATURES

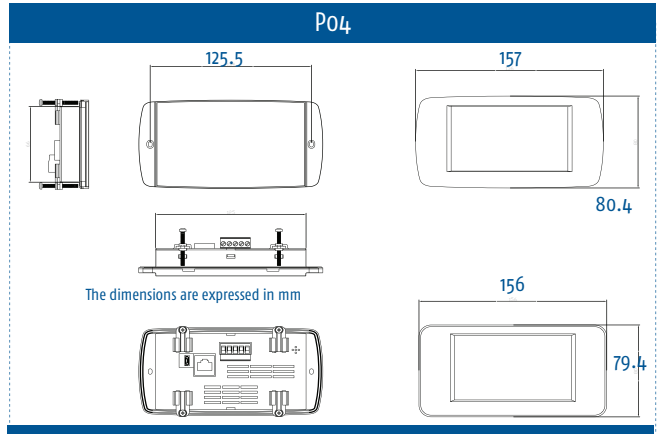
DISPLAY	
Display	P04 4.3" TFT
Resolution (pixel)	480 x 272
Brightness (cd/m <sup>2</sup> )	280
Back Light type	LED
Colours	262 K
Touch panel	4 wire Resistive Type
MEMORY	
Flash (MB)	128
RAM (MB)	128
FUNCTIONAL	
CPU	ARM9 26 32 Bits 4545 MHz processor
PLC	programmable with standard languages IEC61131-3, simulator and application monitor for debugger
Slot SD card	4 GB Micro SD
USB Host	2.0 x 1
Ethernet	10/100 base-T
COM port	COM1 RS485 2w
Fieldbuses	Modbus RTU, ASCII, TPC, CANOpen
RTC	Available
POWER SUPPLY	
Power supply	24 Vdc/Vac ±20%
Power consumption (mA @24V)	250
MECHANICAL	
Case	UL V04 Autoextinguishing plastic
Dimensions	83 x 159 x 28 mm
Weight	200 g
Protection degree	IP65
Operating temperature / Storage	0... +50°C (32°... +122°F) / -20... +60°C (-4... +140°F)
Operating humidity	10...90% RH without condensation
SOFTWARE	
Graphic interface	QT programming tool

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

P04	CODE
<b>MODEL</b>	
Touch screen 4.3" operator panel	-
Touch screen 4.3" operator panel with PLC function on board	P
<b>APPLICATIVE ON BOARD</b>	
Code that defines the applicative	XX
<b>ETHERNET PORT</b>	
Not available	-
Ethernet	E
<b>USB PORT</b>	
Not available	-
USB	U
<b>COM PORT</b>	
Not available	-
RS485	S
AT LIN	L
CAN	C
<b>SD CARD</b>	
Not available	-
SD card memory	M
<b>CLOCK</b>	
Not available	-
Real Time Clock	C
<b>CONNECTIONS</b>	
Plug-in screw type with connectors included	E
No connectors	N
<b>CASE - COLOUR AND SHAPE</b>	
Black, rectangular	B
Black, rounded	R
White, rectangular	S
White, rounded	W

## DIMENSIONS



# OPMT

- TOUCH SCREEN OPERATOR PANELS
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 4.3" E 7"



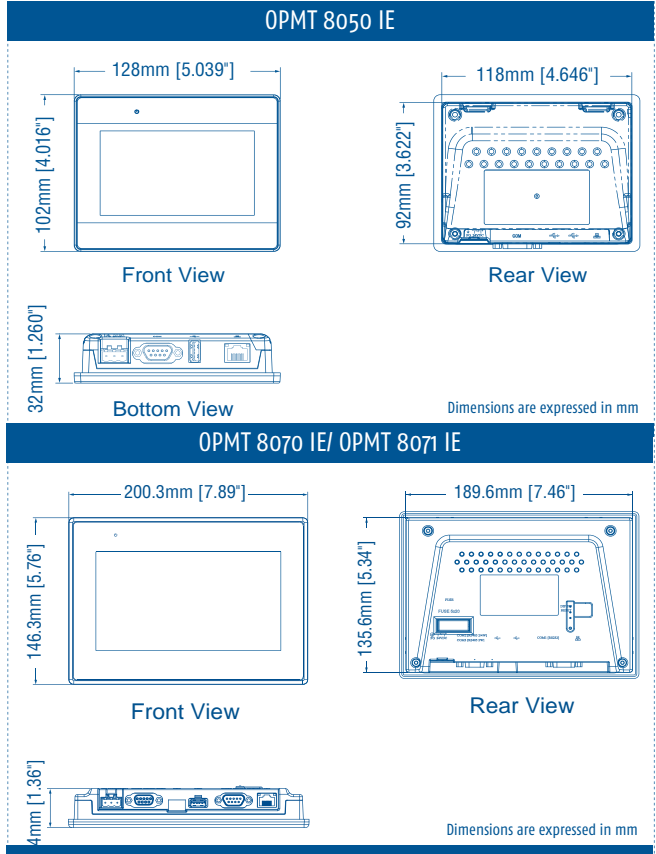
## FEATURES

DISPLAY	OPMT		
	8050 IE	8070 IE	8071 IE
Display	4.3" TFT	7" TFT	
Resolution (pixel)	480 x 272	800 x 480	
Brightness (cd/m <sup>2</sup> )	400	350	400
Contrast ratio	500:1		
Back Light type	LED		
Colours	16.7 M	16 M	16.7 M
Touch panel	4 wire Resistive Type		
<b>MEMORY</b>			
Flash (MB)	128 MB		
RAM (MB)	128 MB		
<b>I/O PORTS</b>			
USB Host	2.0 x 1		
Ethernet	10/100 base-T x 1		
COM port	COM1 (RS232/485 2 e 4w) COM3 (RS485 2w)		COM1 (RS232) COM2 (RS485 2 e 4w) COM3 (RS485 2w)
RS485 isolation	--	Available	--
CAN bus	--		
RTC (on board)	Available		
<b>POWER SUPPLY</b>			
Power supply	24 VDC ±20%		
Power supply dual isolation	Available	--	Available
Power consumption (mA@24V)	300	350	450
<b>MECHANICAL</b>			
Case	Plastic		
Dimensions WxHxD	128 x 102 x 32 mm	200.3 x 143.3 x 34 mm	
Panel cut-out	119 x 93 mm	192 x 138 mm	
Weight	0.25 Kg	0.6 Kg	
Protection degree	NEMA4/IP65		
Mounting	On panel		
Storage temperature	-20°... 60°C (-4°...140°F)		
Operating temperature	0°... 50°C (32°...122°F)		
Operating humidity	10...90% RH without condensation		
<b>SOFTWARE</b>			
Software (optional)	Programmable with EasyBuilderPro		
<b>COMPLIANCE</b>			
Compliance	UL type 4X (indoor use)		--

## HOW TO ORDER

OPMT	
8050 iE	4.3" TFT, 16.7M colours, 480x272 p., 2 COM, UL
8070 iE	7" TFT, 16M colours, 800x480 p., 2 COM, UL
8070 iE	7" TFT, 16.7M colours, 800x480 p., 3 COM

## DIMENSIONS



# OPMT

- TOUCH SCREEN OPERATOR PANELS
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 9.7", 12.1" E 15"



## FEATURES

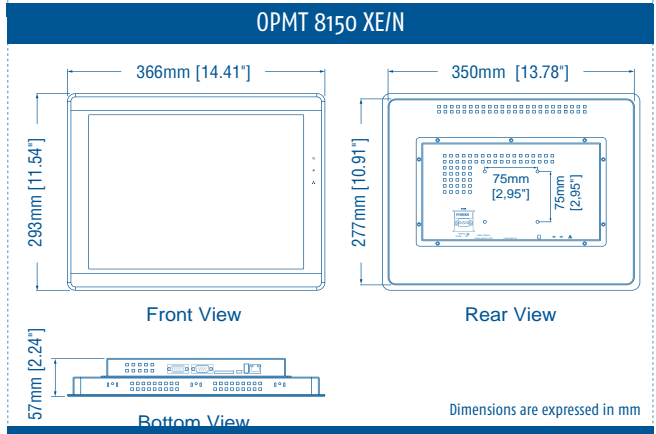
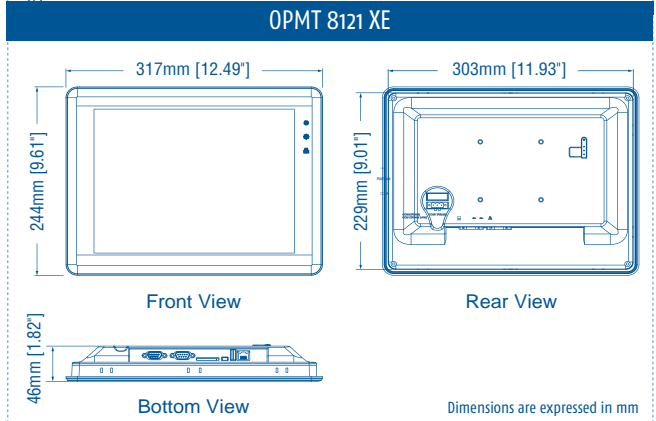
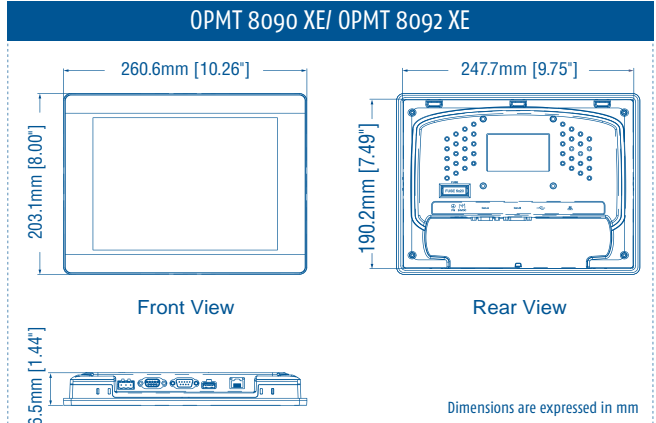
DISPLAY	OPMT			
	8092 XE	8090 XE	8121 XE	8150 XE/N
Display	9.7" TFT		12.1" TFT	15" TFT
Resolution (pixel)	1024 x 768			
Brightness (cd/m <sup>2</sup> )	350		500	400
Contrast ratio	500:1		700:1	
Back Light type	LED			
Colours	262K		16.2 M	
Touch panel	4 wire Resistive Type			
<b>MEMORY</b>				
Flash (MB)	512		256	
RAM (MB)	256			
<b>I/O PORTS</b>				
Slot SD card	Not available		SD/SDHC	
USB Host	2.0 x 1			
USB Client	Not available		2.0 x 1	
Ethernet	10/100 Base-T x 1	10/100/1000 Base-T x 2	10/100 Base-T x 1	
COM port	COM1 RS232 COM2 RS485 2w/4w COM3 RS485 2w	COM1 RS232 COM2 RS485 2w/4w COM3 RS485 2w/RS232	COM1 RS232/RS485 2w/4w COM3 RS485 2w	
RS485 dual isolation	Not available		Available	
RTC	Disponibile			
<b>POWER SUPPLY</b>				
Power supply	24 VDC ±20%			
Power consumption (mA @24V)	500	650	800	1000
<b>MECHANICAL</b>				
Case	Plastic		Aluminium	
Dimensions WxHxD	260.6 x 203.1 x 36.5 mm		317 x 244 x 46 mm	366 x 293 x 57 mm
Panel cut-out	250 x 192 mm		305 x 231 mm	352 x 279 mm
Weight	850 g		2.100 g	2.750 g
Protection degree	NEMA4/IP65		IP66/NEMA4	NEMA4/IP65
Mounting	On panel			
Storage temperature	-20°... 60°C (-4°...140°F)			
Operating temperature	0°... 50°C (32°...122°F)			
Operating humidity	10...90% RH without condensation			
<b>SOFTWARE</b>				
Software (optional)	Programmable with EasyBuilderPro			
<b>COMPLIANCE</b>				
Compliance	--		UL type 4X (indoor use)	



## HOW TO ORDER

OPMT	
8092 XE	9.7" TFT, 262k colours, 1024 x 768 p., 3 COM
8090 XE	9.7" TFT, 262k colours, 1024 x 768 p., 3 COM, UL
8121 XE	12.1" TFT, 16.2M colours, 1024 x 768 p., 2 COM, UL
8150 XE/N	15" TFT, 16.2M colours, 1024 x 768 p., 2 COM, UL

## DIMENSIONS



# P 01/30/32

- REMOTE OPERATOR PANELS
- EXTERNAL POWER SUPPLY (BY A SEPARATED CONTROL UNIT)
- 78 X 35 MM OR ON REQUEST



## FEATURES

DISPLAY	P01	P30	P32
Display	Single: 4 red digit, h 15.5 mm + Bargraph 3 LED	Single: 4 red digit, h 12 mm + Bargraph 3 LED	Dual: Main: 4 red digit, h 7 mm Secondary: 4 red digit, h 7 mm
<b>FUNCTIONAL</b>			
Sampling rate		500 ms	
Acoustic alarm	--		Internal buzzer (optional)
Serial communication		TTL Modbus not isolated	
Protocol		ModBus-RTU (JBUS)	
Baud rate		38400 baud	
<b>GENERAL</b>			
Power supply	12 Vdc supplied by the controller	9 Vdc supplied by the controller	
Power consumption		50 mA	
Dimensions / Weight	On request / 115 g approx.	78 x 35 mm - depth 64 mm / 120 g approx.	
Mounting	Behind layout	Flush in panel in 71 x 29 mm hole	
Front protection degree	--	IP65, mounted on panel with gasket	
Connections	Screw terminals	Screw terminal block 2.5 mm <sup>2</sup>	
Operating / storage temperature		0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)	
Operating humidity		20... 95 RH% without condensation	
Conformity		Directive EMC 2004/108/CE (EN 61326) - Directive LV 2006/95/CE (EN 61010-1)	

## HOW TO ORDER

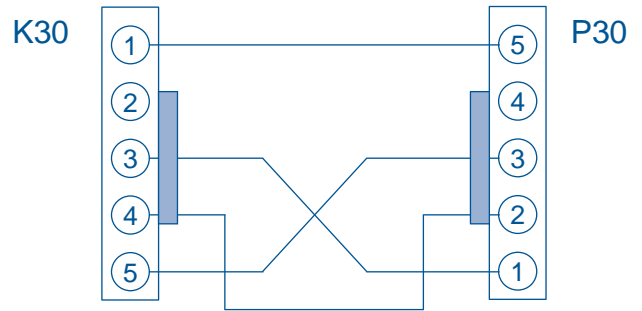
To compose the part number, pls. choose one of the option for each variable

P01	CODE
<b>DISPLAY</b>	
Red	-
Amber	A
Blue	U
<b>INPUT</b>	
From the connected controller	-
<b>OUTPUT</b>	
Out 8 Vdc	W
Not available	-

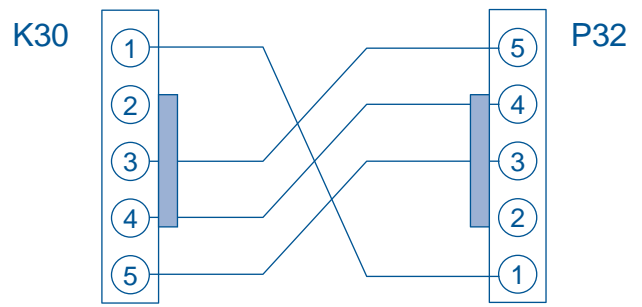
P30 / P32	CODE
<b>DISPLAY</b>	
Red	-
Blue	U
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-

## CONNECTIONS

P30

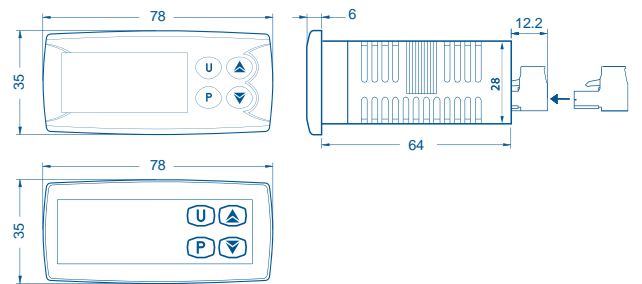


P32



## DIMENSIONS

P30 / P32



The dimensions are expressed in mm



# TIMERS – COUNTERS – POWER LIMITERS



## Multi-scale and multi-function

Microprocessor based timers, counters and power limiters with 4 digits single display, equipped with double outputs and screw terminal block. Some models are also available with buffer battery for time counting also in lack of supply.

