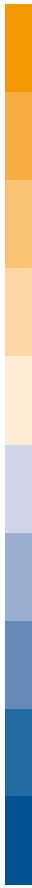




*Simple* and *reliable*  
controls for commercial  
and industrial refrigeration

# REFRIGERATION CATALOGUE 2013/2014



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## 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.



Manufacturing unit, Manaus (Brazil).



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

## 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 Det Norske Veritas Italy 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.



## REFRIGERATION



The *control*,  
at any  
temperature

# THERMOSTATS AND CONTROLLERS



## Cooling is cool

A complete range of products dedicated to the refrigeration both commercial and industrial: from the simple thermostat to the refrigerating unit controller.



# THERMOSTATS AND CONTROLLERS

FEATURES		Z31A	Z31	Z31E	Z31Y	Y39	Y39C	Y39E	W09	W09Y	W09C	X33H	X34	E51A	E51	TLZ12P	TLE20	TLV25	TLV26	TLV29	TLV35	TLZ35	TLW24	TLB29	TLB30	TLB55	
Dimensions (mm)	78x35	•	•	•	•	•	•	•				•	•	•	•	•	•	•	•	•							
	68x35																										
	75x122								•	•	•																
	70x84 4 DIN rail module																				•	•					
	185x38																						•				
	96x50																								•	•	
135x97																										•	
Single display		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dual display												•															
Digit		3	3	3	3	3	3	3	3	3	3	4	3	3	3	4	2 1/2	3	3	3	4	4	4	2	2	2	
"Sensitive Touch" keyboard		•	•	•	•	•	•	•	•	•			•											•	•	•	
Input	Universal																										
	PTC-NTC	•	•	•	•	•	•	•	•	•	•			•	•												
	PTC-NTC-4... 20 mA											•					•	•	•	•	•	•		•	•	•	
	PTC-NTC-Pt1000												•										•				
	NTC-Pt1000																•										
Relay outputs	Digital			1	1	1	1	1		1	1		2+2			1		1	1	1	1	1	1	2	2	2	
		1	1	2	2	3	3	3	1	3	3	4	4	1	1	2	1	4	4	3	4	2	4	3	4	4	
Power supply	12 Vac/Vdc	•	•	•	•	•	•	•						•	•	•	•	•	•	•	•	•					
	12... 24 Vac/Vdc	•	•	•	•	•	•	•														•	•				
	24 Vac/Vdc	•	•	•	•	•	•	•														•	•				
	100... 240 Vac	•	•	•	•	•	•	•	•	•	•	•	•			•		•	•	•	•	•	•	•	•	•	
	115Vac o 230 Vac													•	•		•										
Control	ON/OFF	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
ENERGY SAVING functions				•				•					•														
Defrosting control at intervals time by stopping compressor			•						•						•	•	•						•				
Defrosting control at intervals time, at reaching temperature by stopping compressor, by means of electrical heating or hot gas/reverse cycle				•	•	•	•	•		•								•	•	•	•			•	•	•	
REAL TIME CLOCK function											•							•	•	•	•						
HACCP function																											
RS485 on board																											
CE certification		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
UL approval		•	•	•	•	•	•	•	•	•						•	•	•	•	•	•	•	•	•	•	•	
ENEC approval (with "Sensitive Touch" keyboard only)		•	•	•	•	•	•	•					•										•	•	•	•	

THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PIC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

# Z31

- THERMOSTATS AND CONTROLLERS FOR REFRIGERATING UNITS
- SENSITIVE-TOUCH KEYBOARD
- ENERGY SAVING FUNCTIONS



## FEATURES

	Z31A	Z31	Z31E	Z31Y
<b>DISPLAY</b>		3 red or blue digit, h 15.5 mm		
<b>Single</b>				
<b>INPUTS</b>				
One (Z31, Z31A) or Two (Z31E, Z31Y)	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)		2x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 2x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)	
Digital input	--		1 digital input for free voltage contacts as alternative to input 2	
Accuracy	± 0.5 % fs + 1 digit			
<b>OUTPUTS</b>				
One (Z31, Z31A) or Two (Z31E, Z31Y)	OUT1: 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		Up to 2 relays. OUT1: 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 OUT2: SPDT (8A - 1/2 HP 250 Vac, 1/3 HP 125 Vac); EN 61810: 8 (3) A - EN 60730: 6 (4) A - UL 60730: 6 A Res. 12 A max. for plug-in version	
Relay operations	100000 operations			
<b>FUNCTIONAL</b>				
Control	ON/OFF			
Acoustic alarm	Internal Buzzer (optional)			
Defrosting control	--	At interval time by stopping compressor	At intervals time, at reaching temperature by stopping compressor, by electrical heating or hot gas/reverse cycle	
Energy Saving functions	--		Available	--
Serial communication	TTL Modbus, or RS485 by means of the external module A30 (see "Accessories" section)			
Remote display	By means of module TVRY (see "Indicators" section)			
<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 plug-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).			



EVERYTHING UNDER CONTROL

## HOW TO ORDER

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

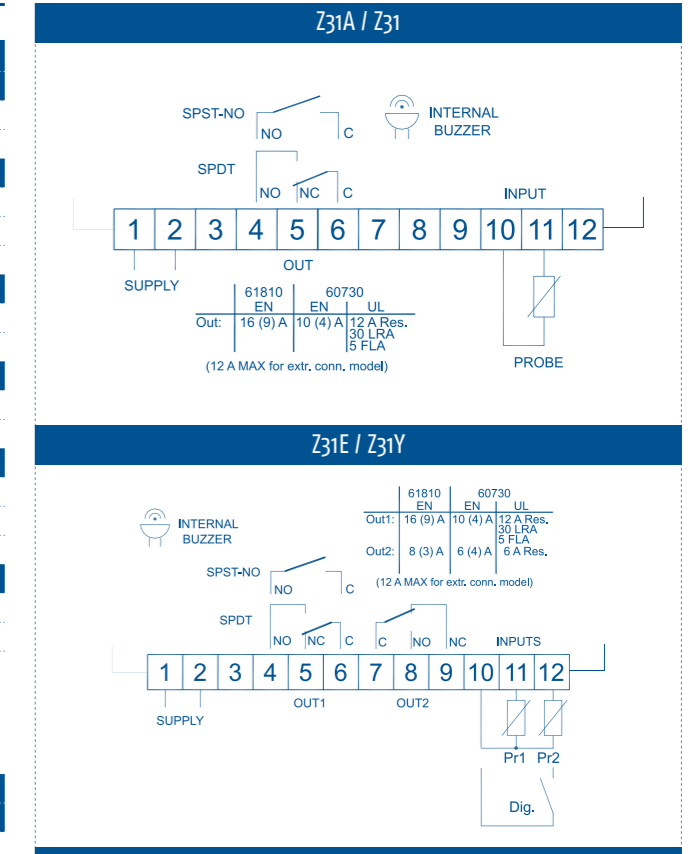
Z31A / Z31	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTION</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-