## TIMERS – COUNTERS – POWER LIMITERS

FEATURES		TIMERS		
		BWT40	T34	T49
Dimensions (mm)	78 x 35		•	
	48 x 48			•
	72 x 72			
	35.8 x 90 4 DIN Modules	•		
4 digit single display		•	•	
6 digit single display	•			
Input	2 for free voltage contacts		•	•
	2 for voltage contacts		•	•
Relay or voltage for SSR drive outputs		2	2	
Relay outputs		2		
Power supply	12 Vac/Vdc		•	•
	24 Vac/Vdc		•	•
	100... 240 Vac	•	•	•
Multi-scale, Multi-function	•	•	•	
Multi-frequency, Multi-function				
40 daily and/or weekly programs	•			
Manual output driving, Daylight saving time function, Random function	•			
CE certification		•	•	

		COUNTERS				POWER LIMITERS	
TT73		TC34	TC49	TC73	TP34	TP49	
		•			•		
			•			•	
	•			•			
	•	•	•	•	•	•	
	•	•	•	•	•	•	
	•	•	•	•	•	•	
	•	•	•	•	•	•	
	2	2	2	2	2	2	
	•	•	•	•	•	•	
	•	•	•	•	•	•	
	•	•	•	•	•	•	
	•	•	•	•	•	•	
		•	•	•			
	•	•	•	•	•	•	

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# BWT40

- MULTIFUNCTION TIMER PROGRAMMER
- UP TO 2 OUTPUTS
- UP TO 40 DAILY AND WEEKLY PROGRAMS



## FEATURES

DISPLAY	
Single LCD	BWT40 Multi-indication, 6 digit
OUTPUTS	
Up to 2	OUT 1: Relay SPDT 16 A at 250 VCA or OUT 1 and OUT 2: Relay SPDT 8 A at 250 VCA
FUNCTIONAL	
Programmable functions	Pulses programming: adjustable from 0 to 59 sec Manual outputs driving Daylight Saving Time Random Function 40 daily/weekly programs LED for status indication of the relay outputs LED indication of the instrument powered
GENERAL	
Power supply	100... 240 Vac ±10% (48...63 Hz)
Power consumption	4.4 VA approx.
Battery	Internal 4 years approx.
Accuracy	(at 20 °C): ± 2.0
Dimensions / Weight	35.8 x 90 mm, depth 73 mm / 110 g approx.
Mounting	On OMEGA DIN A rail
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)
Operating humidity	30...95% RH without condensation

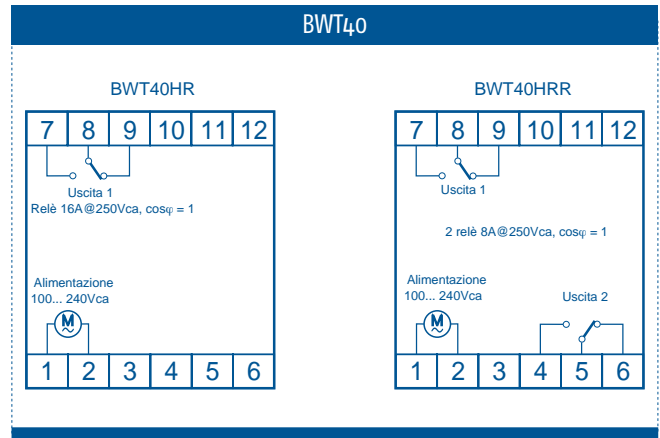


## HOW TO ORDER

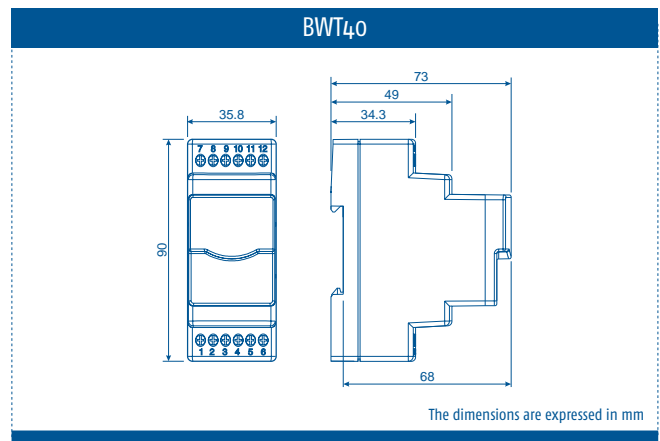
To compose the part number, pls. choose one of the option for each variable

BWT40	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac/Vdc	H
<b>OUT 1</b>	
Relay	R
<b>OUT 2</b>	
Relay	R
Not available	-

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# TT 34/49/73

- MULTISCALE AND MULTIFUNCTION TIMERS
- UP TO 2 OUTPUTS
- WITH BACK UP BATTERY



## FEATURES

DISPLAY	TT34	TT49	TT73
Single	4 red digit, h 12 mm		4 red digit, h 14 mm
<b>INPUTS</b>			
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)		
Delay time inputs	15 msec max.		
<b>OUTPUTS</b>			
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR		
<b>FUNCTIONAL</b>			
Programmable functions	OUT 1: Delayed, Feedthrough, oscillator (start/stop) with asymmetric times start ON, or start OFF, One cycle asymmetric oscillator (start/stop) with start OFF, OUT 2: as OUT 1, as instant contact, as OUT 1 but with another independent time, as OUT 1 but with another relative time		
Programmable time scales	9999 hrs - 99 hrs 59 min - 99 min 59 sec - 99 sec 99 cent. sec		
Counting mode	UP or DOWN		
Display resolution	According to the used scale : hrs - min - sec - Cent sec		
Counting autonomy without power supply	According to the used ext. battery	Approx. 10 hrs with full load battery	
<b>GENERAL</b>			
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc $\pm 10\%$ (50/60 Hz)		
Power consumption	2 VA approx.		
Power consumption with battery supply	9 mA approx.	4.5 mA approx.	
Battery	External 9 V - E type	Internal 3.6 V - rechargeable	
Power consumption voltage inputs	1 mA max.		
Dimensions / Weight	33 x 75 mm - depth 64 mm / 175 g approx.	48 x 48 mm (1/16DIN) - depth 98 mm / 200 g approx.	72 x 72 mm - depth 96 mm / 270 g approx.
Connections	Screw terminal block 2x1 mm <sup>2</sup>		
Mounting	Flush in panel in 29 x 71 mm hole	Flush in panel in 45 x 45 mm hole	Flush in panel in 66.5 x 66.5 mm hole
Front protection degree	IP 65, mounted on panel with gasket	IP 54, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)		
Operating humidity	30... 95 RH% without condensation		
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)		

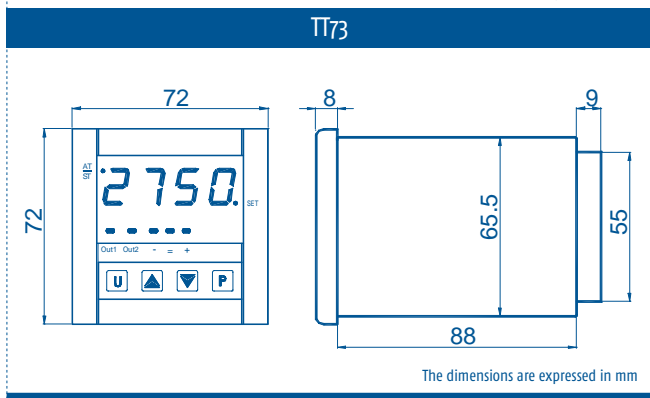
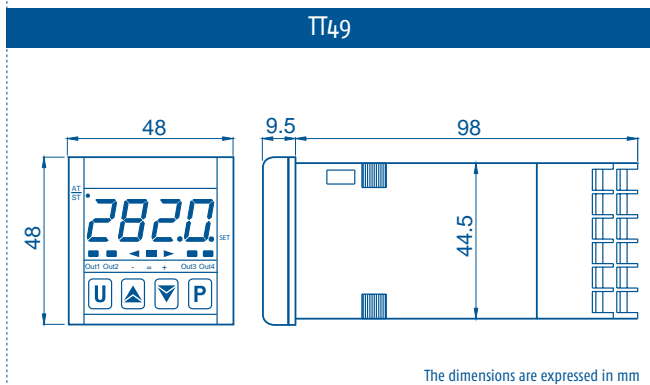
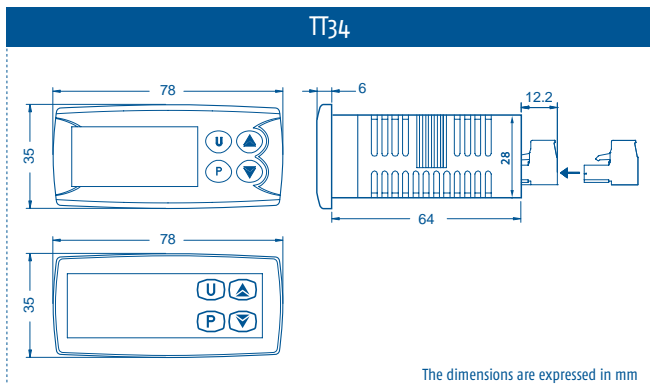
Note: The external battery (9V - type E) is provided only on request. The battery is used to keep counting even in the absence of supply.

# HOW TO ORDER

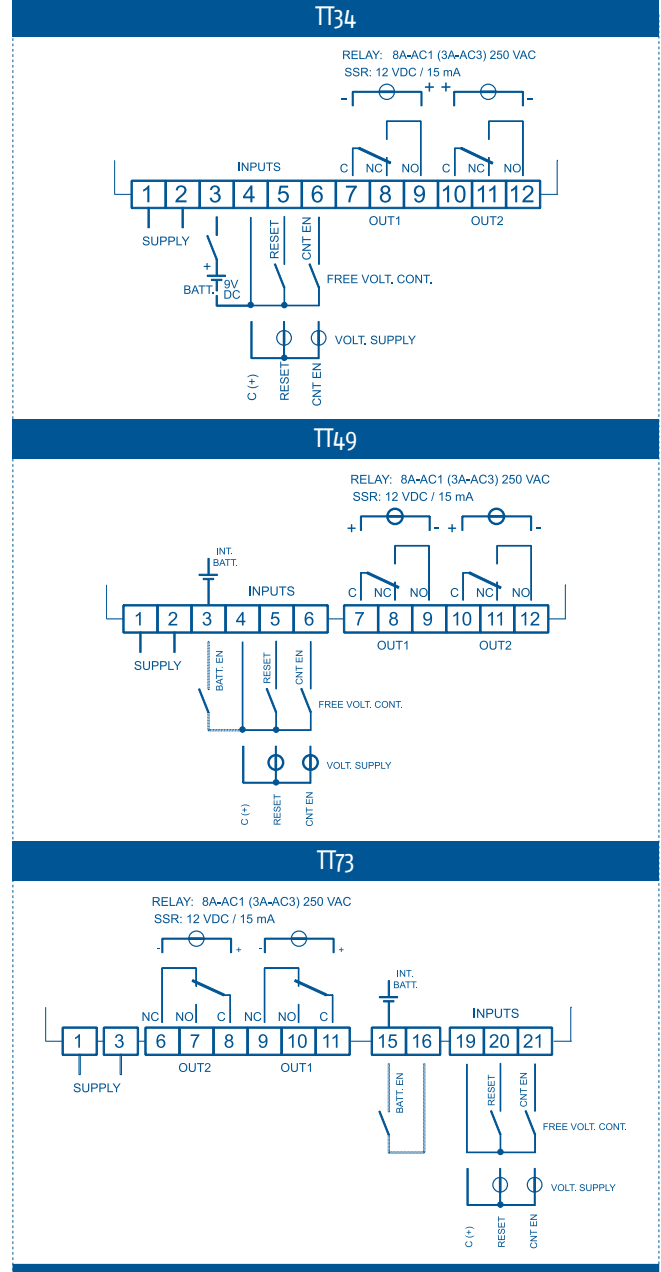
To compose the part number, pls. choose one of the option for each variable

TT34 / TT49 / TT73	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
<b>INPUT</b>	
Voltage	V
Free voltage	C
<b>OUT 1 + OUT 2</b>	
Relay	RR
Vdc for SSR driving	00
<b>BATTERY (TT49 AND TT73 ONLY)</b>	
Internal	B
External - 9V Type E	-

# DIMENSIONS



# CONNECTIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# TC 34/49/73

- MULTIFUNCTION AND MULTIFREQUENCY COUNTERS
- UP TO 2 OUTPUTS



## FEATURES

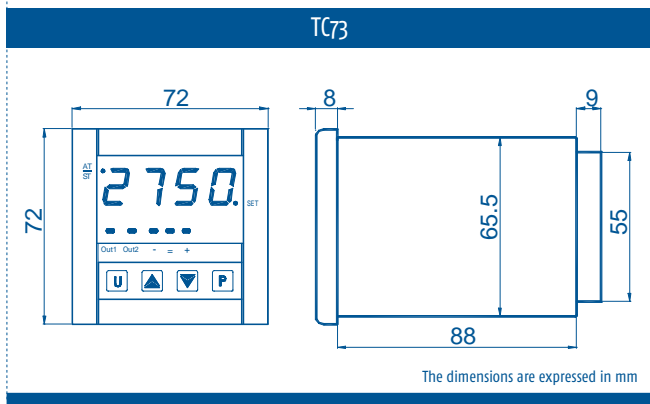
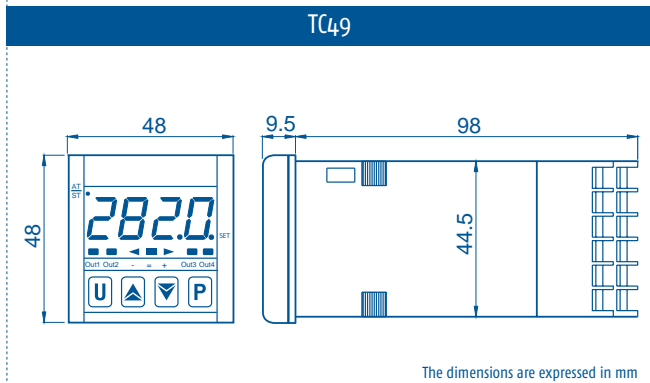
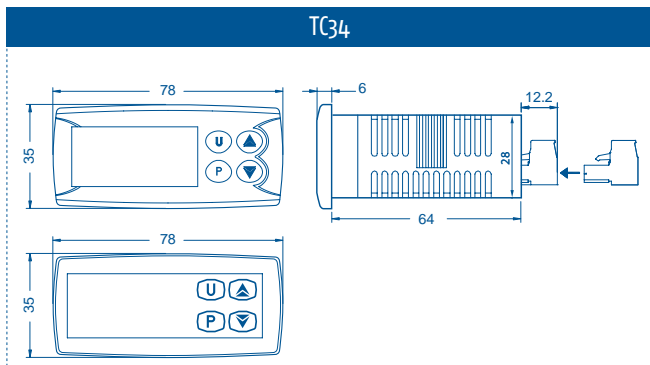
	TC34	TC49	TC73
<b>DISPLAY</b>			
Single	4 red digit, h 12 mm		4 red digit, h 14 mm
<b>INPUTS</b>			
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)		
Delay time inputs	15 msec max.		
<b>OUTPUTS</b>			
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR		
<b>FUNCTIONAL</b>			
Programmable functions	Restart - Restart/Lap - Count		
Frequenza di conteggio	2 - 10 - 40 - 125 - 1000 Hz. Programmable		
Counting mode	UP or DOWN		
Display resolution	9999		
Back up memory	Programmable Back-up function in case of power supply failure		
<b>GENERAL</b>			
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc $\pm 10\%$ (50/60 Hz)		
Power consumption	3 VA approx.		
Power consumption voltage inputs	1 mA max.		
Dimensions / Weight	33 x 75 mm - depth 64 mm / 175 g approx.	48 x 48 mm (1/16 DIN) - depth 98 mm / 200 g approx.	72 x 72 mm - depth 96 mm / 270 g approx.
Connections	Screw terminal block 2x1 mm <sup>2</sup>		
Mounting	Flush in panel in 29 x 71 mm hole	Flush in panel in 45 x 45 mm hole	Flush in panel in 66.5 x 66.5 mm hole
Front protection degree	IP 65, mounted on panel with gasket	IP 54, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-20... 70°C (-4... 158°F)		
Operating humidity	30... 95 RH% without condensation		
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)		

# HOW TO ORDER

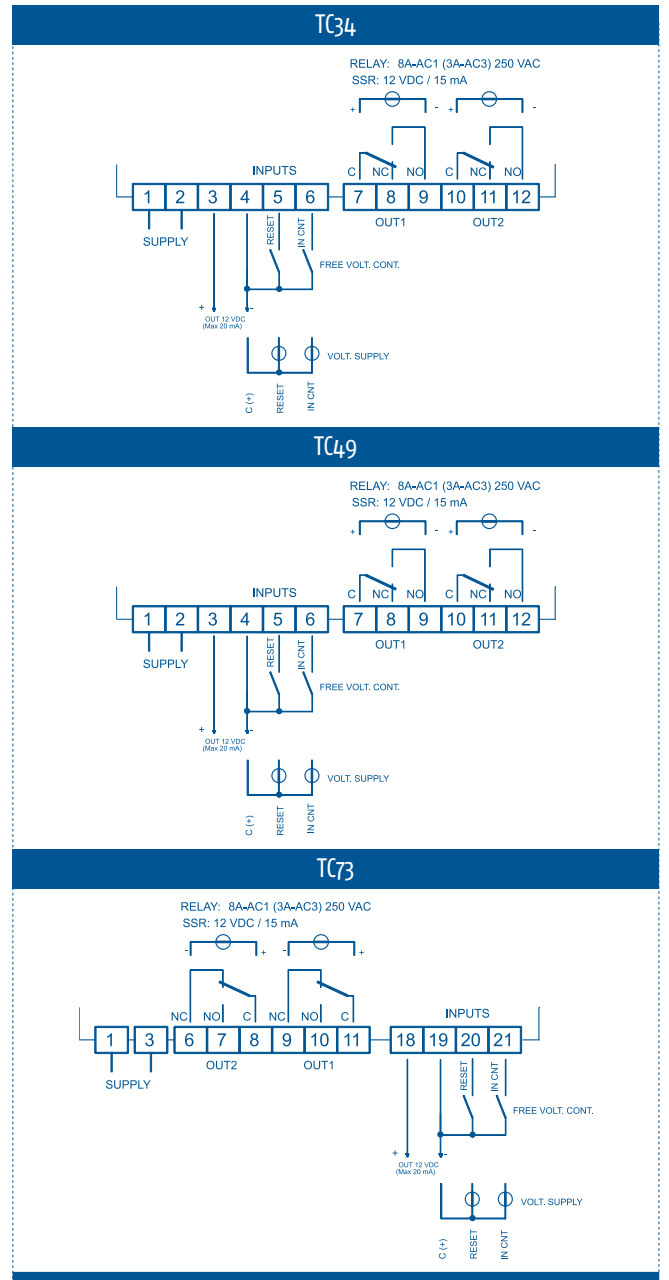
To compose the part number, pls. choose one of the option for each variable

TC34 / TC49 / TC73	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
<b>INPUT</b>	
Voltage	V
Free voltage	C
<b>OUT 1 + OUT 2</b>	
Relay	RR
Vdc for SSR driving	00

# DIMENSIONS



# CONNECTIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# TP 34/49

- POWER LIMITERS
- UP TO 2 OUTPUTS



## FEATURES

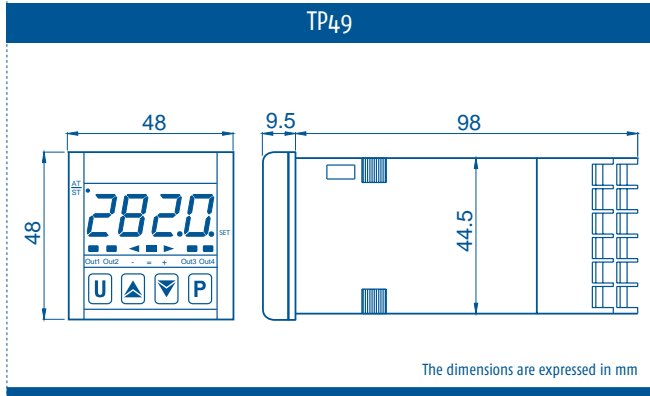
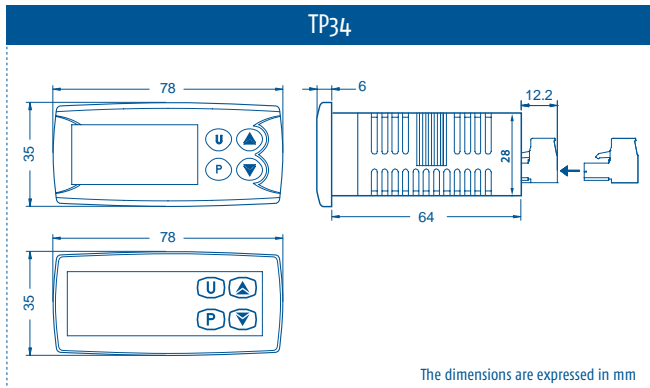
	TP34	TP49
<b>DISPLAY</b>		
Single		4 red digit, h 12 mm
<b>INPUTS</b>		
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)	
Delay time inputs	15 msec max.	
<b>OUTPUTS</b>		
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR	
<b>GENERAL</b>		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc $\pm 10\%$ / 50/60 Hz	
Power consumption	2 VA approx.	
Power consumption voltage inputs	1 mA max.	
<b>FUNCTIONAL</b>		
Application	Asymmetric oscillator timer (start/stop) with power limiter function	
Programmable functions	OUT 1: oscillator (start/stop) with asymmetric times start ON, or start OFF OUT 2: as OUT 1, as OUT 1 but in opposite way, as OUT 1 but in opposite way with power limiter function	
Outputs cycle time	From 1 to 900 sec	
Dimensions / Weight	33 x 75 mm - depth 64 mm / 175 g approx.	48 x 48 mm (1/16DIN) - depth 98 mm/ 200 g approx.
Connections	Screw terminal block 2x1 mm <sup>2</sup>	
Mounting	Flush in panel in 29 x 71 mm hole	Flush in panel in 45 x 45 mm hole
Front protection degree	IP 65, mounted on panel with gasket	IP 54, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... 70°C (-4... 158°F)	
Operating humidity	30... 95 RH% without condensation	
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)	

# HOW TO ORDER

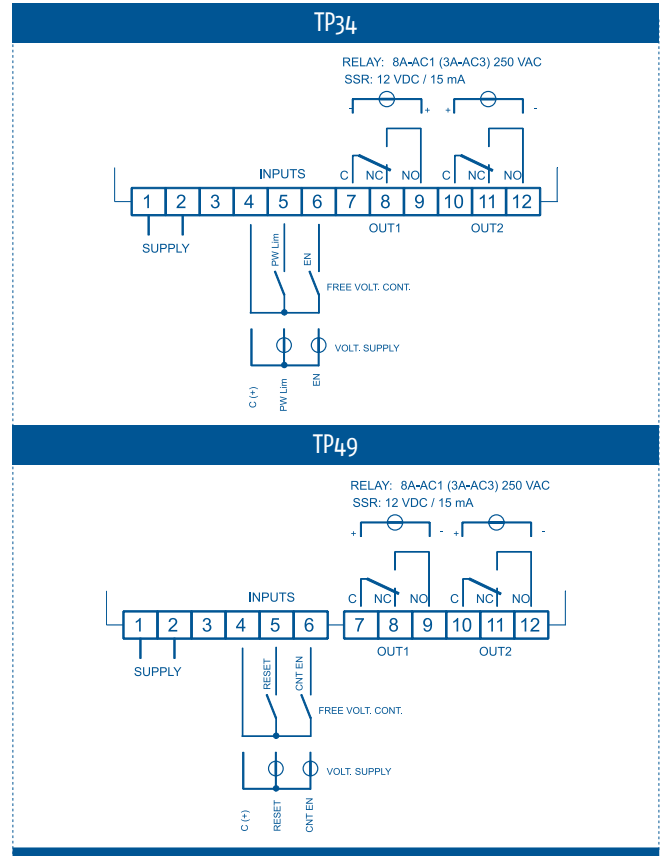
To compose the part number, pls. choose one of the option for each variable

TP34 / TP49	CODE
<b>POWER SUPPLY</b>	
12 Vac/DC	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
<b>INPUT</b>	
Voltage	V
Free voltage	C
<b>OUT 1</b>	
Relay	R
VdcxSSR	O
<b>OUT 2</b>	
Relay	R
Vdc for SSR driving	O

# DIMENSIONS



# CONNECTIONS







# INDICATORS



## Much more than simple indicators!

Digital indicators with one or more universal inputs and potentiometer or with configurable input. Also available with a dedicated input version strain gauge for melt pressure transducer and load cell.

# INDICATORS

FEATURES		T1140	K31V	K38V
Dimensions (mm)	78 x 35		•	•
	48 x 24			
	48 x 48	•		
	70 x 84 4 DIN Modules			
	96 x 48			
4 digit single display		•	•	
5 digit single display				
Main input	Universal input	•		
	J-K-S-R-T + IR + PTC-NTC		•	•
	J-K-S-R-T + IR + Pt100		•	•
	0/4... 20 mA o 0/1... 5 V o 0... 10V		•	•
	Δ T PT100			
	Digital		2	
Auxiliary input	Strain gauge (5V/10V)			
	0/4... 20 mA or 0/1... 5 V or 0... 10V			
Relay or voltage for SSR drive outputs		4	4	2
Analogue current or voltage outputs		1		
Measuring retransmission				
Power supply	12 Vac/Vdc		•	
	20... 30 Vac/Vdc	•		
	24 Vac/Vdc		•	•
	100... 240 Vac	•	•	•
RS485 ModBus		•	•	
Mathematical Functions				
MIN, MAX, HOLD PV, HOLD PICCO, MEDIA functions				
CE certification + UL approval		•	•	•

	K4.8V	K85V	C1	J1	J3	J5
			•			
	•					
		•				
	•	•	•	•	•	•
			•	•	•	•
	•	•				
	•	•				
	•	•				
			•	•	•	
	2	2		3	3	3
						•
					•	•
	3	3	2	4	4	4
			1	1	1	1
			•		•	•
	•	•	•	•	•	•
	•	•	•	•	•	•
		•	•	•	•	•
	•	•	•	•	•	•

INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# TLI40

- UNIVERSAL AND POTENTIOMETER INPUT
- UP TO 4 OUTPUTS
- RS485



## FEATURES

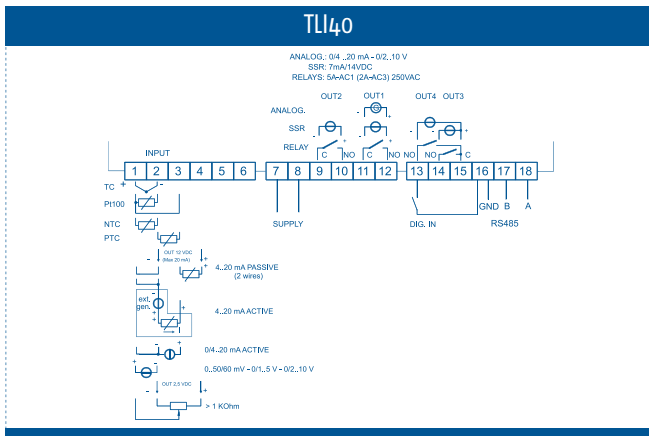
DISPLAY	
Single	TLI40 4 red digit, h 12 mm
INPUTS	
Universal	Thermocouples J, K, S, B, C, E, L, N, R, T and Infrared sensors J or K + Thermoresistances Pt 100 3 wires + Thermistors PTC KTY 81-121 (990 Ω a 25°C) e Thermistors NTC 103AT-2 (10 kΩ a 25°C) + Linear signals 0... 50mV, 0... 60mV, 12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V + Linear Potentiometers (see next page for temperature ranges)
Accuracy	±0.15% fs
OUTPUTS	
Up to 4	OUT 1, OUT 2, OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 2A-AC3/250 Vac) or 7mA/14 Vdc to drive SSR
Current or voltage (as alternative to OUT 1)	OUT 1: 0/4...20mA or 0/2...10V
Auxiliary power supply	12 Vdc/20 mA max 2.5 Vdc/2.5 mA for Linear Potentiometers
FUNCTIONAL	
Sampling rate	Selectable from 8 to 64 samples per second for analogue signals or potentiometer inputs
Resolution	8 samples/sec = 32000 points 16 samples/sec = 16000 points 32 samples/sec = 8000 points 64 samples/sec = 4000 points
Accuracy	±0.15% fs
Serial communication	RS485 with ModBus-RTU (iBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac ±10% / 50/60 Hz
Power consumption	8 VA approx.
Dimensions / Weight	48 x 48 mm - depth 98 mm / 190 g approx.
Connections	Screw terminal block 2 x 1 mm <sup>2</sup>
Mounting	Flush in panel in 45 x 45 mm hole
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLI40	CODE
<b>POWER SUPPLY</b>	
20... 30 Vac/Vdc	L
90... 240 Vac	H
<b>OUT 1</b>	
Relay	R
20 mA/14 Vdc for SSR driving	O
0/4... 20mA	C
0/2... 10V	V
Not available	-
<b>OUT 2</b>	
Relay	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3</b>	
Relay	R
Vdc for SSR driving	O
Not available	-
<b>OUT 4</b>	
Relay	R
Vdc for SSR driving	O
Not available	-
<b>SERIAL COMMUNICATION AND DIGITAL INPUT</b>	
RS485	S
RS485 + Digital input	I
Not available	-
<b>SENSOR POWER SUPPLY</b>	
2.5 Vdc	B
12 Vdc for analogue input	A
<b>INPUT FROM POTENTIOMETER</b>	
Available	-P
Not available	--

# CONNECTIONS



# TEMPERATURE RANGES

INPUT	TEMPERATURE RANGES	
	WITHOUT "DP" (DECIMAL POINT)	WITH "DP"= 1, 2, 3
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-270 ... 1370 °C - 454 ... 2498 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc S	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 999.9 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-270 ... 1300 °C -454 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-270 ... 400 °C -454 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
IR sensors (ZIS)	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt100 (IEC)	-200 ... 850 °C -328 ... 1562 °F	-99.9 ... 850.0 °C -99.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ... 302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F
0... 20 mA	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99
4... 20 mA	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 50 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 60 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
12... 60 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 5 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
1... 5 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 10 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
2... 10 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
Potentiometers (> 1 KΩ)	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999

# K 31V/38V

- PROGRAMMABLE INDICATORS
- UP TO 4 OUTPUTS FOR ALARMS MANAGEMENT
- SERIAL COMMUNICATION RS485 OR TTL MODBUS



## FEATURES

DISPLAY	K31V	K38V
Single	4 red digit, h 12 mm + 3 LEDs Bargraph	
<b>INPUTS</b>		
4 different configurations	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) e Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200... 850°C/-328... 1562°F)	
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)	
	Linear signals 0/4... 20mA	
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V	
Digital inputs	2 for free voltage contacts	--
<b>OUTPUTS</b>		
Up to 4 (K31V) Up to 2 (K38V)	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.	
<b>FUNCTIONAL</b>		
Signal retransmission	Set Point	--
Serial communication	RS485 with ModBus-RTU (iBUS) protocol	TTL ModBus
Baud rate	1200... 38400 baud, programmable	--
<b>GENERAL</b>		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	
Power consumption	6 VA approx.	
Dimensions / Weight	78 x 35 mm - depth 64 mm or 78.5 mm with plug-in terminals / 180 g approx.	78 x 35 mm - depth 64 mm / 180 g approx.
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm <sup>2</sup>	Screw terminal block 2 x 1 mm <sup>2</sup>
Mounting	Flush in panel in 71 x 29 mm hole	
Front protection degree	IP 65, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)	

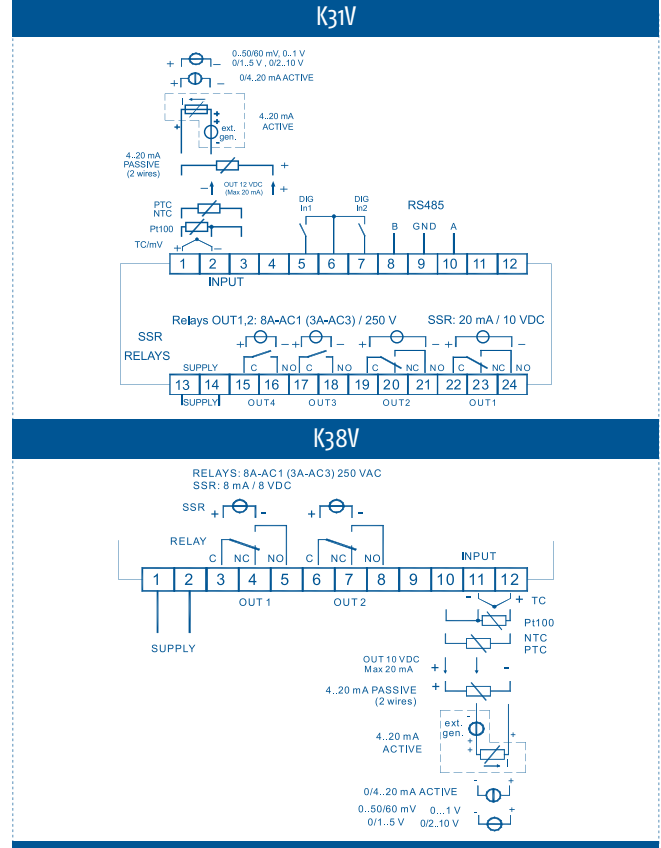
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

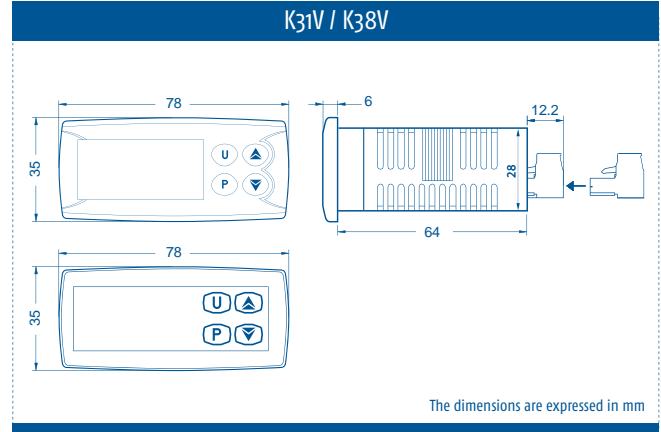
K31V	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 4</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL ModBus	-

K38V	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-

# CONNECTIONS



# DIMENSIONS



**K 48V**

- INDICATOR
- UP TO 3 OUTPUTS FOR ALARM INDICATION
- TTL SERIAL COMMUNICATION

**FEATURES**

<b>DISPLAY</b>	
Single	K48V 4 red digit, h 7mm
<b>INPUTS</b>	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200... 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts, as alternative to Out 3
<b>OUTPUTS</b>	
Up to 3	OUT1 and OUT2: Relay SPST-NO (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving
Auxiliary supply	12 Vdc/20 mA max.
<b>FUNCTIONAL</b>	
Serial communication	TTL ModBus
<b>GENERAL</b>	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions	48 x 48 mm (1/16 DIN) - depth 98 mm
Weight	180 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	Flush in panel in 45 x 45 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

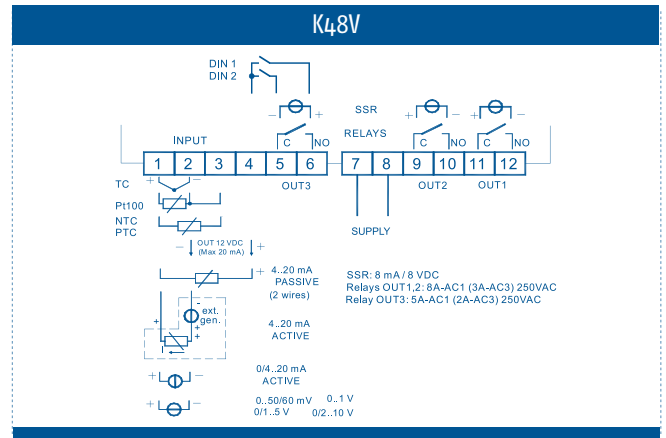


# HOW TO ORDER

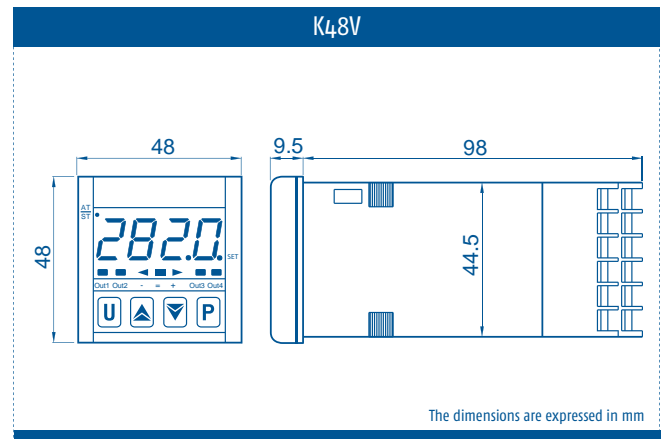
To compose the part number, pls. choose one of the option for each variable

K48V	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Not available	-
<b>OUT 3</b>	
2 digital inputs	D
Relay SPST 5A-AC1	R
Vdc for SSR driving	O
Not available	-

# CONNECTIONS



# DIMENSIONS



**K 85V**

- INDICATOR
- UP TO 3 OUTPUTS FOR ALARM INDICATION
- RS485 SERIAL COMMUNICATION

**FEATURES**

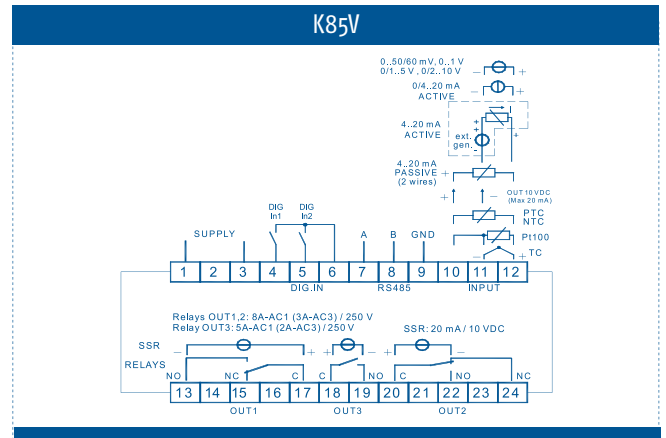
K85V	
<b>DISPLAY</b>	Single
	4 red digit, h 12 mm + 3 LEDs bargraph
<b>INPUTS</b>	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200... 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts
<b>OUTPUTS</b>	
Up to 3	OUT1 and OUT2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving
Auxiliary supply	12 Vdc/20 mA max.
<b>FUNCTIONAL</b>	
Signal retransmission	Set point
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200... 38400 baud, programmable
<b>GENERAL</b>	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions	4 DIN rail modules, 70 x 84 mm - depth 60 mm
Weight	230 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>
Mounting	On OMEGA DIN A rail
Front protection degree	IP 40, for internal use
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

## HOW TO ORDER

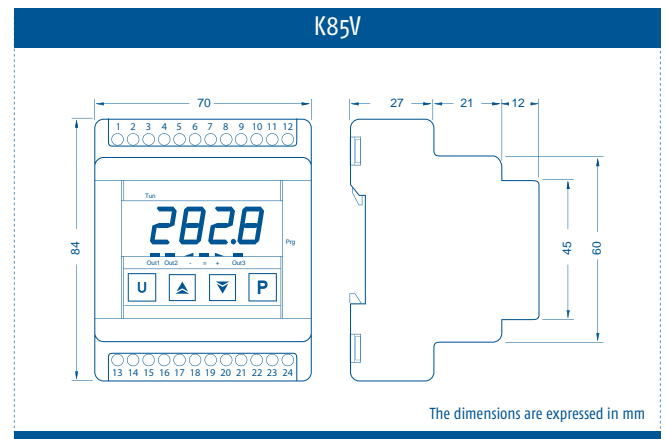
To compose the part number, pls. choose one of the option for each variable