(\*) Capacitive Touch screen keyboard

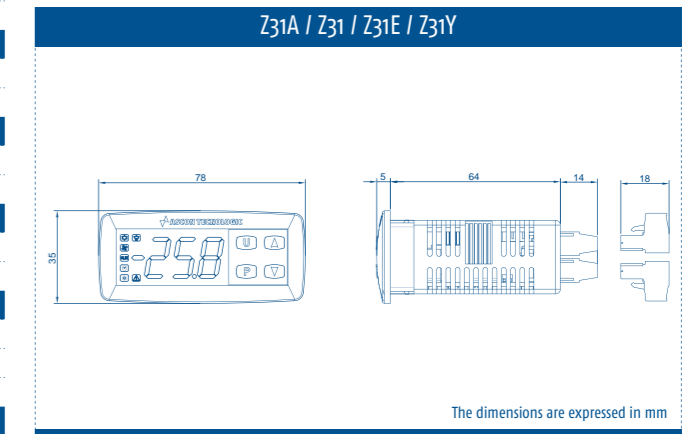
Z31E / Z31Y	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
<b>OUT 2</b>	
Relay SPDT 5A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<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



THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PIC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

# Y39

- CONTROLLERS FOR REFRIGERATING UNITS
- SENSITIVE-TOUCH KEYBOARD
- ENERGY SAVING FUNCTIONS
- UP TO 3 INPUTS AND 3 OUTPUTS



FEATURES

DISPLAY	Y39	Y39C	Y39E
Single	3 red or blue digit, h 15.5 mm		
INPUTS			
Two (Y39E) or Three (Y39, Y39C)	3x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 3x NTC 103AT-2 (10kΩ at 25°C) or 3x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)	3x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 3x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F) or 3x Pt1000 (1000Ω at 0°C) -99.9... +500°C (-148... +932°F)	2x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 2x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Digital input	1 digital input for free voltage contacts (as alternative to input 3 for Y39 ed Y39C)		
Accuracy	± 0.5 % fs + 1 digit		
OUTPUTS			
Up to 3	OUT1: Relay 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 OUT2: Relay SPDT (8A, 1/2HP 250Vac, 1/3HP 125Vac); EN 61810: 8 (3) A - EN 60730: 4 (4) A - UL 60730: 4 A Res. OUT3: Relay SPST-NO (5A - 1/8HP 250V, 1/10HP 125 Vac); EN 61810: 5 (2) A - EN 60730: 2 (2) A - UL 60730: 2 A Res. 16A max.(for plug-in version) for common relay (term. 1)		
Relay operations	100000 operations		
FUNCTIONAL			
Control	ON/OFF		
Acoustic alarm	Internal Buzzer (optional)		
Defrosting control	At intervals time, at reaching temperature by stopping compressor, by electrical heating or hot gas/reverse cycle		
Energy Saving functions	--		Available
Real time clock	--	Internal clock to manage defrosting at programmed times	--
Serial communication	TTL Modubus, or RS485 by means of the external module A30 (see "Accessories" section)		
Remote display	By means of module TVRY (see "Indicators" section)		
GENERAL			
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)		



EVERYTHING UNDER CONTROL

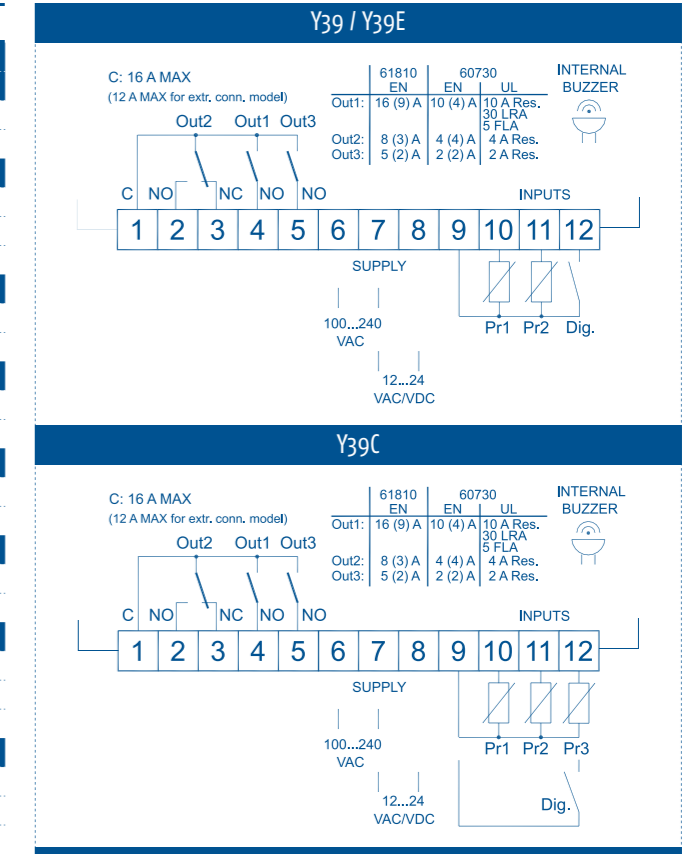
## HOW TO ORDER

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

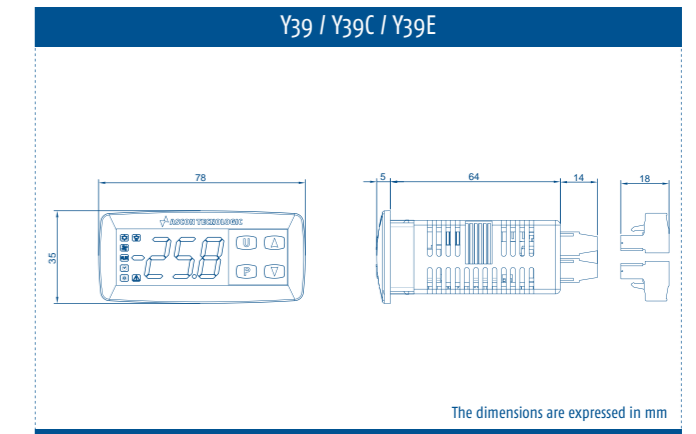
Y39 / Y39C / Y39E	CODE
KEYBOARD	
Mechanical	-
Sensitive-Touch (*)	S
POWER SUPPLY	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
OUT 1	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
OUT 2	
Relay SPDT 5A-AC1	R
Not available	-
OUT 3	
Relay SPDT 5A-AC1	R
Non prevista	-
BUZZER (INTERNAL)	
Available	B
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
DISPLAY	
Blue	B
Red (standard)	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PAC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PIC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# Wog9