K85V	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC, PT100, mV	C
TC, PTC, NTC, mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST 5A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL Modbus	-
<b>DIGITAL INPUTS</b>	
2 digital inputs	D
Not available	-

## CONNECTIONS



## DIMENSIONS



# J1 / J3

- J1: 5 DIGIT INDICATOR WITH 2 ALARMS
- J3: 5 DIGIT INDICATOR WITH 2 INPUTS AND 4 ALARMS



## FEATURES

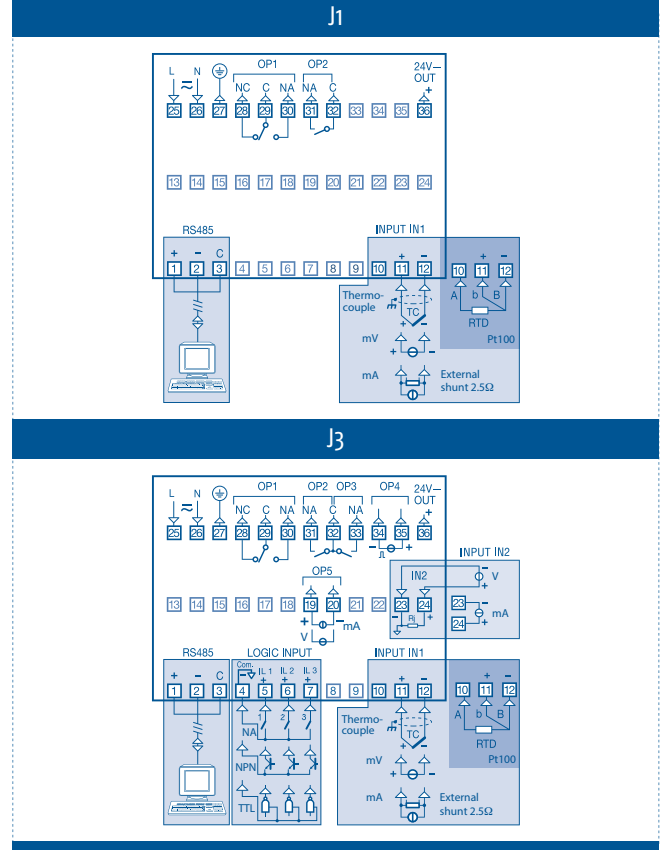
	J1	J3
<b>DISPLAY</b>	Single	
	5 digit programmable as red or green, h 15.5 mm	
<b>INPUTS</b>		
Main input (IN1)	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F) B (0... +1800°C / 32... 3272°F), N (0... +1200°C / 32... 2192°F), E (0... +600°C / 32... +1112°F), Ni-NiMo (0... +1100°C / 32... +2012°F), W3/W5 (0... +2000°C / 32... 3632°F) Thermoresistances: PT100 (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA (shunt) Infrared sensors or special ranges (custom)	
Auxiliary input (IN2)	--	0/4...20 mA or 0/1...5 V, 0...10 V
Digital inputs	3, logic type not isolated	
Accuracy	0.25% ±1 digit (thermoelements) or 0.1% ±1 digit (for mA and mV)	
<b>OUTPUTS</b>		
Up to 2 (J1) Up to 5 (J3)	OUT 1: Relay SPDT 2A/250Vac (4A/120Vac) for resistive loads OUT 2: Relay NO 2A/250Vac (4A/120Vac) for resistive loads	OUT 1: Relay SPDT 2A/250Vac (4A/120Vac) for resistive loads OUT 2 and OUT 3: Relay NO 2A/250Vac (4A/120Vac) for resistive loads OUT 4: Logic not isolated 0/5 Vdc ±10% 30mA max. or Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 5: 0/4...20 mA for inputs retransmission
Auxiliary power supply	24 Vdc (±20%)/30 mA max. for external transmitter	
Outputs configuration	2, programmable as alarm	4, programmable as alarm
<b>FUNCTIONAL</b>		
Special functions	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying IN1, IN2, CIN (conditioned input), Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function
Update measurement time	0.7 sec	
Sampling rate	1.5 sec	
Signal retransmission	--	Measurement
Serial communication	RS485 with Modbus RTU protocol	
Baud rate	1200, 2400, 4800, 9600 baud	
<b>GENERAL</b>		
Power supply	100...240Vac (-15...+10%) or 24Vac (-25...+12%) or 24Vdc (-15...+25%) (50/60 Hz)	
Power consumption	5 VA approx.	
Dimensions / Weight	96 x 48 mm (1/8 DIN), depth 110 mm / 250 g approx.	
Mounting	Flush in panel in 92 x 45 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN61010-1 (IEC1010-1)	

# HOW TO ORDER

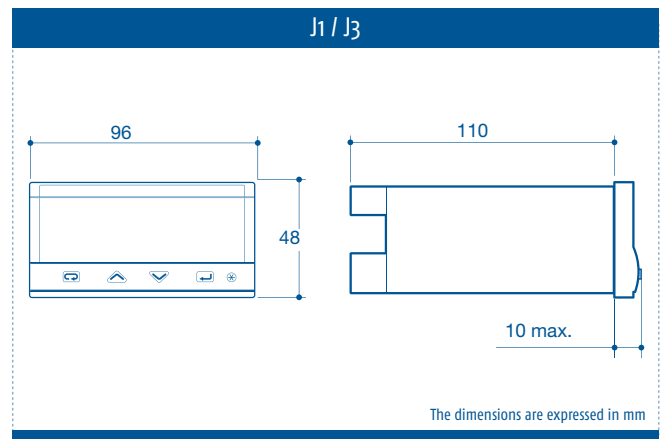
To compose the part number, pls. choose one of the option for each variable

J1/J3	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac	3
24 Vac/Vdc	5
<b>OUT 1, OUT 2, OUT 3 AND OUT 4</b>	
Not available	0
Relay-Relay-Relay-SSR (J3 only)	1
Relay-Relay	7
Relé-relé-relé-relé (J3 only)	9
<b>SERIAL COMMUNICATION</b>	
Not available	0
RS485	5
<b>SPECIAL FUNCTIONS</b>	
Not available	0
OUT 5 retransmission (J3 only)	1
Input IN2 (J3 only)	2
OUT 5 retransmission + IN2 (Solo J3)	5
<b>SPECIAL FUNCTIONS</b>	
Not available	0
<b>INSTRUCTION MANUAL</b>	
Italian/English	0
Not available	9
<b>FRONT FRAME COLOUR</b>	
Dark grey (std)	0
Dark grey shunt 0.1%	2
<b>SPECIAL EXECUTION</b>	
Not available	0
Conformal coating	3

# CONNECTIONS



# DIMENSIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# J5

- INDICATOR-TRANSMITTER
- STRAIN GAUGE INPUT FOR MELT PRESSURE AND LOAD CELLS



## FEATURES

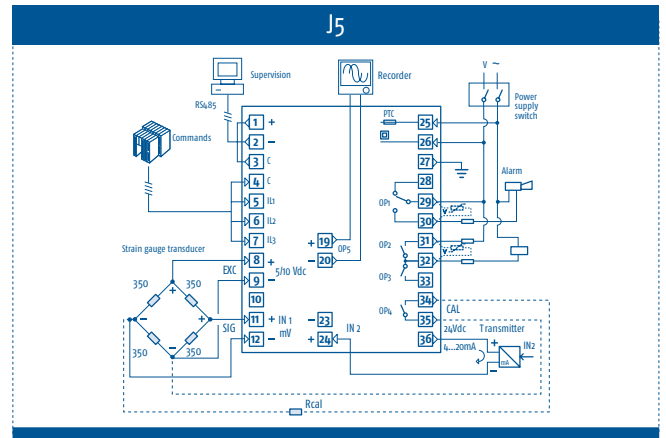
<b>DISPLAY</b>	J5
Single	5 digit programmable as red or green, h 15.5 mm
<b>INPUTS</b>	
Main input (IN1)	0...20/50/100 mV, 0...1/5/10 V, 0/4...20 mA, strain gauge: from 350 Ω, with bridge excitation 5 V or 10 V
Auxiliary input (IN2)	0/4...20 mA or 0/1...5 V, 0...10 V
Digital inputs	3, logic type not isolated
Accuracy	0.1% ±1 digit (for mA and mV)
<b>OUTPUTS</b>	
Up to 5	OUT 1: Relay SPDT, 2A/250Vac (4A/120Vac) for resistive loads OUT 2: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 3: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 4: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 5: 0/4...20 mA for inputs retransmission
Auxiliary power supply	24 Vdc (±20%)/30 mA max. for external transmitter
Outputs configuration	4, programmable as alarm
<b>FUNCTIONAL</b>	
Special functions	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying IN1, IN2, CIN (conditioned input), Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function
Update measurement time	20 ms
Sampling rate	0.5 sec
Signal retransmission	Measurement
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200, 2400, 4800, 9600, 19200, 36400, 56800 baud
<b>GENERAL</b>	
Power supply	100...240Vac (-15...+10%) or 24Vac (-25...+12%) or 24Vdc (-15...+25%) (50/60 Hz)
Power consumption	5 VA approx.
Dimensions / Weight	96 x 48 mm (1/8 DIN), depth 110 mm / 250g approx.
Mounting	Flush in panel in 92 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm <sup>2</sup> (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	5... 95% RH without condensation
Conformity	EN61010-1 (IEC1010-1)

# HOW TO ORDER

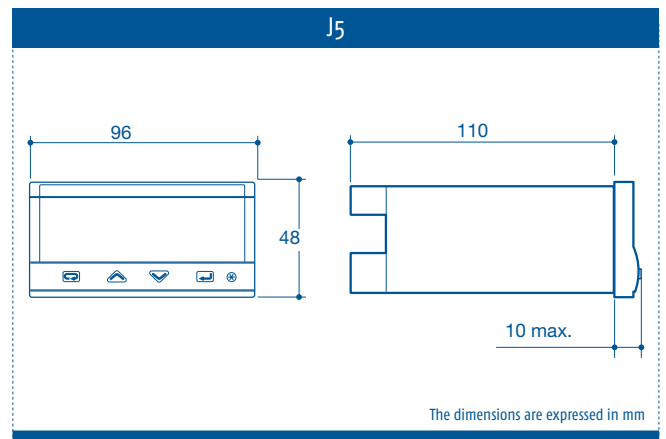
To compose the part number, pls. choose one of the option for each variable

J5	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac	3
24 Vac/Vdc	5
<b>OUT 1, 2, 3 E 4</b>	
Relay-Relay	7
Relay-Relay-Relay-Relay	9
<b>SERIAL COMMUNICATION</b>	
Not available	0
RS485	5
<b>SPECIAL FUNCTIONS</b>	
Not available	0
OUT 5 retransmission	1
Input IN2	2
OUT 5 retransmission+ IN2	5
<b>SPECIAL FUNCTIONS</b>	
Not available	0
<b>INSTRUCTION MANUAL</b>	
English	8
Not available	9
<b>SPECIAL EXECUTION</b>	
Not available	0
Conformal coating	3

# CONNECTIONS



# DIMENSIONS



The dimensions are expressed in mm





# ACQUISITION AND DATA RECORDING

Nothing is so  
*easy*





# I/O MODULES



## Data acquisition modules in Modbus RTU and CANOpen

Many typologies of digital and analogue inputs and outputs.

## I/O MODULES

FEATURES		AI		
		02UI	04RT	08TC
Dimensions (mm)	Single module (76 x 110 mm)	•	•	•
Input channels		2	4	8
Output channels				
Type of inputs	Thermocouples J, K, N, S, R, T	•	•	•
	RTD PT100 and PT1000	•	•	
	Current (mA)	•		
	Voltage (mV)	•	•	•
	Voltage (V)	•		
	Potentiometer	•		
	Dual polarity	•		
Resolution 16 bit		•	•	•
Accuracy 0.1%		•	•	•
Power supply 24 Vdc		•	•	•
Fast acquisition		•		
CANOpen protocol		•	•	•
Modbus RTU protocol			•	•
CE certification + UL approval (listed)		•	•	•

FEATURES		DI			
		16LV	16HV	32LV	08TS
Dimensions (mm)	Single module (76 x 110 mm)	•	•		•
	Dual module (152 x 110 mm)			•	
Input channels		16	16	32	8
Output channels					
Inputs	24 Vdc	•		•	•
	120 Vac		•		
	24 Vdc				•
Outputs	250 Vac				
	Relay				
Outputs 2A					
Outputs 6A					
Power supply 24 Vdc		•	•	•	•
CANOpen protocol		•	•	•	•
Modbus RTU protocol		•			•
CE certification + UL approval (listed)		•	•	•	•

FEATURES		TDA	
		04	08
Dimensions (mm)	4 Din modules (70 x 85 mm)	•	•
Input channels		4	8
Inputs	PTC, NTC or Pt1000		•
	4...20 mA	•	
	0... 10 V	•	
	Digitals	•	•
Power supply 24, 110, 230 Vac		•	•
CE certification		•	•

AI		AO	
08HL	08DP	08HL	08DP
•	•	•	•
8	8	8	8
•	•	•	
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•

DM			DO						
16TS	32TS	16TS	16TP	32TR	32TS	04RL	04TX	08RL	
•	•	•	•	•	•	•	•	•	
8	16							•	
8	16	16	16	32	32	4	4	8	
•	•	•	•		•				
•	•	•	•		•		•		
			•	•		•		•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	
•	•	•	•	•	•	•	•	•	

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# D7/D8/D9

- ANALOGUE AND DIGITAL ACQUISITION MODULES
- ANALOGUE UNIVERSAL TRANSMITTER WITH ALARMS
- RS485

## FEATURES



INPUTS	D7	D9	D8
Number of inputs	1	2	--
Input configuration	Thermocouples: L/J/E (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32... 3272°F), Ni-NiMo (0... 1100°C / 32... 2012°F), W3, W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 (-99.9... 300.0°C / -99.9... 572.0°F and -200... 600°C / -328... 1112°F) Linear signals: 0/10...50 mV; 0/4...20 mA (shunt) Infrared sensors or programmable on special ranges (custom)		--
Accuracy	0.25% ±1 digit (thermoelements); 0.1% ±1 digit (mA and mV)		--
Digital inputs	1 voltage digital input	1 voltage digital input (+ 2 configurables)	6 digital inputs in voltage or for free voltage contacts, in 2 groups optoisolated (1 and 2 in Hz)
OUTPUTS			
Outputs OUT1-OUT2	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac)/SSR, 1A res./250Vac, logic 0/5 Vdc, not insulated	--
Outputs OUT3-OUT4	--	OUT3 and OUT4: logic 0/5 Vdc, not insulated	--
Output OUT5	OUT5: 0/4... 20 mA, 15V max.	--	--
Outputs functions	--	NOT	NOT, PWM, Hold
Auxiliary supply	+24dc, ±20%, 30 mA max. - to supply an external transmitter	--	--
Outputs configuration	Up to 3 alarms	Up to 4 alarms	--
Alarm functions	Sensor break, Latching/Blocking, Loop break, Heater break associated to the timer (if available)		--
FUNCTIONAL			
Setpoint	Reference value	Reference value	--
Special functions (optionals)	--	--	NOT, Toggle, Flip-Flop
Front indication LEDs	3 red (DO) + 1 green (PWR/COM)	4 red (DO) +1 green (PWR/COM)	6 yellow (DI), 2 red (DO), 1 green (PWR/COM)
Unit of measurement	°C/°F or engineering units (-999... 9999)		--
Signal retransmission	Measure or setpoint retransmission (reference value)	--	--
Serial communication	Isolated RS485 with Modbus RTU protocol		
Baud rate	RS 485 (MASTER or SLAVE) 1200, 2400, 4800, 9600 bit/s 3 wires		
Parameters access	Through serial line and supervision software		
GENERAL			
Power supply	24Vac (-25...+12%), 24Vdc (-15...+25%) (50/60Hz)		
Power consumption	4 VA max.	5 VA max.	4 VA max.
Dimensions	22.5 x 99, depth 114.5 mm		
Weight	155 g approx.	156 g approx.	152 g approx.
Connections	PWS and COM: 0.08... 1.5 mm <sup>2</sup> (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm <sup>2</sup> (AWG24 - AWG12)		
Mounting	On OMEGA DIN A rail		
Protection degree	IP20 (terminal block)		
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)		
Operating humidity	5... 95 RH% without condensation		
Conformity	EN61010-1 (IEC1010-1)		

Note: these modules can be inserted into Profibus DP and DeviceNet nets, together with a DX module, with the possibility of automatic reconfiguration.