- THERMOSTAT 1 INPUT AND 1 OUTPUT
- CONTROLLERS FOR REFRIGERATING UNITS, 3 INPUTS AND 3 OUTPUTS
- REAL TIME CLOCK FUNCTION



## FEATURES

DISPLAY	Wog	WogY	WogC
Single	3 red or blue digit, h 15.5 mm		
<b>INPUT</b>			
One (Wog) or Three (WogY, WogC)	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)	3x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 3x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)	
Digital input	--	1 digital input for free voltage contacts as alternative to input 3	
Accuracy	± 0.5 % fs + 1 digit		
<b>OUTPUTS</b>			
One (Wog) or Three (WogY, WogC)	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	OUT1: Relay SPST-NO (14A-AC1, 6AAC3 250 Vac, 1 HP 250 Vac, 1/2 HP 125 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2 HP 250 Vac, 1/3 HP 125 Vac) OUT3: Relay SPST-NO (4A-AC1, 2A-AC3 250 Vac, 1/8 HP 250-125 Vac) 16 A max. for common relay (term. 12)	
Relay operations	100000 operations according to EN 60730		
<b>FUNCTIONAL</b>			
Control	ON/OFF		
Defrosting control	At intervals time by stopping compressor	At intervals time, at reaching temperature by stopping compressor, by electrical heating or hot gas/reverse cycle	
Acoustic alarm	Internal Buzzer (optional)		
Real Time Clock	--	Internal clock to manage defrosting at programmed times	
Serial communication	TTL Modubus, or RS485 by means of the external module A30 (see "Accessories" section)		
Remote display	By means of module TVRY (see "Indicators" section)		
<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).		



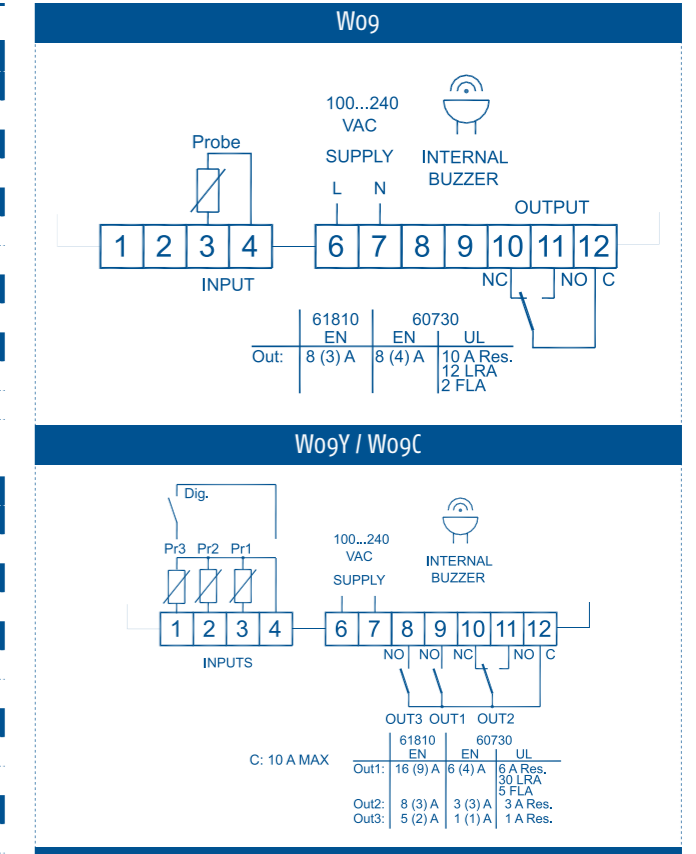
## HOW TO ORDER

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

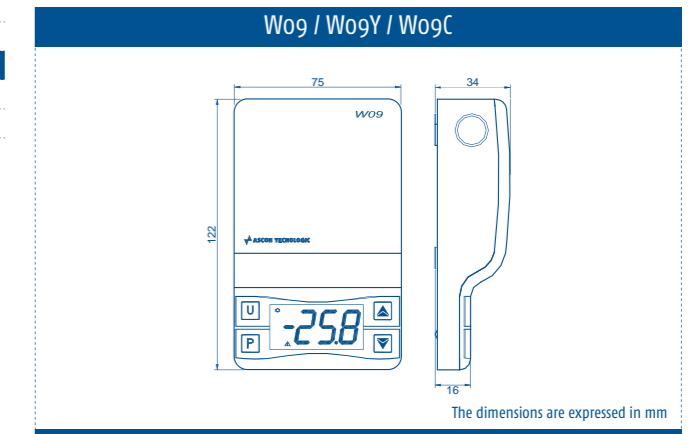
Wog9	CODE
<b>POWER SUPPLY</b>	
100... 240Vac	H
<b>OUT 1</b>	
Relay SPDT-8A-AC1	R
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTION</b>	
Screw type	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-

WogY / WogC	CODE
<b>ALIMENTAZIONE</b>	
100...240Vac	H
<b>OUT 1</b>	
Relay SPDT-8A-AC1	R
<b>OUT 2</b>	
Relay SPDT-8A-AC1	R
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTION</b>	
Screw type	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-
<b>REAL TIME CLOCK (WogC ONLY)</b>	
Available	C
Not available	-

## CONNECTIONS



## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# X33H

- HUMIDITY AND TEMPERATURE CONTROLLER
- 4 INPUTS AND 4 OUTPUTS



## FEATURES

DISPLAY	
Dual	X33H 4 digit, red and amber colours, h 7 mm
INPUTS	
Four	3x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 3x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F) 2 of them can be used as digital inputs + 1 input for humidity probe (0/4... 20 mA)
Digital inputs	1 digital input for free voltage contacts + 2 optional digital inputs for free voltage contacts as alternative to temperature inputs
Accuracy	± 0.5 % fs + 1 digit
OUTPUTS	
Up to four	OUT1: Relay SPST (16A-AC1, 6A-AC3 250 Vac, 1 HP 250 Vac, 1/2HP 125 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2 HP 250 Vac, 1/3HP 125 Vac) OUT3 e OUT4: Relay SPST-NO (5A-AC1, 2A-AC3 250 Vac, 1/8 HP 250 Vac, 1/10HP 125 Vac). 12 A max. for plug-in version
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal Buzzer (optional)
Defrosting control	At intervals time by stopping compressor, by electrical heating or hot gas/reverse cycle
GENERAL	
Power supply	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 / 180 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)