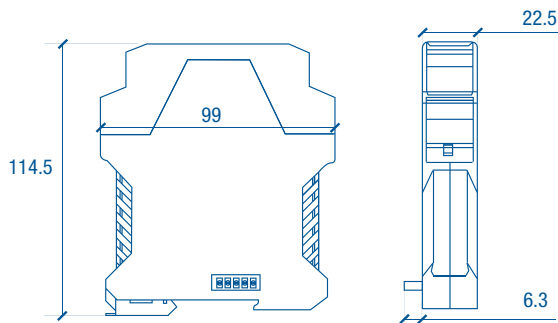
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

D7/D8/D9	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	5
<b>OUT 1 AND OUT 2</b>	
Relay (D7 only)	0
Relay-Relay	1
Relay-Logic (D8 and D9 only)	2
Logic-Logic (D8 and D9 only)	3
Triac-triac (D8 and D9 only)	4
Triac-Logic (D8 and D9 only)	5
<b>SERIAL COMMUNICATION</b>	
RS485	5
<b>OPTION 1</b>	
Not available	0
Continuous output (D7 only)	5
<b>SPECIAL FUNCTIONS</b>	
Not available	0
<b>INSTRUCTION MANUAL</b>	
Italian / English	0
Not available	9
<b>OPTION 2</b>	
Shunt 1% (D7 and D9 only)	0
Shunt 0.1% (D7 and D9 only)	2
<b>OPTION 3</b>	
Not available	0
Conformal coating	3

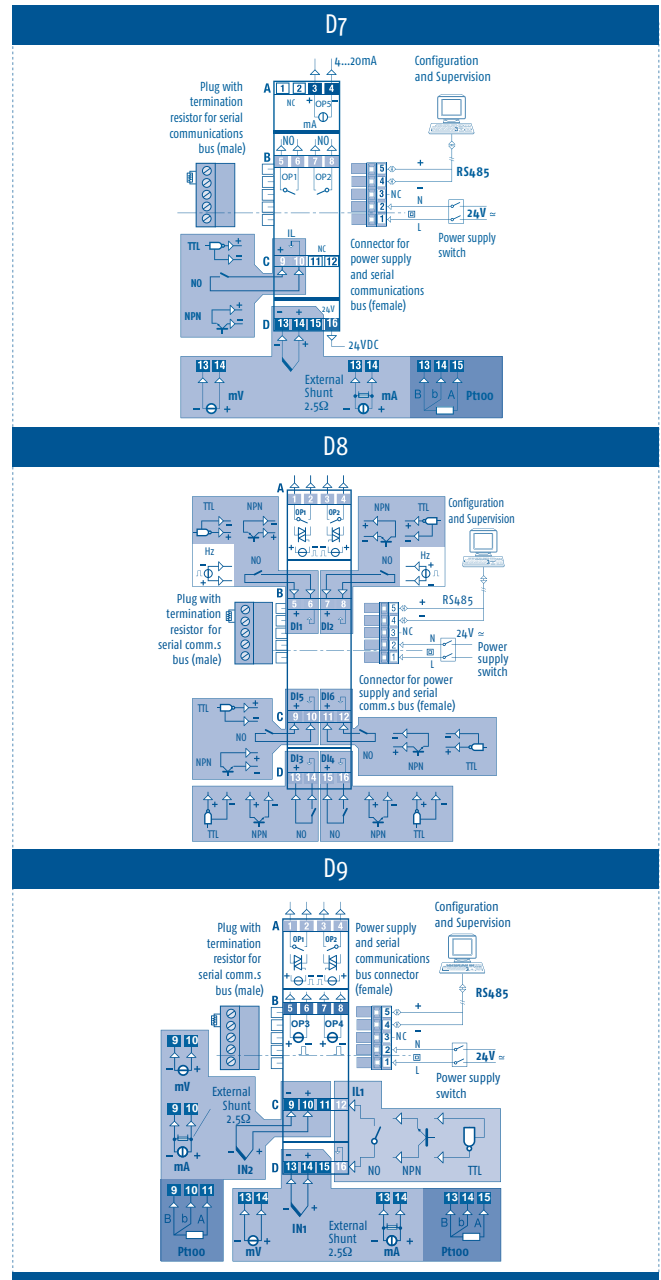
# DIMENSIONS

D7 / D8 / D9



The dimensions are expressed in mm

# CONNECTIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# ANALOGUE I/O

- ANALOGUE ACQUISITION MODULES
- UP TO 8 INPUTS AND 8 OUTPUTS



## FEATURES

INPUTS	AI-02UI	AI-08TC	AI-04RT	AI-08HL	AI-08DP	A0-08HL	A0-08DP	
Number of inputs	2	8	4	8				
Type of inputs (see table on next page for input ranges)	Universal: RTD, TC, mA, mV, V, potentiometer	TC, mV	RTD, TC, mV	mA, V	mA, V dual polarity	--		
Accuracy	0.1%							
OUTPUTS								
Number of outputs						8		
Type of outputs						mA, V	V dual polarity	
FUNCTIONAL								
Modbus protocol	--	Available			--	Available	--	
CANOpen protocol	Available							
Serial communication	RS 485, with dual connector RJ45							
Resolution	16 bit							
Isolation class	2500 V	800V						
Acquisition time	20 ms	60 ms	120 ms	10 ms	20 ms			
GENERAL								
Power supply	24Vdc (-15...+25%) (50/60Hz)							
Power consumption	4 VA max.							
Dimensions / Weight	110 x 66 mm, depth 76 mm / 220 g approx.							
Mounting	On OMEGA DIN A rail							
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals							
Protection degree	IP20 (terminal block)							
Operating / storage temperature	0... 55°C / -20... 85°C (32... 131°F / -4... 185°F)							
Operating humidity	5... 95% RH% without condensation							
Conformity	EN 50081-2, EN 50082-2, EN 61010							



## HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
<b>ANALOGUE INPUTS</b>				
IO-CBAIo2UI	CANOpen	RTD, Tc, mA, mV, V, potentiometer	2	
IO-CBAIo4RT	CANOpen	RTD, Tc, mV	4	
IO-MBAIo4RT	Modbus	RTD, Tc, mV	4	
IO-CBAIo8TC	CANOpen	TC, mV	8	
IO-MBAIo8TC	Modbus	TC, mV	8	
IO-CBAIo8HL	CANOpen	mA, V unipolar	8	
IO-MBAIo8HL	Modbus	mA, V unipolar	8	
IO-CBAIo8DP	CANOpen	V dual polarity	8	
IO-MBAIo8HLTo-	Modbus	mA, V unipolar, Conformal coating	8	
<b>ANALOGUE OUTPUTS</b>				
IO-CBAOo8HL	CANOpen	mA, V unipolar		8
IO-MBAOo8HL	Modbus	mA, V unipolar		8
IO-CBAOo8DP	CANOpen	V dual polarity		8

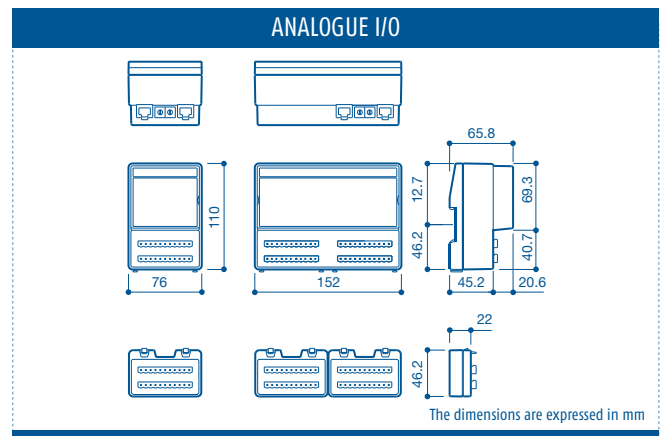
## ACCESSORIES

CABLES	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
POWER ADAPTORS	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
PLUGS	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
TERMINALS AND CONNECTORS	
APS2 TB2111	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

## INPUT RANGE

RANGE	
Thermocouples	LJ (-200... +600°C/-328... +1112°F), T (-200... +400°C/-328... +752°F), K (-200... +1370°C/328... +2498°F), N (0... +1300°C/32... 2372°F), S (0... +1760°C/ 32... +3200°F), R (0... +1600°C/32... 2912°F)
Thermoresistances	PT100/PT1000 (-200... +600°C/-328... +1112°F)
Linear signals	0...100 mV, 0...1000 mV, ±100mV, ±1000mV ±50 mV, ±300, ±1.0 V mA (0,4... 20 mA), V (0...10V)
Potentiometer	100...10K Ω

## DIMENSIONS



# DIGITAL I/O

- DIGITAL ACQUISITION MODULES
- UP TO 32 INPUTS AND 32 OUTPUTS
- RS485



## FEATURES

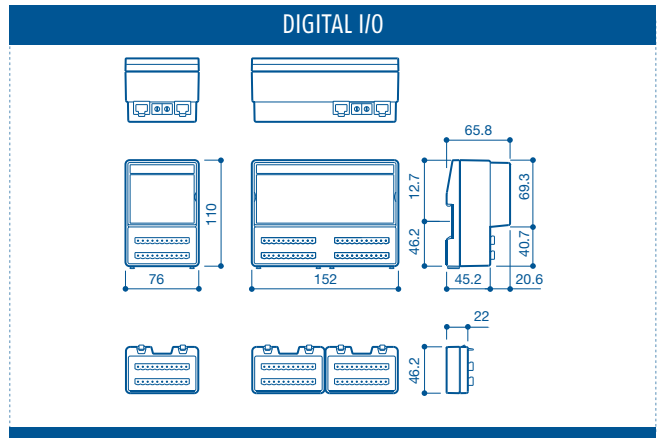
INPUTS	DI-16LV	DI-16HV	DI-32LV	DO-16TS	DO-16TP	DO-32TS
Number of inputs	16		32	--		
Type of inputs	24 Vdc	115 Vac	24 Vdc	--		
<b>OUTPUTS</b>						
Number of outputs	--			16	32	
Voltage	--			24 Vdc		
Current	--			500 mA	2 A	500 mA
<b>FUNCTIONAL</b>						
Modbus protocol	Available	--		Available	--	
CANOpen protocol	Available					
Serial communication	RS 485, with dual connector RJ45					
Isolation class	800 V	2500 V	800 V			
<b>GENERAL</b>						
Power supply	24Vdc (-15...+25%) (50/60Hz)					
Power consumption	4 VA max.					
Dimensions	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm
Weight	220 g		360 g	220 g		360 g
Mounting	On OMEGA DIN A rail					
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals
Protection degree	IP20					
Operating / storage temperature	0... 55°C / -20... 85°C (32... 131°F / -4... 185°F)					
Operating humidity	5... 95% RH% without condensation					
Conformity	EN 50081-2, EN 50082-2, EN 61010					

Note: through modules DX and DY, these instruments can be interfaced on Profibus, CANOpen and DeviceNet nets.

## HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
<b>DIGITAL INPUTS</b>				
IO-CBD16LV	CANOpen	24 Vdc PNP	16	
IO-MBD16LV	Modbus	24 Vdc PNP	16	
IO-CBD16HV	CANOpen	24 Vdc PNP	16	
IO-CBD132LV	CANOpen	24 Vdc PNP	32	
<b>DIGITAL OUTPUTS</b>				
IO-CBD016TS	CANOpen	24 Vdc 0.5 A		16
IO-MBD016TS	Modbus	24 Vdc 0.5 A		16
IO-CBD016TP	CANOpen	24 Vdc 2 A		16
IO-CBD032TS	CANOpen	24 Vdc 0.5 A		32

## DIMENSIONS



## ACCESSORIES

<b>CABLES</b>	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
<b>POWER ADAPTORS</b>	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
<b>PLUGS</b>	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
<b>TERMINALS AND CONNECTORS</b>	
APS2 TB211	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# DIGITAL I/O

- DIGITAL ACQUISITION MODULES
- UP TO 16 INPUTS AND 16 OUTPUTS
- RS485



## FEATURES

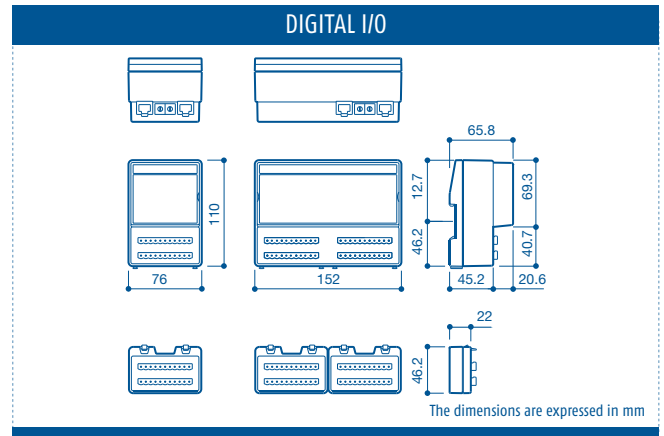
INPUTS	DO-04RL	DO-04TX	DO-08RL	DM-08TS	DM-16TS	DM-32TS
Number of inputs	--			8	16	
Type of inputs	--			24 Vdc		
<b>OUTPUTS</b>						
Number of outputs	4		8		16	
Relay	250 Vdc Relay	24 Vdc Relay	250 Vac Relay	--		
Voltage	--		--		24 Vdc	
Current	2 A (SPST) 1 A (SSR)	6 A	2 A (SPST) 1 A (SSR)	500 mA		
<b>FUNCTIONAL</b>						
Modbus protocol	--			Available	--	
CANOpen protocol	Available					
Serial communication	RS 485, with dual connector RJ45					
Isolation class	4000 V	800 V	4000 V	800 V		
<b>GENERAL</b>						
Power supply	24 Vdc (-15...+25%) (50/60 Hz)					
Power consumption	4 VA max.					
Dimensions	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm	110 x 76 mm, depth 76 mm		152 x 110 mm, depth 66 mm
Weight	220 g		360 g	220 g		360 g
Mounting						
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals
Protection degree	IP20					
Operating / storage temperature	0... 55°C / -20... 85°C (32... 131°F / -4... 185°F)					
Operating humidity	5... 95% RH% without condensation					
Conformity	EN 50081-2, EN 50082-2, EN 61010					

Note: through modules DX and DY, these instruments can be interfaced on Profibus, CANOpen and DeviceNet nets.

## HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
<b>RELAY OUTPUTS</b>				
10-CBD004RL	CANOpen	SPST-NO 2 A		4
10-CBD004TX	CANOpen	SPST-NO 6 A		4
10-CBD008RL	CANOpen	4 SPST-NO 2 A + 4 SPDT 2 A		8
<b>DIGITAL I/O</b>				
10-CBDM08TS	CANOpen	24 Vdc PNP - 24 Vdc 0.5 A		8
10-MBDM08TS	Modbus	24 Vdc PNP - 24 Vdc 0.5 A		8
10-CBDM16TS	CANOpen	25 Vdc PNP - 24 Vdc 0.5 A	8	8
10-CBDM32TS	CANOpen	26 Vdc PNP - 24 Vdc 0.5 A	16	16

## DIMENSIONS



## ACCESSORIES

<b>CABLES</b>	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
<b>POWER ADAPTORS</b>	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
<b>PLUGS</b>	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
<b>TERMINALS AND CONNECTORS</b>	
APS2 TB211	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

# TDA

- ANALOGUE AND DIGITAL ACQUISITION MODULES
- RS485
- 4 OR 8 INPUTS



## FEATURES

INPUTS	TDA04	TDA08
Digital inputs	4 digital inputs for free voltage contacts	
4 analogue inputs	0/4...20 mA or 0/2...10 V	--
8 probe inputs	--	8x Thermistors PTC KTY 81-121 (990Ω at 25°C) or NTC 103AT-2 (10KΩ at 25°C) or 8x Thermoresistances Pt1000 (1KΩ at 0°C)
Accuracy	±0.5% fs	
OUTPUT		
One	1 Relay SPST-NO (5A-AC1, 2 A-AC3/250 Vac)	
FUNCTIONAL		
Serial communication	RS485 optoisolated – MODBUS RTU (JBUS) protocol	
Baud rate	Programmable between 1200 and 38400 baud	
Sampling rate	2 samples per second	
Range	350 points	According to the used probe
GENERAL		
Power supply	24, 115, 230 Vac ±10% (50/60 Hz)	
Power consumption	5 VA approx.	
Dimensions / Weight	4 DIN rail module 70 x 84 x 60 mm / 210 g approx.	
Connections	Screw terminal block 2.5 mm <sup>2</sup>	
Mounting	On OMEGA DIN A rail	
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)	
Operating humidity	30...95 RH% without condensation	
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)	

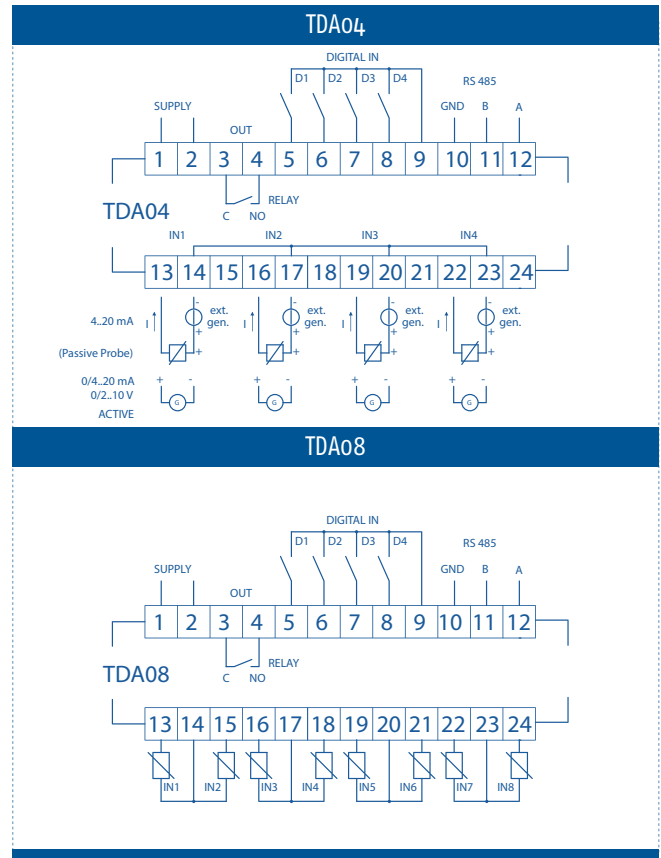
# HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

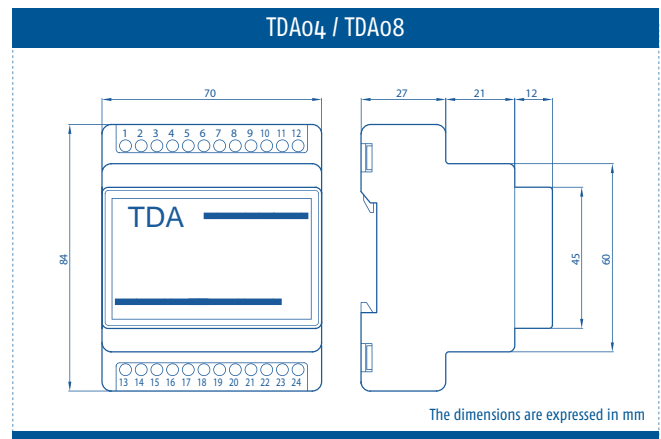
TDA04	CODE
<b>INPUT</b>	
0/2...10V	W
0/4...20 mA	I
<b>POWER SUPPLY</b>	
24 Vac	A
115 Vac	C
230 Vac	D

TDA08	CODE
<b>INPUT</b>	
PT1000	P
NTC	N
PTC	E
<b>POWER SUPPLY</b>	
24 Vac	A
115 Vac	C
230 Vac	D

# CONNECTIONS



# DIMENSIONS







# SUPERVISION



## AutoLink, DX and DY Gateways

SCADA Software for the centralized management and the supervision of plants.  
Protocol converters for the integration of the Modbus RTU instrumentation with other field bus.

## SUPERVISIONE

		DX	DY	DY5121
Dimensions (mm)	Deltadue module (22.5 x 99 mm)	•	•	
	4 DIN rail module (70 x 85 mm)			•
Protocol	Modbus RTU	•		
	CANOpen		•	
	Profibus DP slave	•		
	DeviceNet	•		
	Modbus TCP		•	•
	Multi master	2	8	4
Functions	Backup instruments (max.32)	•		
	Data transfer (binding)	•		•
	E-mail and SMS			•
	Webserver			•
Power supply 24 Vac/Vdc		•	•	
CE certification + UL approval (listed)		•	•	

INDUSTRIAL  
CONTROLLERS

ADVANCED  
PROGRAMMER  
CONTROLLERS

DIN RAIL  
MOUNTING  
CONTROLLERS

THERMOSTATS  
ANALOGUE  
CONTROLLERS

SPECIAL  
CONTROLLERS  
AND "CUSTOM"

PAC SYSTEMS

PRE-  
PROGRAMMED  
SYSTEMS

PLC AND  
OPERATOR  
PANELS

TIMERS  
COUNTERS  
POWER LIMITERS

INDICATORS

I/O MODULES

**SUPERVISION**

COMBUSTION  
CONTROL

ACCESSORIES

# AUTOLINK

• SUPERVISION AND DATA ACQUISITION SOFTWARE



## FEATURES

### HARDWARE AND SOFTWARE

Hardware	Pentium II, 512 MB RAM, CD rom, resolution 800x600
Supported OS	Windows 95, 98, 2000, NT, XP, Vista, 7

### COMMUNICATIONS

Interfaces	Serial lines, USB (with adapters), Ethernet
Drivers	Modbus RTU/ASCII, Modbus TCP, RTU Remote /ASCII Remote - Allen-Bradley Df1 Full Duplex Protocol For (Plc 3 and Plc 5), Slc 500 - AVEBus - Data Stream - Decom Contrex - Eurotherm Bisynch ASCII - Gefran - Cencal - Idec Izumi - Klockner Moeller Sucom - (A and A for Ps4) - Mitsubishi Fr-Cu03 - ODBC Client - Omron (Fins, Fins in Host Link, Sysmac) - OPC Client - Red Lion PAX-1/8 DIN Counter/Rate Meter - Saia (P800 and S-Bus) - Siemens MPI, Prodrive MPI Mini, Plc Simatic S5 - S7EV2001, Profibus Mater DP - (Tecmint HTE), Profibus MPI and S7 (Applicom), Profibus PPI S7 200 (Applicom), PPI S7 200 (Adapter) - Interconnections TCP/IP (Master/Slave) - Raw ASCII Output - Other available drivers

### UNIQUE FUNCTIONALITIES

GammaDue, DeltaDue, SigmaDue	Device autorecognition and project automatic creation (Autolink QuickDIN)
TLK, K, R, Z, Y, X, KM, W	Device autorecognition and project automatic creation (W-Tec)

### DATABASE AND FUNCTIONALITIES

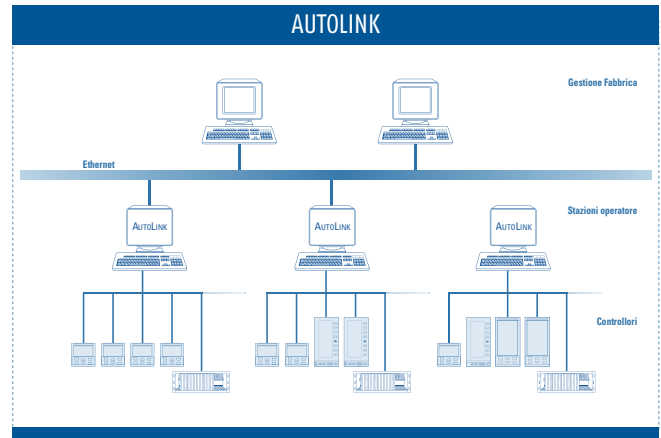
Number of variables	128, 256, 2048, 62536
Type of variables	Numerics, digitals, strings, composites
Alarms	Unlimited
Trend	Binary, DBF and CSV file types
Access levels	32
Synoptic pages	Unlimited
Alarm pages	Unlimited
Trend pages	Unlimited, max 10 traces per window
Recipes	Unlimited and customizables
Report	Up to 999
Auxiliary functions	Events schedulings, remote control, macros, multilanguages, SMS

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

<b>DEVELOPMENT AND RUNTIME SOFTWARE</b>	
FOR DELTADUE, GAMMADUE AND SIGMADUE I/O MODBUS INSTRUMENTS ONLY MAX 32 INSTRUMENTS	
LSALINKDIN/USB	DEVELOPMENT/RUNTIME KEY MAX. 32 INSTRUMENTS DIN W-L
<b>DEVELOPMENT AND RUNTIME SOFTWARE MAX. 128 VARIABLES</b>	
LSALINKDVS/USB	DEVELOPMENT/RUNTIME KEY MAX. 128 VARIABLES DVS-W-ES
<b>DEVELOPMENT AND RUNTIME SOFTWARE MAX. 2048 VARIABLES</b>	
LSALINKDVM/USB	DEVELOPMENT/RUNTIME KEY MAX. 2048 VARIABLES DVM-W-EM
<b>DEVELOPMENT AND RUNTIME SOFTWARE MAX. 65536 VARIABLES</b>	
LSALINKDVX/USB	DEVELOPMENT/RUNTIME KEY MAX. 65536 VARIABLES DVX W-EX
<b>RUNTIME SOFTWARE</b>	
LSALINKRNT/USB	RUNTIME KEY MAX. 65536 VARIABLES RNT W-R

## CONNECTIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

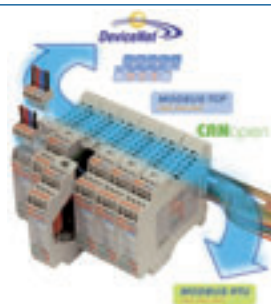
**SUPERVISION**

COMBUSTION CONTROL

ACCESSORIES

# DX/DY

• PROTOCOL GATEWAYS



## FEATURES

FUNCTIONAL	DX	DY
Manager functions	Connected modules (max. 32) configuration and parameters data backup Hot swapping, automatic configuration and setup of the replaced modules.	--
Gateway functions	RS232/485 converter Protocol converter between Profibus DP SPC3, DeviceNet and Modbus RTU	Binding (data transfer) Protocol converter between CANOpen or Modbus TCP to Modbus RTU
WebSCADA functions	--	Instruments template 30 pages of 20 variables 64 alarms (e-mail and SMS with external modem, GSM or GPRS). A 64 variables log file (CSV), can be periodically send by e-mail Trend graphics (if JAVA is installed)
Communications ports	RS485 Modbus RTU master protocol (max.19200 baud) RS485, RS232 Modbus RTU slave protocol, insulated (max.38400 baud) RS485 Modbus RTU slave protocol, insulated (max. 57600 baud) RS485 Profibus DP slave (max. 12 Mb/s)	RS232 standard ( for instrument configuration only) Ethernet 10/100 Mbaud, RJ45 female connector RS485 Modbus RTU (max. 115 K baud) RS485 CANOpen (max. 1 Mb/s)
<b>GENERAL</b>		
Power supply	24Vac (-25...+12%), 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	4VA max.	
Dimensions / Weight	22.5 x 99 mm, depth 114.5 mm / 200 g approx.	
Mounting	On OMEGA DIN A rail	
Connections	PWS and COM: 0.08... 1.5 mm <sup>2</sup> (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm <sup>2</sup> (AWG24 - AWG12)	
Protection degree	IP20 (terminal block)	
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)	
Operating humidity	5... 95% RH% without condensation	
Conformity	CE, UL, CSA, EN61010-1 (IEC1010-1)	CE, EN61010-1 (IEC1010-1)

## HOW TO ORDER

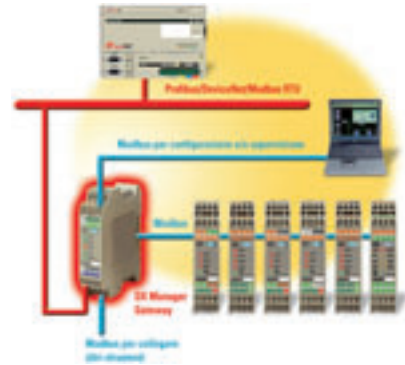
To compose the part number, pls. choose one of the option for each variable

DX	CODE
Gateway/Manager for Delta2/Gamma2 series	
<b>POWER SUPPLY</b>	
24 Vac/Vdc	5
<b>NUMBER OF INSTRUMENTS IN BACKUP</b>	
0 Instruments	0
4 Instruments	1
8 Instruments	2
16 Instruments	3
32 Instruments	4
<b>FIELD BUS COMMUNICATION</b>	
No fieldbus	0
DeviceNet	1
ModBus	5
Profibus DP	7
<b>OPTION 1</b>	
Not available	0
<b>SPECIAL FUNCTIONS</b>	
Not available	0
<b>INSTRUCTION MANUAL</b>	
Italian / English	0
Not available	9
<b>OPTION 2</b>	
Not available	0
<b>OPTION 3</b>	
Not available	0
Conformal coating	3

DY	CODE
<b>PROTOCOL CONVERTER</b>	
CAN Open/Modbus RTU - Delta2 Case	DY5030
WEB+Modbus TCP/RTU - 4 DIN Case	DY5121
TCP/RTU Modbus multiple connection - Delta2 Case	DY5220
<b>INSTRUCTION MANUAL</b>	
Italian / English	0
English	8

## CONNECTIONS

DX

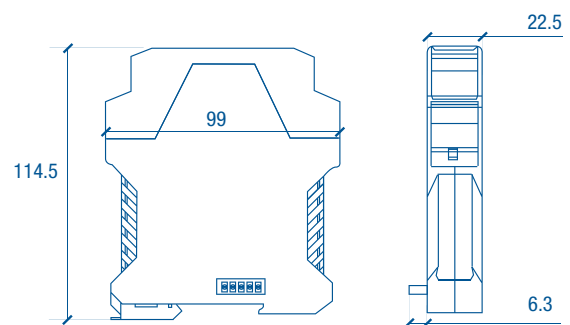


DY



## DIMENSIONS

DX / DY



The dimensions are expressed in mm





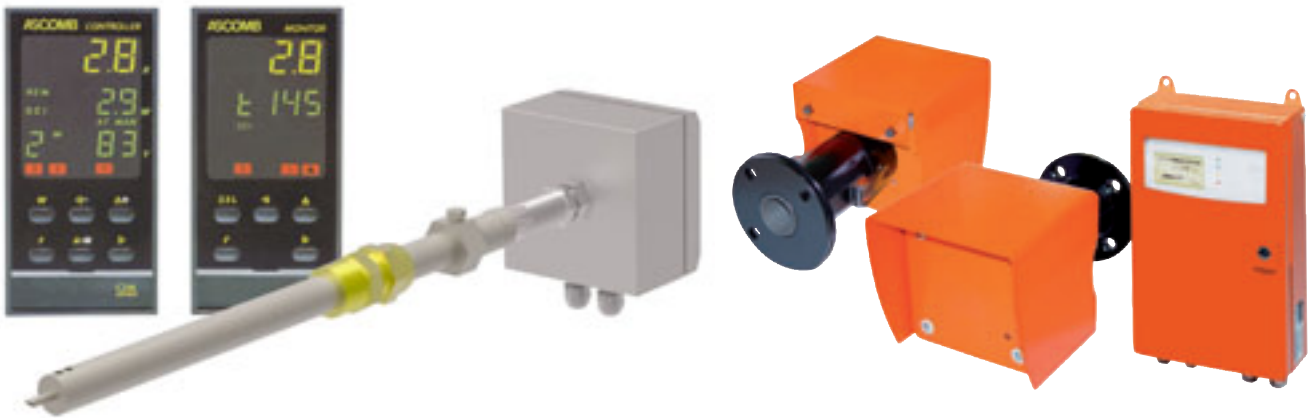
# EMISSION ANALYSIS AND COMBUSTION CONTROL



*Energy saving  
solutions*



# COMBUSTION CONTROL SYSTEMS



Combustion and monitoring systems in-situ for civil and industrial power plants composed of single or multiple boilers.

In-situ probes and analyzer for continuous measurement of oxygen, smoke/air temperature and carbon monoxide in the flue gases.

# Z02-3

• ZIRCONIUM OXIDE PROBE  
FOR O<sub>2</sub> MEASUREMENT



## FEATURES

GENERAL	Z02-3I/E
Measurement type	Direct and continuous oxygen content measurement in wet flue gas
Sensor	Heated zirconium oxide ZrO <sub>2</sub>
Max. flue gases temperature	600°C
Probe material	Stainless Steel AISI 316
Process connection	1" NPT with 1" NPT sliding nipple
Head protection	IP 66
Ambient temperature	-20°C... +55°C
Weight	2-3 Kg
Power supply	24 Vdc ±5%
Power consumption	1.2 A max.
Output	4... 20 mA active or passive output, not isolated Adjustable via jumpers
O <sub>2</sub> % Measuring range	0.3% ... 25%
Accuracy	±1%
Output range 4... 20mA	0... 20.96% , 0... 25% Adjustable with keys
Response time	< 5 sec.
Heating up time	15 min.
Calibration	1%... 20.9% Trimmer calibration in ambient air
Calibration interval	12 months
Error indicator	Relay DPST, NC+NO and red led on card Red LED on card in case of: O <sub>2</sub> % < 0.3% probe disconnection probe failure heater failure supply voltage failure
Sensor heating up time	<15s Automatic temperature control
Pluggable screw connectors	Power supply 0... 24V Output 4... 20mA Fault signal contacts Probe cabling (5 wires)
Operation interface	Red led, green led and 3 keys
Remote probe connection for extractive models	With supplied cable (3 m)

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

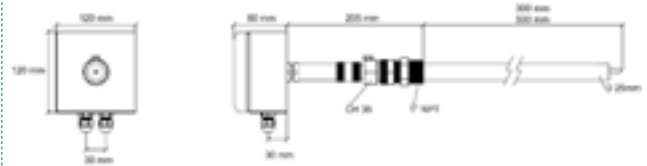
MODEL	DESCRIPTION
Z02-3I-300	IN-SITU ZIRCONIUM OXIDE PROBE WITH INTEGRATED ELECTRONIC L=300 MM
Z02-3I-500	IN-SITU ZIRCONIUM OXIDE PROBE WITH INTEGRATED ELECTRONIC L=500 MM
Z02-3E-300	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIC L=300 MM
Z02-3E-500	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIC L=500 MM
Z02-3E-C100	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIC L=100 MM

## ACCESSORIES

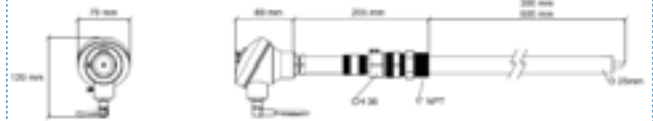
POWER ADAPTORS	
APS2 ALNDR75-24	POWER ADAPTOR 3.2 A
APS2 ALEDR12024	POWER ADAPTOR 5 A

## DIMENSIONS

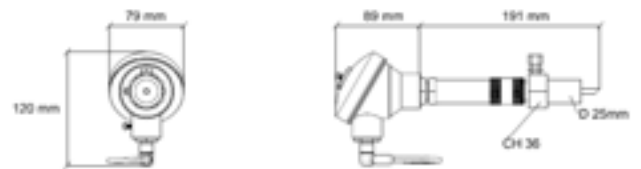
Z02-3I 300/500



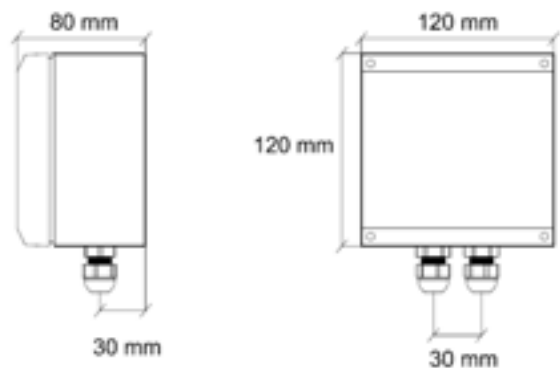
Z02-3E-300/500



Z02-3E-C100



REMOTE CASE FOR Z02-3E-300/500 AND Z02-3E-C100



# OXI/OXM/OXR

• INDICATOR, MONITOR AND CONTROLLER FOR COMBUSTION CONTROL



## FEATURES

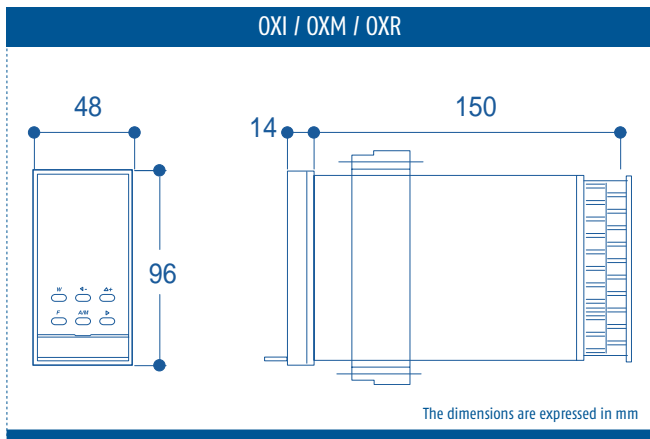
	OXI - INDICATOR	OXM - MONITOR	OXR - CONTROLLER
<b>INPUTS</b>	OXI - INDICATOR		
Main analogue input	Direct in mV from Z0 probe (0.2% ±1 digit) or 4... 20 mA linearized in the range 0.0... 20.9%		
Auxiliary analogue inputs	--	2 x 4... 20 mA from smoke/air temperatures	4... 20 mA from boiler load signal
Digital inputs and functions	2 logic inputs: Hold and Fail	3 logic inputs: Hold, Fail, fuel switch	4 logic inputs: Hold, Fail, fuel switch, Set Point mem., Auto/man.
<b>OUTPUTS</b>	OXI - INDICATOR		
Main analogue output	4... 20 mA/0... 10 V for O <sub>2</sub> %	4... 20 mA/0... 10 V programmable for O <sub>2</sub> %, T smokes, T air, CO <sub>2</sub> %, η, λ	4... 20 mA/0... 10 V control output
Auxiliary analogue output	--		4... 20 mA/0... 10 V for O <sub>2</sub> %
Alarm output	2 Relay NO, 250 Vac/5A programmable		3 Relay NO, 250 Vac/5 A programmable 1 Relay NO, 250 Vac/5 A Failure
<b>FUNCTIONAL</b>	OXI - INDICATOR		
Serial communication (optional)	RS485 (2 wires) Mod Bus, J Bus		
Baud rate	9600 baud max.		
<b>GENERAL</b>	OXI - INDICATOR		
Power supply	100... 240 Vac or 16... 28 Vac (50/60Hz) and 20...30 Vdc		
Power consumption	4 VA max.		
Dimensions / Weight	48 x 96 mm (1/16 DIN) - depth 150 mm		
Mounting	Flush in panel in 45 x 92 mm hole		
Front protection degree	IP 65, mounted on panel with gasket		
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)		
Operating humidity	35... 85 RH% without condensation		
Conformity	IEC801-2, 801-3, 801-4		