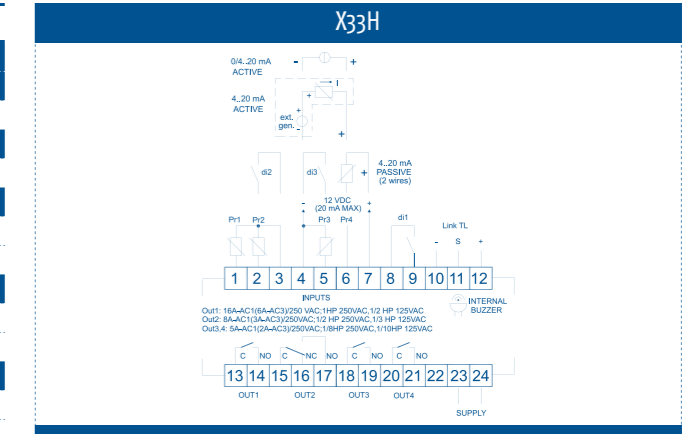


## HOW TO ORDER

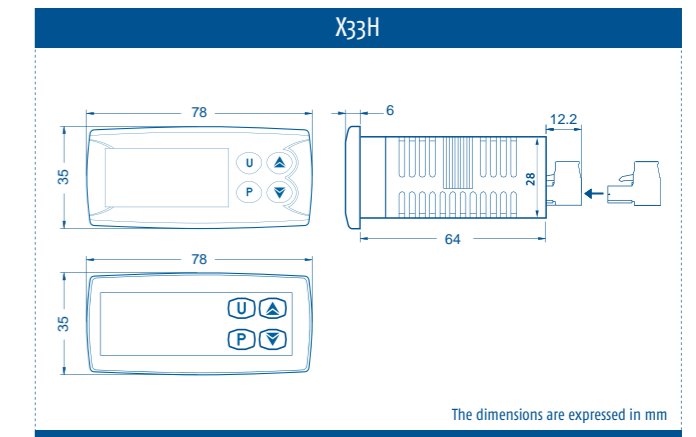
To compose the part number, pls. choose one of the option for each variable

X33H	CODE
POWER SUPPLY	
100...240Vac/Vdc	H
OUT 1	
Relay SPST-16A-AC1	R
OUT 2	
Relay SPDT-8A-AC1	R
Not available	-
OUT 3	
Relay SPST-NO 5A-AC1	R
Not available	-
OUT 4	
Relay SPST-NO 5A-AC1	R
Not available	-
BUZZER (INTERNAL)	
Available	B
Not available	-

## CONNECTIONS



## DIMENSIONS



# X34

- CONTROLLERS FOR REFRIGERATING UNITS
- HACCP FUNCTIONS
- ENERGY SAVING FUNCTIONS
- 4 INPUTS AND 4 OUTPUTS



## FEATURES

DISPLAY	
Single	X34 3 red or blue digit, h 15.5 mm
INPUTS	
Up to 4	PTC KTY 81-121 (990Ω at 25°C) -50... +109°C (-58... +228 °F) or NTC 103AT-2 (10kΩ at 25°C) -50...150°C (-58... +302 °F) or Pt1000 (1000Ω at 0 °C) -99.9... +300°C (-99.9 ... 572°F)
Digital inputs	2 digital inputs for free voltage contacts + 2 digital inputs as alternative to inputs Pr3 and Pr4
Accuracy	± 0.5 % fs + 1 digit
OUTPUTS	
Up to 4 (OUT1 and OUT2 are always on board)	OUT1: Relay SPST-NO-16A - 1HP 250V - EN 61810: 16 (9) A - EN 60730: 10 (4) A - UL 60730: 12A Res., 30 LRA, 5 FLA OUT2: Relay SPDT 8A - 1/2HP 250 V - EN 61810: 8 (3) A - EN 60730: 4 (4) A - UL 60730: 10A Res. OUT3 e OUT4: Relay SPST-NO 5A - 1/10HP 125/250 V - EN 61810: 5 (1) A - EN 60730: 2 (1) A - UL 60730: 2 A Gen.Use 12 A max. for plug-in version
Relay operations	100000 operations according to EN 60730
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	At intervals time, at reaching temperature, at programmed times by stopping compressor, by electrical heating or hot gas/reverse cycle
HACCP functions	With alarm recording
Real time clock	Internal clock to manage defrosting at programmed times
Events	Events programming by means of the internal clock
Serial communication	Isolated RS485 with Modbus RTU protocol
Baud rate	9600 baud
GENERAL	
Power supply	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 / 180 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 arial/air, S, A, 1,- 50°C +90°C wheter used with NTC 103AT11 probe or Pt1000 class B or better



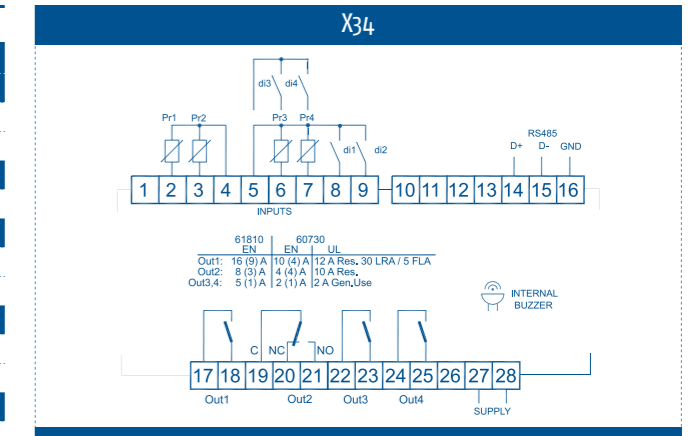
## HOW TO ORDER

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

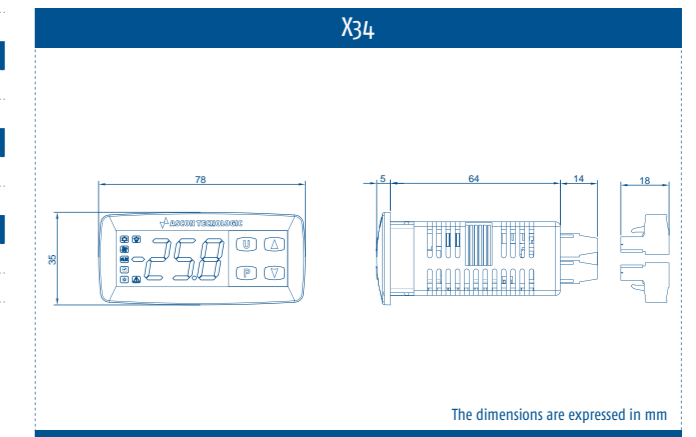
X34	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
100... 240 Vac/Vdc	H
<b>OUT 3</b>	
Relay SPST-5A-AC1	R
Not available	-
<b>OUT 4</b>	
Relay SPST-5A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL Modbus	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