# HOW TO ORDER

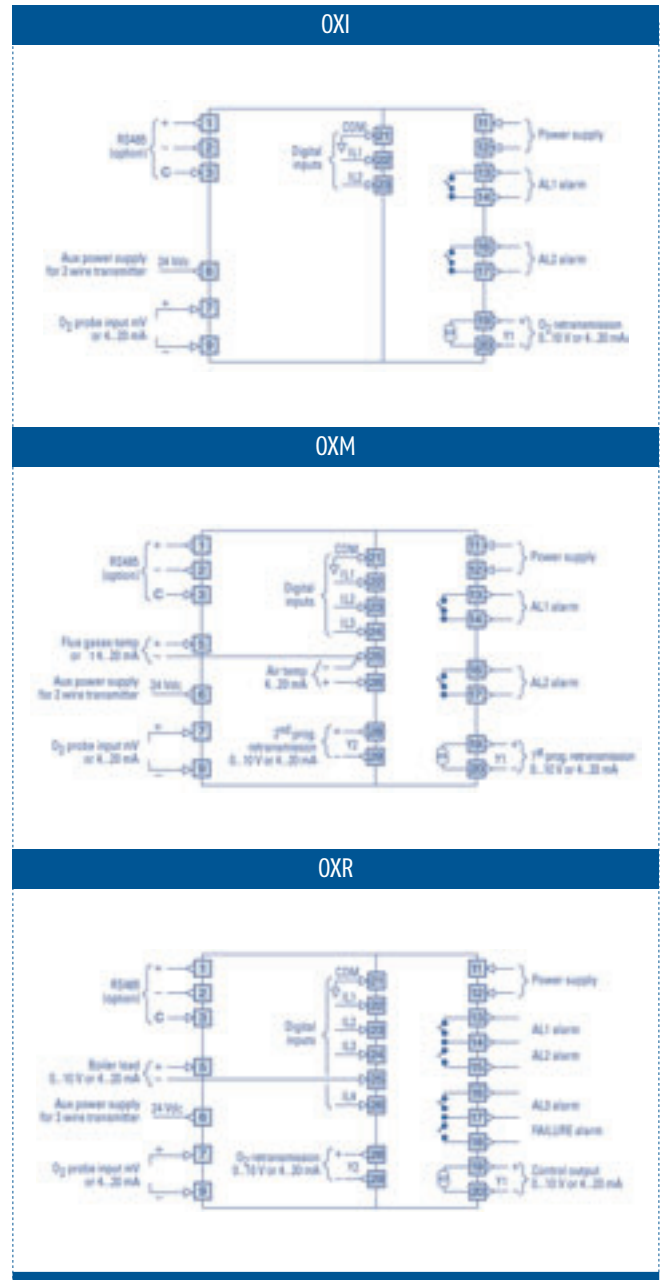
To compose the part number, pls. choose one of the option for each variable

OXI/OXM/OXR	CODE
<b>POWER SUPPLY</b>	
230 Vac	3
24 Vac/Vdc	5
<b>SERIAL COMMUNICATION</b>	
Not available	0
20 mA Current Loop Ascon Technologic protocol	1
20 mA Current Loop ModBus protocol	2
RS485 ModBus protocol	3
<b>OUT 1</b>	
4... 20mA retransmission	1
0... 10V retransmission	2
<b>OUT 2 (OXM AND OXR ONLY)</b>	
Not available	0
0... 20mA retransmission	1
0... 10V retransmission	2

# DIMENSIONS



# CONNECTIONS



- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# ZCO

• CO IN-SITU ANALYZER



## FEATURES

GENERAL	ZCO
Measuring distance (TX-RX)	0.5 m... 8.0 m (1.6... 26 ft)
Measuring range	Programmable between 0...500 ppm and 0...20000 ppm relative to 1 mt.
Accuracy	5% f.s.
Response time	5... 360 s
Flue gas temperature	≤ 250°C (higher temperatures available with extended calibration)
Ambient temperature	-20... +55°C
Processing unit ambient temperature	0... +55°C
1 analogue input for gas temperature	0/4... 20 mA/100
1 isolated analogue output for CO retransmission	0/4... 20 mA/500 Ω max.
Digital input for plant	max. load 5V, 2 mA
2 digital alarm outputs	Fail and threshold
Outputs current	Rating 1 A, 125 Vdc, 150 Vac max. (30 VA dc or 60 VA ac)
Power supply	115/230 Vac 50/60 Hz (selectable via jumper)
Power consumption	75 VA
Protection degree	IP 65
Connection cable between transmitter-receiver	15 m
Connection cable between receiver-processing unit	2 m + extension 5 m
Air instruments	Pressure: +2 mbar compared to the pressure at chimney Consumption: 30 m³/h max.
Options	Extension cable for connecting receiver-processing unit 10 or 15 meters (maximum distance receiver-processing unit without repeater: 17 meters) Optical alignment unit
Conformity	EMC specifications in accordance with EN 50081-1 and EN 50082-2
Certifications	Guidelines VDE EN 61010 (IEC 1010-1, VDE 0411), protection class 1, degree of protection IP65 CE (EMC EC Guideline 89/336 EWG, NSP 72/23/EWG TÜV Certification (Report no. 502/0741/96-20 081751)



## HOW TO ORDER

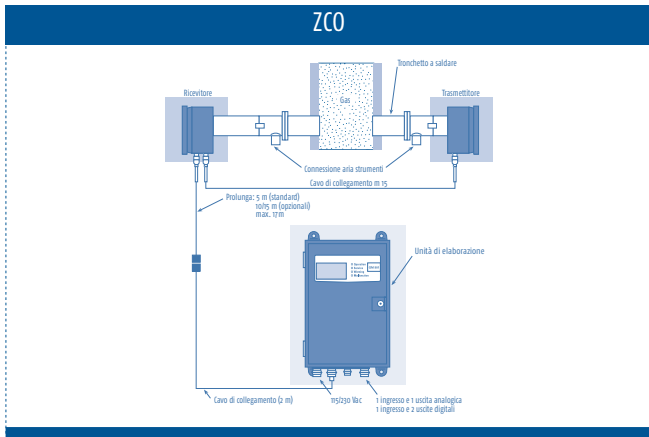
To compose the part number, pls. choose one of the option for each variable

CO ANALYSIS SYSTEM COMPOSITION	CODE
1 transmitter	ZCO-IGM-901-00
1 receiver	
1 processing unit with connecting cable 2 m	
1 extension cable between receiver-processing unit 5 m	
1 connecting cable between transmitter-receiver 15 m	
2 fixing flanges with connection for air instruments	
2 welding flanges connections	
2 kit special nuts and washers	
2 gasket kits	
1 manual	
1 calibration certificate	

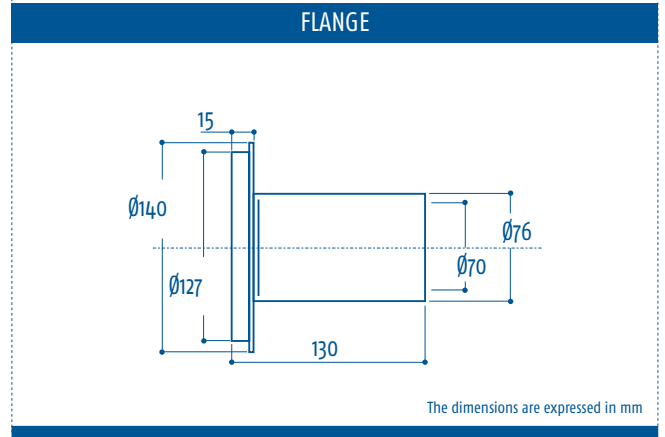
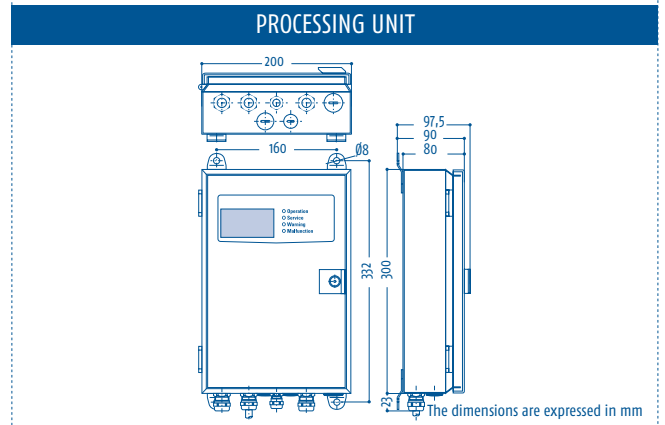
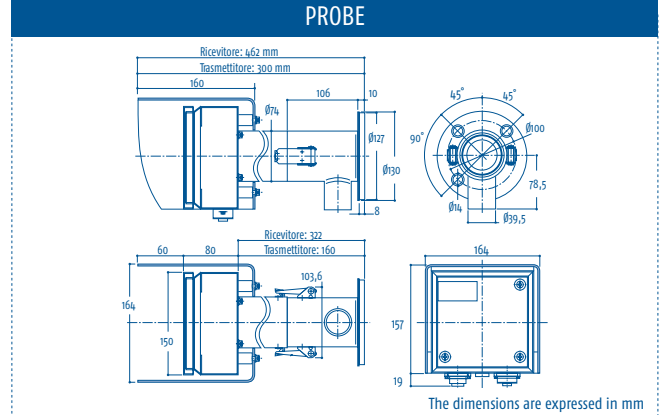
## ACCESSORIES

ACCESSORIES	CODE
Extension cable between receiver-processing unit 10 m	AZCPROLUNGA10M
Extension cable between receiver-processing unit 15 m	AZCPROLUNGA15M
Optical alignment unit	AZC2020436
Blower with air filter 0.55Kw 220-240 Vac 50/60 Hz single-phase	AZCSOFFIANTEMGT230
Blower with air filter 0.55Kw 400 Vac 50/60 Hz three-phase	AZCSOFFIANTEMGT400

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

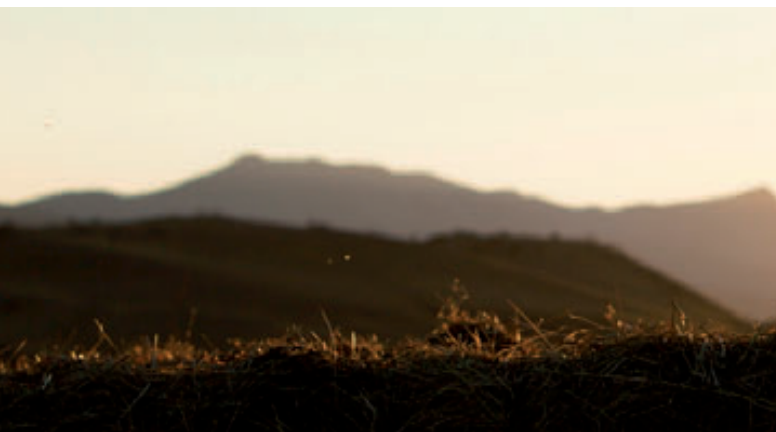
INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES



# ACCESSORIES

*flexible*  
solutions  
for every  
requirements





# ACCESSORIES



## To complete the range...

Together with our products we can also supply all the accessories of your applications: probes, sockets, gaskets, hole covers, programming keys, signal and protocol converters, front frame protections, external and current transformers, adapters and more...

# A01

• UNIVERSAL PROGRAMMING KEY  
FOR ASCON TECNOLOGIC INSTRUMENTS



## FEATURES

### FUNCTIONAL

#### A01

#### Functions

- The key is able to "dialogue" with:
- \* An instrument and to copy parameters from it to the key and vice versa
  - \* A second key and to integrally copy its parameters
    - \* A Personal computer
  - \* A Personal computer and an instrument

A01 is able to recovery data from failed instruments too and permits unlimited copies of configuration, error free.

#### Serial communication

Interface RS485, not insulated  
Interface TTL, not insulated

### GENERAL

#### Connections

TTL male connector: JST S 5B-PH-KL  
TTL female connector : SAMTEC SQT-105-02-L-S  
RS485 connector: Phoenix MC 1,5/3-G-3.5  
PWS connector : Dc power Jack 1.3mm  
USB connector type: Mini-USB  
Dip switch: 4 ways

#### Operating / storage temperature

0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)

#### Operating humidity

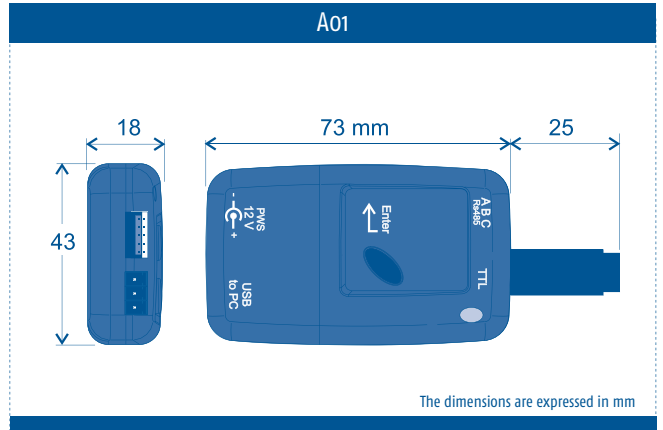
20... 95 RH% without condensation

## HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

A01	CODE
<b>CONNECTOR</b>	
5 pole for 78x35, DIN rail, 72x72 series	5
3 pole for 48x48 series	3
<b>POWER ADAPTOR</b>	
Available	E
Not available	-
<b>KIT FOR PC CONFIGURATION</b>	
USB cable and SW on Cdrom support	S
Without cable and SW	-

## DIMENSIONS



# A30

• SIGNAL CONVERTER FROM  
USB/RS232/RS485 TO RS485/TTL



## FEATURES

FUNCTIONAL	A30U	A30-
Interface type	From USB to RS485 auto powered From USB to TTL auto powered	From USB to RS485 From USB to TTL From RS232 to RS485 From RS232 to TTL From RS485 to RS485 From RS485 to TTL
TX/RX commutation	Automatic	
Baud rate	38400, automatic selection	
GENERAL		
Power supply	24 Vac/Vdc $\pm 10\%$ or 100... 240Vac (-15... +10%) (50/60 Hz)	
Power consumption	5 VA max.	
Dimensions / Weight	78x35 mm, depth 77,31 mm / 180 g	
Connections	PWS: screw terminal block (M3 screws, for cables $\Phi$ 0.25 to $\Phi$ 2.5 mm <sup>2</sup> or AWG 23 to AWG 14) RS232/RS485: screw terminal block (M2 screws, for cables $\Phi$ 0.25 to $\Phi$ 1.5 mm <sup>2</sup> or AWG 23 to AWG 16)	
Protection degree	IP20 (terminal block)	
Mounting	On OMEGA DIN A rail	
Operating / storage temperature	0... 50°C (32... 122°F) / -30... +70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	EN61326-1, EN61010-1	

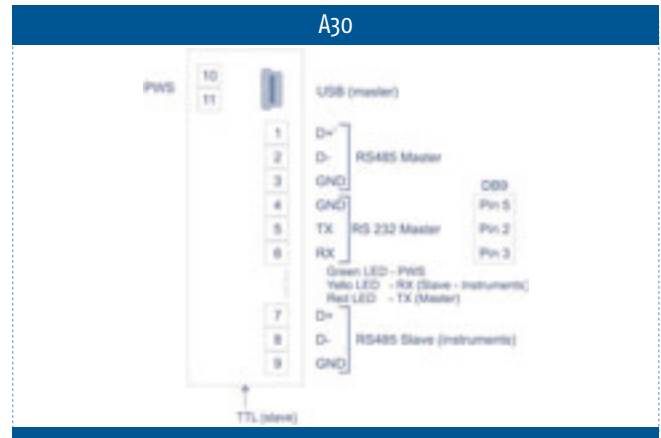


## HOW TO ORDER

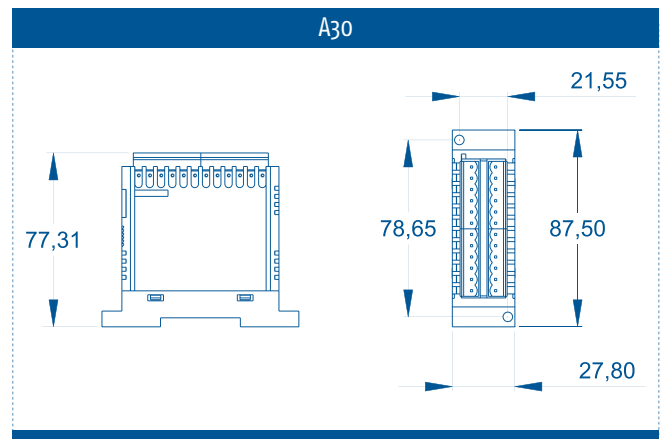
To compose the part number, pls. choose one of the option for each variable

A30	CODE
<b>MODEL</b>	
From USB to RS485 or TTL	U
From USB/RS232/RS485 to RS485 or TTL	-
<b>POWER SUPPLY</b>	
24 Vac/Vdc (A30 only)	L
100... 240 Vac (A30 only)	H
5V supplied by the USB port (A30U only)	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N

## CONNECTIONS



## DIMENSIONS



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# APS2 ALDR

## POWER SUPPLY FOR SIGMADUE SERIES



Power supply for instruments of sigmadue series.

CODE	DESCRIPTION
APS2 ALNDR75-24	Power supply 75W - 24Vdc - 3.2 A
APS2 ALEDR12024	Power supply 120W - 24Vdc - 5 A

# APS2 ATOPEH

## INDUSTRIAL SWITCHES



Industrial Ethernet switches.

CODE	DESCRIPTION
APS2 ATOPEH2006	6 port Ethernet Switch - Plastic case
APS2 ATOPEH2306	6 port Ethernet Switch - Metallic case
APS2 ATOPEH2308	8 port Ethernet Switch - Metallic case

# APS2 MODEM

## MODEM GSM/GPRS



Modem GSM/GPRS in metallic case.

CODE	DESCRIPTION
APS2 MODEMG100	Modem for OMEGA DIN A rail mounting Dimensions 73 x 54 mm, depth 25 mm Pws: 230 Vac - 12 Vdc E-GSM Quad-band 850/900/1800/1900 MHz ETSI GSM Phase 2+ Class 4 (2W@ 850/900 MHz) Class 1 (1W@ 1800/1900 MHz) Antenna GSM: SMA-F connector PWS: 5,5 - 32 Vdc (micro-FIT connector) RS232 + Audio conn. female 15-pin Sub-D

# BOX-AR

## ADAPTERS



Accessories used to adapt an instrument to an already existing hole, but with different mechanical measures.