# E51

- THERMOSTAT AND CONTROLLER
- 1 INPUT AND 1 OUTPUT
- SMALL DIMENSIONS



## FEATURES

	E51A	E51
<b>DISPLAY</b>	Single 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 OUT1: 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 operations	100000 operations for relay SPST-NO 16A and SPDT 8A, 50000 operations for relay SPDT 16A	
<b>FUNCTIONAL</b>	Control ON/OFF	
Defrosting control	--	At intervals time by stopping compressor
<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)	

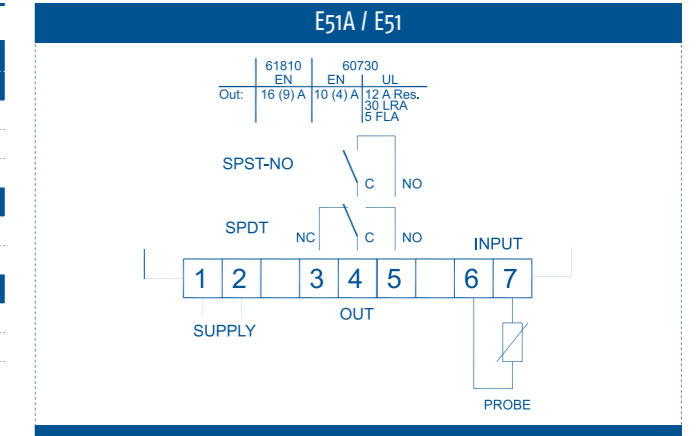


## HOW TO ORDER

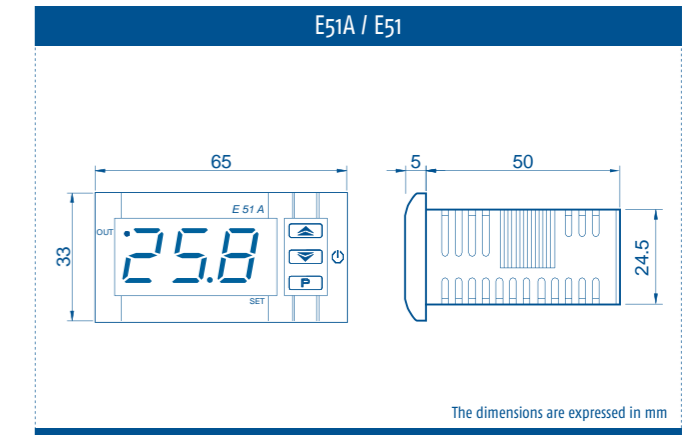
To compose the part number, pls. choose one of the option for each variable

E51A/E51	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



# TLZ12P

- THERMOSTAT
- 1 INPUT
- UP TO 2 OUTPUTS



**FEATURES**

DISPLAY	
Single	TLZ12P 4 red or blue digit, h 12 mm
INPUT	
One	Pt1000: -100... 500°C (-99.9... +500.0°C), -148... +932°F (-99.9... +932.0°C) or NTC 103AT-2 (10KΩ at 25°C): 0... +300°C (32... +572°F)
Digital inputs	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 Relay SPDT 16A-AC1(6A-AC3)/250 Vac OUT 2: Relay SPDT 5A-AC1(2A-AC3)/250 Vac
Relay operations	100000 operations for relay SPST-NO 16A and SPDT 8A, 50000 operations for relay SPDT 16A
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal Buzzer (optional)
Defrosting control	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	78 x 35 mm - depth 64 mm / 115 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) / -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)

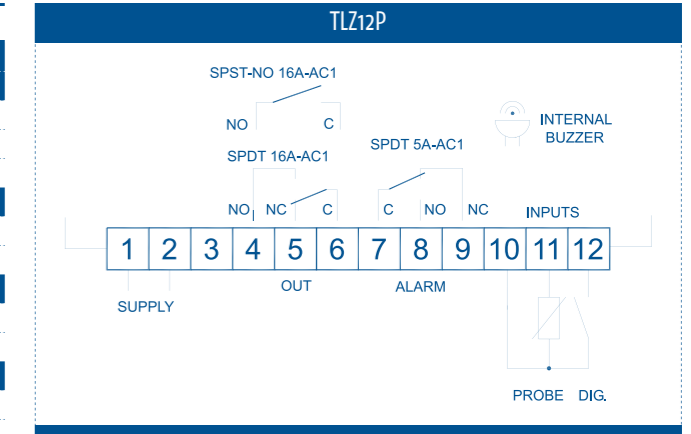


## HOW TO ORDER

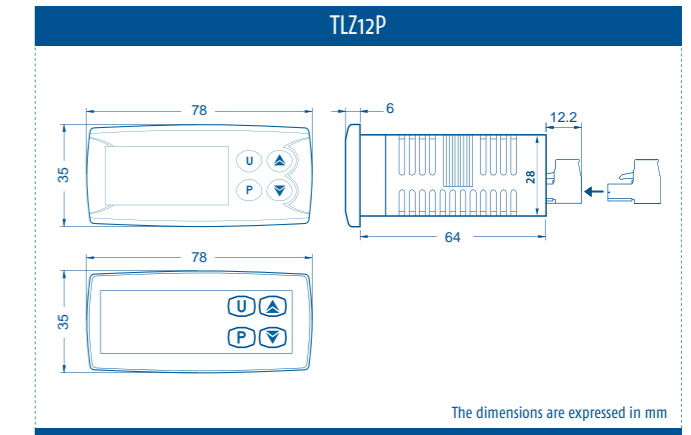
To compose the part number, pls. choose one of the option for each variable

TLZ12P	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	-
<b>INPUT</b>	
Pt1000 or NTC	P

## CONNECTIONS



## DIMENSIONS





# TLY 25/26/29

- CONTROLLERS FOR REFRIGERATING UNITS
- UP TO 2 INPUTS AND 4 OUTPUTS
- RS485



**FEATURES**

	TLY25	TLY26	TLY29
<b>DISPLAY</b>	Single 3 red or blue digit, h 12 mm		
<b>INPUTS</b>	Up to 2 2x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 2x NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)		
Digital inputs	1 digital input for free voltage contacts		
Accuracy	± 0.5 % fs + 1 digit		
<b>OUTPUTS</b>	With supply H type: OUT1: Relay SPST-NO 16 A max. for common (term.1), OUT 2, OUT3, OUT4: Relay 5A-AC1	OUT1: Relay SPST-NO 16 A max. for common (term. 1) OUT 2, OUT3, OUT4: Relay 8A-AC1 (3A-AC3 250 Vac)	OUT1: Relay SPST-NO (16A-AC1, 6A-AC3 250 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac) OUT3: Relay SPSTNO (5A-AC1, 2A-AC3 250 Vac). 16 A max. for common (term. 1)
Up to 3 (TLY29) Up to 4 (TLY25, TLY26)	With supply F type: OUT1: Relay SPST-NO 16 A max. for common (term.1), OUT 2, OUT3, OUT4: Relay 8A-AC1 (3A-AC3 250 Vac)		
Relay operations	100000 operations for relay SPST-NO 16A e 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, by electrical heating or hot gas/reverse cycle		
Real time clock	Internal clock to manage defrosting at programmed times		
Serial communication	RS485 by means of the external mod. A30 (see "Accessories" section)	RS485 on board with Modbus RTU protocol	RS485 by means of the external mod. A30 (see "Accessories" section)
Baud rate	--	9600 baud	
Remote display	PBy means of module TVRY (see "Indicators" section)		
<b>GENERAL</b>	Power supply 12 Vac/Vdc, 100...240 Vac ±10% (50/60 Hz) 4 VA approx.		
Power consumption	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals		
Dimensions	Weight 115 g approx. 155 g approx.		
Weight	Connections Screw terminal block 2.5 mm <sup>2</sup> or plu-in connector with screw terminals 2.5 mm <sup>2</sup>		
Connections	Mounting Flush in panel in 71 x 29 mm hole		
Mounting	Front protection degree IP65, mounted in panel with gasket		
Front protection degree	Operating / storage temperature 0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)		
Operating / storage temperature	Operating humidity 30... 95 RH% without condensation		
Operating humidity	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

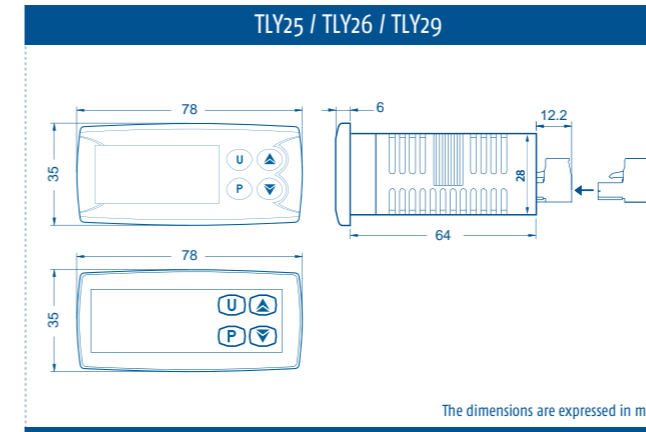
TLY25	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
100... 240 Vac	H
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-

TLY26	CODE
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-
<b>REMOTE DISPLAY</b>	
Available	D
Not available	-

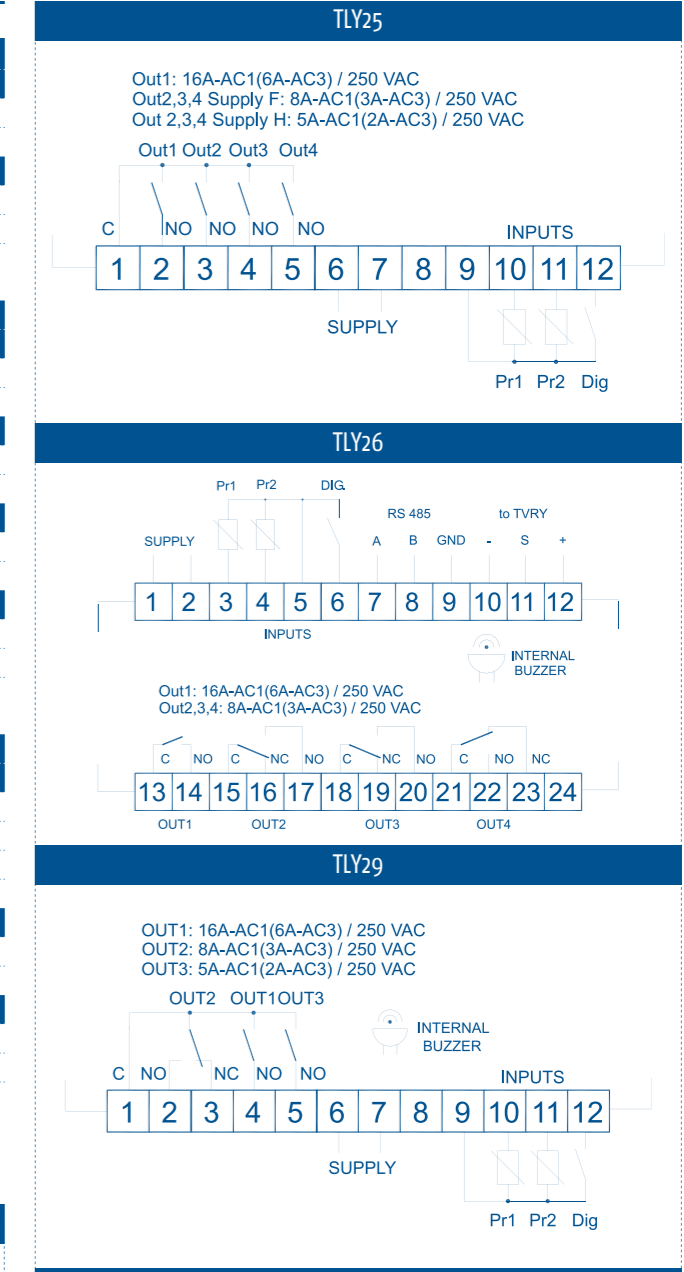
TLY29	CODE
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL Modbus	-
<b>OUT 4</b>	
Relay SPDT 8A AC1	R
Not available	-

TLY29	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
12...24 Vac/Vdc	G
24 Vac/Vdc	L
100...240 Vac	H
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-