CODE	DESCRIPTION
BOX 04175	Adapter for hole from 75 x 32 to 58 x 26 mm
BOX 1002	Adapter for hole from 64,4 x 32,4 to 34,3 x 15 mm
ARFQ96D	Adapter for hole from 96 x 96 to 48 x 96 mm
ARFQ96M	Adapter for hole from 96 x 96 to 48 x 48 mm

# CAL

## PROTECTION COVERS

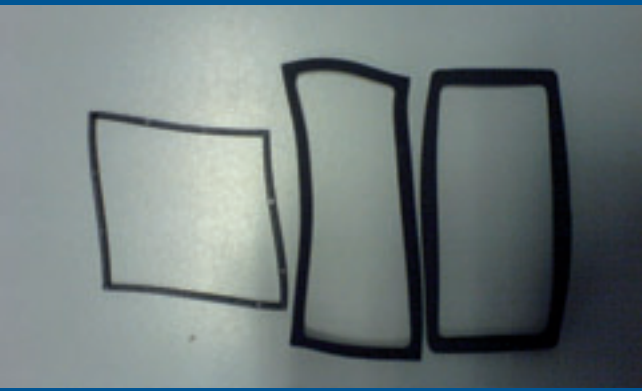


Protection covers made of transparent plastic or soft rubber to protect the front of the instruments. Some models assure the IP65 protection degree.

CODE	DESCRIPTION
CAL48x48-M	48 x 48 mm (soft rubber)
CAL48x48-IP65	48 x 48 mm (Plastic - IP65)
CAL48x96-I	48 x 96 mm (Plastic)
CAL48x96-IP65	48 x 96 mm (Plastic - IP65)
CAL72x72-I	72 x 72 mm (Plastic)
CAL96x96-I	96 x 96 mm (Plastic)
CAL96x96-IP65	96 x 96 mm (Plastic)

# GUAR

## EXTERNAL GASKETS FOR IP65 PROTECTION DEGREE



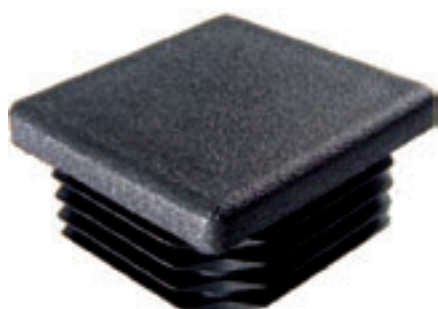
External gaskets in neoprene mousse able to increase the instrument front protection degree.

CODE	DESCRIPTION
GUAR 6993	IP65 gasket for 65 x 33 mm front
GUAR 6927	IP65 gasket for 75 x 33 mm (old style) front
GUAR 6925	IP65 gasket for 78 x 35 mm (new style) front
GUAR 6923	IP65 gasket for 48 x 48 mm front
GUAR 6973	IP65 gasket for 48 x 96 mm front
GUAR 6974	IP65 gasket for 72 x 72 mm front
GUAR 6926	IP65 gasket for 181 x 36 mm front

- INDUSTRIAL CONTROLLERS
- ADVANCED PROGRAMMER CONTROLLERS
- DIN RAIL MOUNTING CONTROLLERS
- THERMOSTATS ANALOGUE CONTROLLERS
- SPECIAL CONTROLLERS AND "CUSTOM"
- PAC SYSTEMS
- PRE-PROGRAMMED SYSTEMS
- PLC AND OPERATOR PANELS
- TIMERS COUNTERS POWER LIMITERS
- INDICATORS
- I/O MODULES
- SUPERVISION
- COMBUSTION CONTROL
- ACCESSORIES

# TAPPO

HOLE COVER



Accessories used to cover an existing hole that it's not possible to leave empty for aesthetic reasons or protection.

CODE	DESCRIPTION
TAPPO 33X75	Cover for 75 x 33 mm hole
TAPPO 48x48-AT	Cover and box for 48 x 48 mm hole
TAPPO 48x96	Cover for 48 x 96 mm hole
TAPPO 96x96	Cover for 96 x 96 mm hole

# TCTR

EXTERNAL POWER TRANSFORMERS



Accessories available with different ratio of transformation for different instrumentation demands.

CODE	DESCRIPTION
PRIMARY/SECONDARY POWER	
A	24/12 V
C	115/12V
D	230/12V
POWER	
3	3 VA
5	5 VA
10	10 VA

Other models available on request.

# TLCOV

EXTENDED FRONT PLATE



Accessories that make it possible to extend the front plate of instruments 78 x 35 mm to 185 x 38 mm. Available also hole plugs and switches to cover the side holes.

CODE	DESCRIPTION
INSTRUMENT TO BE EXTENDED	
XX	Part.no to define the instrument to be extended
POSITION OF THE INSTRUMENT	
D	Instrument mounted on the right side
S	Instrument mounted on the left side
HOLES DIMENSIONS	
--	Holes with $\varnothing$ 20 mm
-1	Left hole with $\varnothing$ 20 mm - Right hole with $\varnothing$ 22 mm
1-	Left hole with $\varnothing$ 22 mm - Right hole with $\varnothing$ 20 mm
11	Holes with $\varnothing$ 22 mm

# TR-AMP

## CURRENT TRANSFORMERS



Accessories available with different ratio of current for different instrumentation demands.

CODE	DESCRIPTION
TR-AMP-100/02	Ratio 100/0.2
TR-AMP-25/005	Ratio 25/0.05
TR-AMP-200/04	Ratio 200/0.4
TR-AMP-50/005	Ratio 50/0.05
TR-AMP-100/005	Ratio 100/0.05

# ZOC

## SOCKETS



Accessories available in different executions: to be soldered, with screws.

CODE	DESCRIPTION
ZOC 02203	Octal (IP20)
ZOC 02805	Octal
ZOC 02204	Undecal (IP20)
ZOC 02976	Octal with terminals to be soldered
ZOC 03110	Octal with screws

INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

# THERMOELEMENTS

- THERMOCOUPLES
- THERMORESISTANCES
- THERMISTORS
- CABLES AND ACCESSORIES

## PROBES AND ACCESSORIES

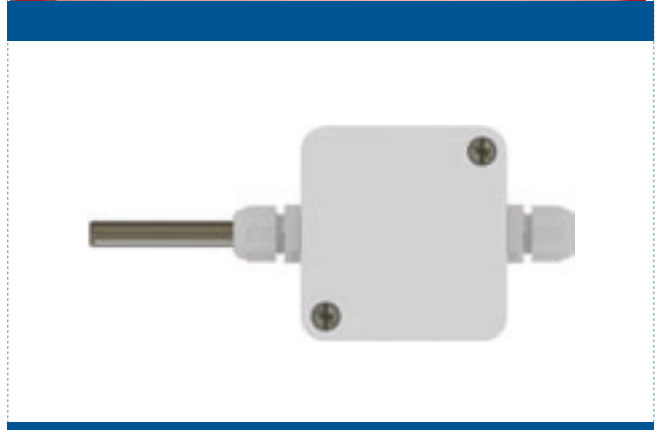
To choose correctly the probe is often decisive for the good result of the process control.

We, at Ascon Tecnologic puts at your disposition our experience and technical competence with the purpose to find the correct solution to every application problem...

Here following just some of the possible execution of our thermoelements:

- Probes for machines and small plants
- Flexible probes with MgO insulation
- High pressure probes with replaceable insertion
- High temperature probes with ceramic or methalic sleeve
- Accessories: nipple, thermowell, flanges and so on
- Compensated cables

Our technical team is avaiable to discuss your requirements for custom made products. Get in touch with us.



INDUSTRIAL CONTROLLERS

ADVANCED PROGRAMMER CONTROLLERS

DIN RAIL MOUNTING CONTROLLERS

THERMOSTATS ANALOGUE CONTROLLERS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

TIMERS COUNTERS POWER LIMITERS

INDICATORS

I/O MODULES

SUPERVISION

COMBUSTION CONTROL

ACCESSORIES

---

# ANALYTICAL INDEX

## A

A01	214
A30	216
AC3	118
APS2 ALDR	218
APS2 ATOPEH	218
APS2 MODEM	218
ANALOGUE I/O	184
AUTOLINK	196

## B

BOX-AR	219
BREWERY PAC	132
BWT40	152

## C

C1	32
CAL	219
CLIMA PAC	130
CU02	124

## D

D1	80
D2	80
D3	80
D7	182
D8	182
D9	182
DIGITAL I/O	186-188
DX	198
DY	198

## E

E51A	98
------	----

## G

GUAR	219
------	-----



## J

J1	172
J3	172
J5	174

## K

K30	70
K30	82
K31	64
K32	64
K38	64
K39	64
K31V	166
K38V	166
K48	66
K49	66
K48V	168
K85V	170
K85	68
K85	86
KM1	16
KM3	48
KM5	50
KR1	20
KRD3	60-84
KR3	60
KR5	64
KX1	18
KX3	52
KX5	54
KX6	56

## L

LIGHT PAC	134
-----------	-----

## M

M1	34
M2	36

M3	38
M4	38
M5	72
M81	116
MP02	120
MP-D1	122
MP-D2	122
MP-D4	122

## O

OPENPCS	142-144
OPMT	132
OXI	206
OXM	206
OXR	206

## P

P01	146
P04	140
P30	146
P32	146

## Q

Q1	42
Q3	42
Q5	74

## R

R38	22
-----	----

## T

TAPPO	220
TC34	156
TC49	156
TC73	156
TCC030	108
TCPDE M	102
TCTR	220

TDA	190
THERMOELEMENTS	222
TLCOV	220
TLI40	164
TLK33	110
TLK41	24
TLK42	24
TLK43	24
TLK72	26
TLK94	30
TLK96	28
TLZ35	86
TLZ35	94
TP34	158
TP49	158
TR-AMP	220
TT34	154
TT49	154
TT73	154

## W

W09	100
-----	-----

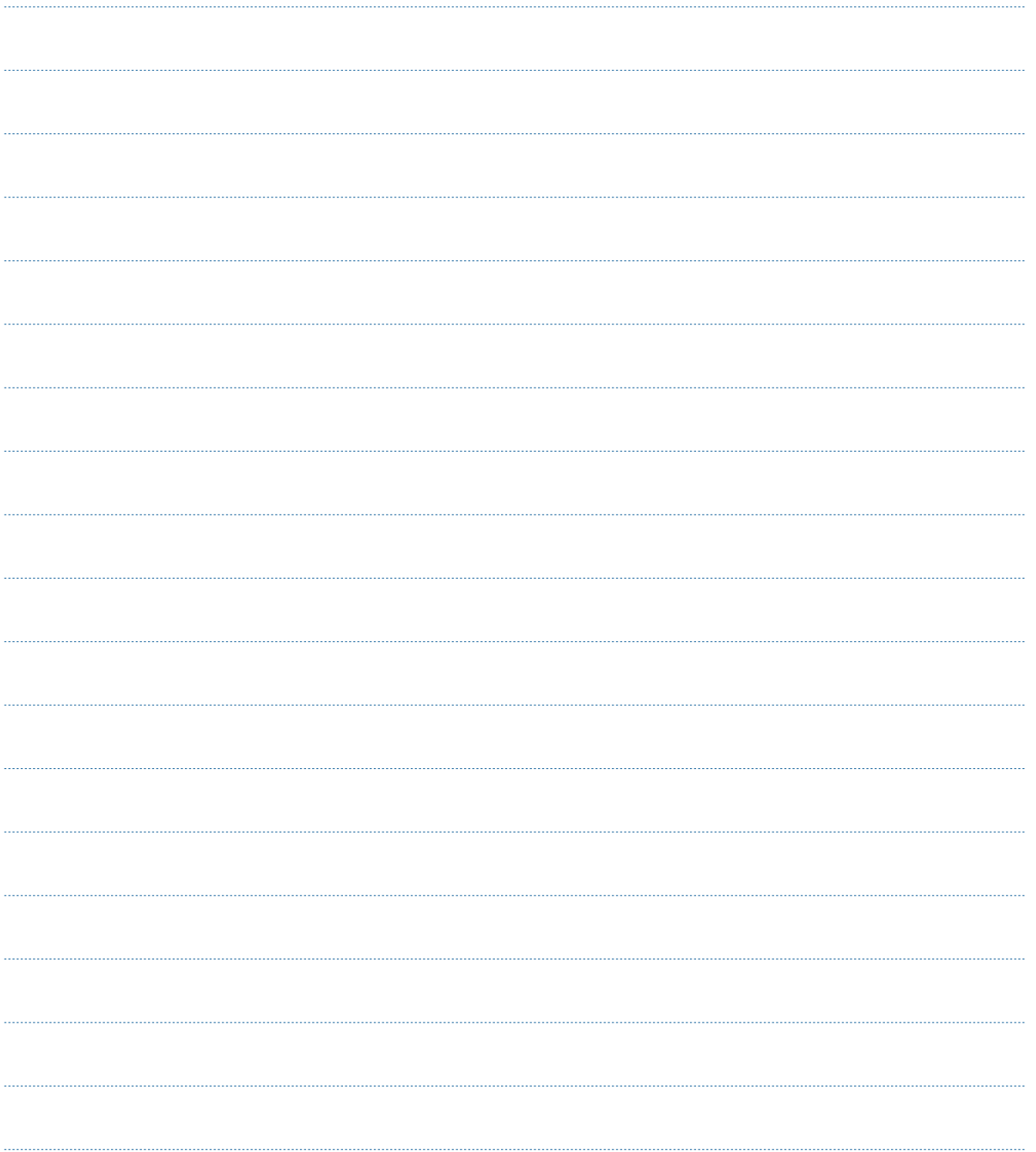
## X

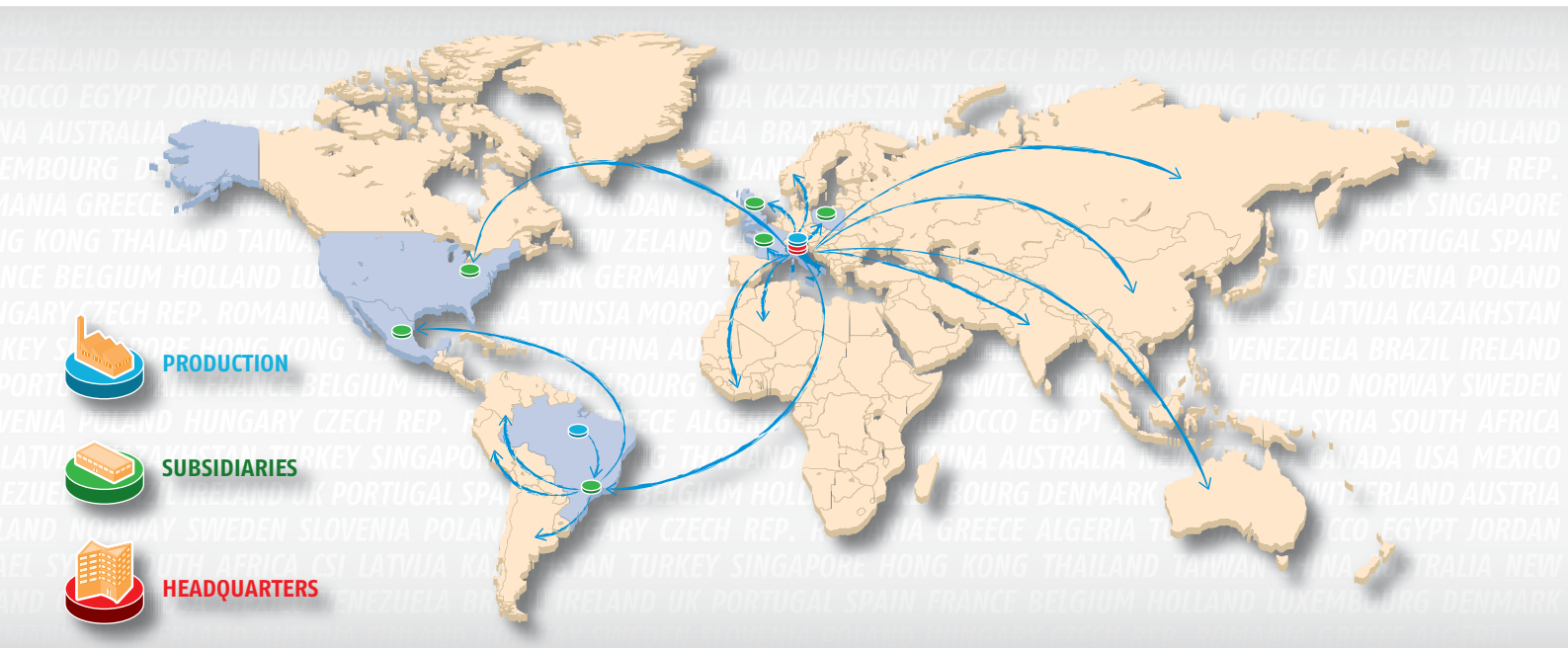
X1	40
X3	40
X5	74

## Z

Z31A	94
ZC0	206
Z02-3	204
Z0C	221







# THE GROUP

Ascon Tecnologic s.r.l.  
viale Indipendenza, 56 · 27029 Vigevano (PV) Italy  
tel +39 0381 69 871 · fax +39 0381 69 87 30

[info@ascontecnologic.com](mailto:info@ascontecnologic.com)  
[www.ascontecnologic.com](http://www.ascontecnologic.com)

Tecnologic UK Ltd  
Unit No.1 Farnborough Business Centre  
Eelmoor Road · Farnborough  
Hampshire · GU14 7xa  
tel +44 125 2377 600 · fax +44 125 2377 60  
[sales@tecnologicuk.co.uk](mailto:sales@tecnologicuk.co.uk)  
[www.t-uk.co.uk](http://www.t-uk.co.uk)

Ascon Tecnologic France  
BP 76 · 77202 · Marne La vallee Cedex 1  
tel +33 1 64 30 62 62 · fax +33 1 64 30 84 98  
[info@ascontecnologic.fr](mailto:info@ascontecnologic.fr)  
[www.ascontecnologic.com/fr](http://www.ascontecnologic.com/fr)

Ascon Polska sp. z.o.o.  
Kochcice ul. Kochanowicka 43  
42-713 Kochanowice  
tel +48 34 35 33 619 · fax +48 34 35 33 884  
[info@ascon.pl](mailto:info@ascon.pl)  
[www.ascon.pl](http://www.ascon.pl)

Ascon Tecnologic North America  
1111 Brook Park Road  
Cleveland · OH 44109  
tel +1 216 485 83 50 · Fax +1 216 398 85 53  
[info@ascontec-na.com](mailto:info@ascontec-na.com)  
[www.ascontecnologic.com/en](http://www.ascontecnologic.com/en)

Coelmatic Ltda  
Rua Clélia 1810 – Lapa  
Sao Paulo · SP – CEP 05042-001– Brazil  
tel +55 11 2066-3211 · fax +55 11 3046-8601  
[info@coel.com.br](mailto:info@coel.com.br)  
[www.coelmatic.com.br](http://www.coelmatic.com.br)

Coelmatic Sapi Sa de Cv  
Dr. Pedro Noriega #1099  
Col Terminal  
Monterrey NL CP 64570  
tel. +52 81 8104 1012  
[info@coelmatic.com.mx](mailto:info@coelmatic.com.mx)  
[www.coelmatic.com.mx](http://www.coelmatic.com.mx)

Printed in May 2016

Printed by:  
Tipolitografia Vaccarone - Vigevano (PV)

Graphic project:

elever   
[www.elever.it](http://www.elever.it)