## DIMENSIONS



## CONNECTIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# TLY35

- CONTROLLER FOR REFRIGERATING UNITS
- UP TO 2 INPUTS AND 4 OUTPUTS
- RS485



## FEATURES

DISPLAY	
Single	TLY35 4 red or blue digit, h 12 mm
INPUTS	
Up to 2	2x PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or 2x 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 + 1 digit
OUTPUTS	
Up to 4	OUT1: Relay SPST-NO (16A-AC1, 6AAC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) or SPDT (16A-AC1-NO, 8A-AC1-NC, 6A-AC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) OUT2 e OUT3: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250Vac, 1/3HP 125 Vac) OUT4: Relay SPST-NO (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250Vac, 1/3HP 125 Vac)
Relay operations	100000 operations for relay SPST-NO 16A and SPDT 8A - 50000 operations for relay SPDT 16A
FUNCTIONAL	
Control	ON/OFF
Defrosting control	At intervals time by stopping compressor, by electrical heating or hot gas/reverse cycle
Real Time Clock	Internal clock to manage defrosting at programmed times
Serial communication	Isolated RS485 with Modbus RTU protocol
Baud rate	9600 baud
Remote display	By means of module TVRY (see "Indicators" section)
GENERAL	
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100...240 Vac ±10% (50/60 Hz)
Power consumption	5 VA approx.
Dimensions / Weight	4 DIN rail module, 70 x 84 mm, depth 60 mm/ 180 g
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)

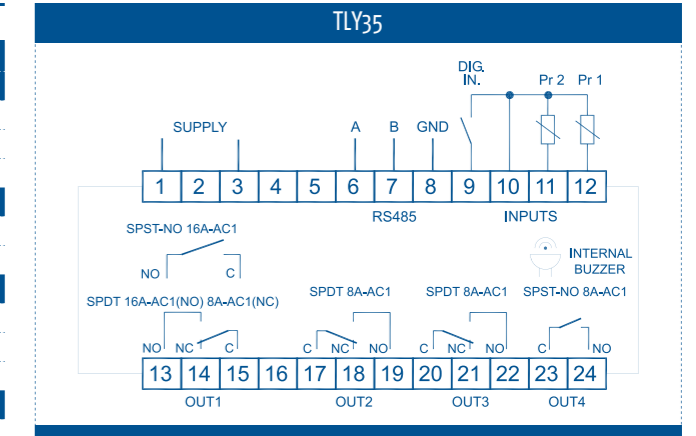


## HOW TO ORDER

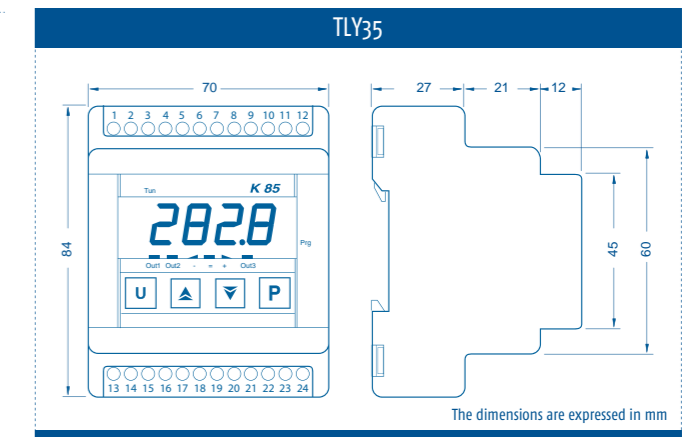
To compose the part number, pls. choose one of the option for each variable

TLY35	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 4 / BUZZER (INTERNAL)</b>	
Relay SPDT 8A AC1	R
Buzzer	B
Not available	-
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-
<b>SERIAL COMMUNICATION</b>	
RS485	S
TTL Modubus	-

## CONNECTIONS



## DIMENSIONS



# TLZ35

- THERMOSTAT
- 1 INPUT AND UP TO 2 OUTPUTS



## FEATURES

DISPLAY	
Single	TLZ35 4 digit rosso o blu, h 12 mm
INPUT	
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
OUTPUTS	
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
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	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)

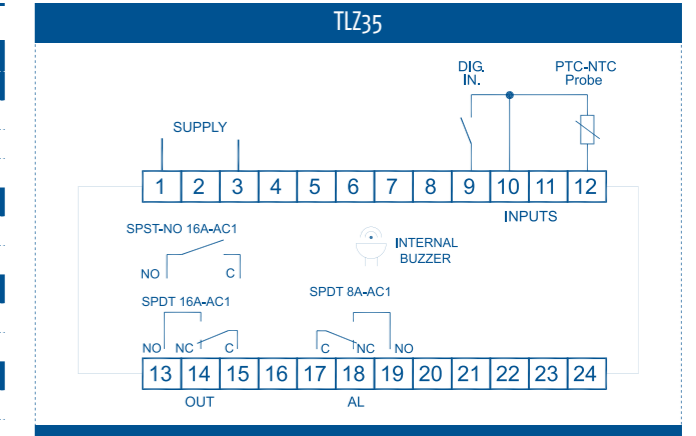


## HOW TO ORDER

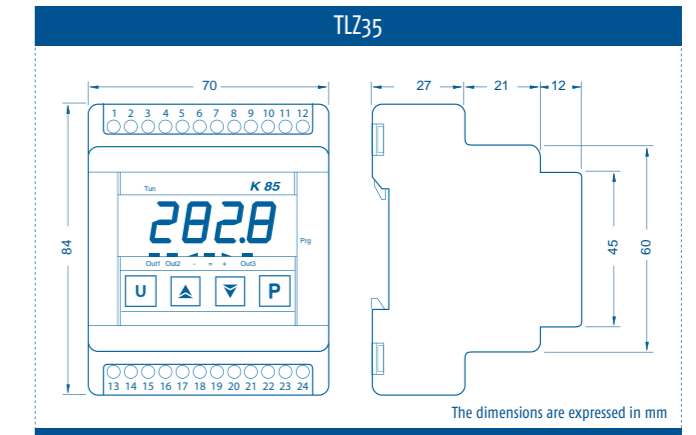
To compose the part number, pls. choose one of the option for each variable

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

## CONNECTIONS



## DIMENSIONS



# TLW24

- CONTROLLER FOR REFRIGERATING UNITS
- UP TO 2 INPUTS AND 4 OUTPUTS
- PICK RECORDING
- INOX FRONT FRAME

**FEATURES**

DISPLAY	
Single	TLW24 4 red or blue digit, h 12 mm
INPUTS	
Up to 2	2x PTC KTY 81-121 (990Ω at 25°C): -50... +150°C (-58... +302°F) or 2x NTC 103AT-2 (10kΩ at 25°C): -50... +109°C (-58... +228°F) or 2x PT1000: -100...+100°C (-148... +212°F)
Digital input	1 digital input for free voltage contacts
Accuracy	± 0.5 % fs + 1 digit
OUTPUTS	
Up to 4	OUT1: Relay SPST-NO (16A-AC1, 12A-AC3 /250Vac, 2HP 250Vac, 1HP 125Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250 Vac, 1/3 HP 125 Vac) OUT3: Relay SPST-NO (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250 Vac, 1/3 HP 125 Vac) OUT4: Relay SPST-NO (R) o SPDT (S) (16A-AC1, 6A-AC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) Power supply common (term. 13, 14): 16 A max. (11.5 A max. for UL873 with Faston terminals)
Relay operations	OUT1, OUT2, OUT3: 30000 operations OUT4: 50000 operations (VDE approval)
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	At intervals time by stopping compressor, by electrical heating or hot gas/reverse cycle
Special functions	Stand-by, light control, min./max. picks recording, keyboard lock, duty cycle function
Serial communication	RS485 by means of the external module A30 (see "Accessories" section)
GENERAL	
Power supply	100... 240 Vac ±10% (50/60 Hz)
Power consumption	6 VA approx.
Frontal frame	Grey or white autoextinguishing plastic UL 94 V0 or Inox steel, with transparent protective cover (optional)
Dimensions / Weight	185 x 38 mm, depth 79 mm / 240 g approx.
Connections	Faston male 6.3 mm or Screw terminal block 2.5 mm <sup>2</sup>
Mounting	Flush in panel in 31 x 150 mm hole, with screw protective covers
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 CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

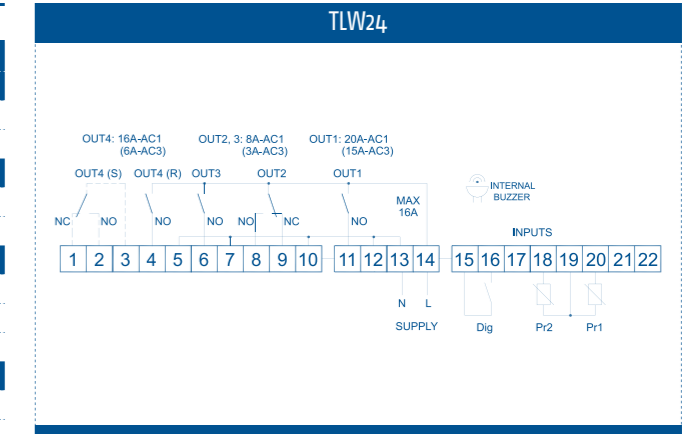


## HOW TO ORDER

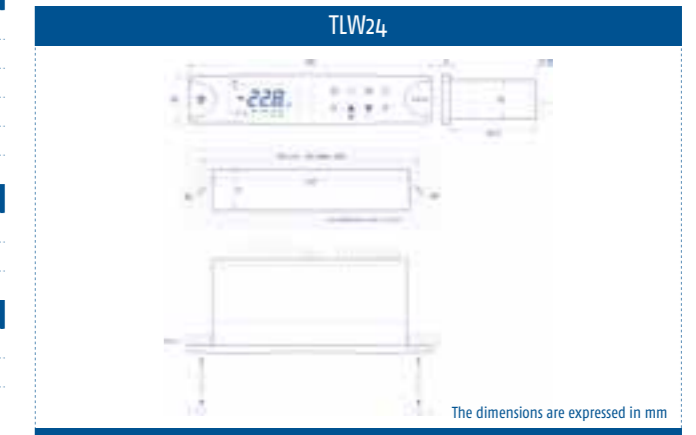
To compose the part number, pls. choose one of the option for each variable

TLW24	CODE
<b>OUT 2</b>	
Relay 8A SPDT	R
Not available	-
<b>OUT 3</b>	
Relay 8A SPDT	R
Not available	-
<b>OUT 4</b>	
Relay 16A SPST	R
Relay 16A SPDT	S
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Screw type	MV
Faston type	--
<b>DISPLAY AND FRONT FRAME COLOUR</b>	
Red Display, Grey front frame	--
Red Display, White front frame	RB
Red Display, Inox front frame	-X
Blue Display, Grey front frame	B-
Blue Display, White front frame	BB
Blue Display, Inox front frame	BX
<b>SPECIAL VERSIONS</b>	
Input for PT1000 -100+100°C	P
DUTY CYCLE function	F
Standard	-
<b>FRONT PROTECTION</b>	
With transparent cover	C
Not available	-

## CONNECTIONS



## DIMENSIONS



# TLB29

- CONTROLLER FOR REFRIGERATING UNITS
- UP TO 2 INPUTS AND 3 OUTPUTS
- SENSITIVE-TOUCH KEYBOARD



## FEATURES

<b>DISPLAY</b>	TLB29
Single	2 red or blue digit, h 31 mm
<b>INPUTS</b>	
Up to 2	2x PTC KTY 81-121 (990Ω at 25°C): -50... 99 °C (-58... 99 °F) or 2x NTC 103AT-2 (10kΩ at 25°C): -50... 99 °C (-58... 99 °F)
Digital input	2 digital inputs for free voltage contacts
Accuracy	± 0.5 % fs + 1 digit
<b>OUTPUTS</b>	
Up to 3	OUT1: Relay SPST-NO (16A-AC1, 6A-AC3 250 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac) OUT3: Relay SPSTNO (8A-AC1, 3A-AC3 250 Vac)
Relay operations	100000 operations (VDE)
<b>FUNCTIONAL</b>	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	At intervals time by electrical heating or hot gas/reverse cycle
<b>GENERAL</b>	
Power supply	100...240 Vac ±10% (50/60 Hz)
Power consumption	4 VA approx.
Dimensions / Weight	96 x 50 mm, depth 60 mm / 155 g approx.
Keyboard	"Sensitive-Touch" keyboard or TLBTA external keyboard (optional - see page 44)
Connections	Screw terminal block 2.5 mm <sup>2</sup> + plug-in connectors (optional for inputs only)
Mounting	Flush in panel in 90 x 44 mm hole
Front protection degree	IP40, 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 CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)



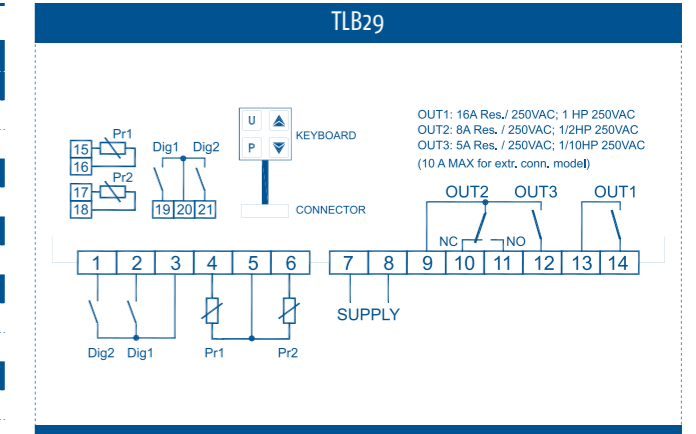
## HOW TO ORDER

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

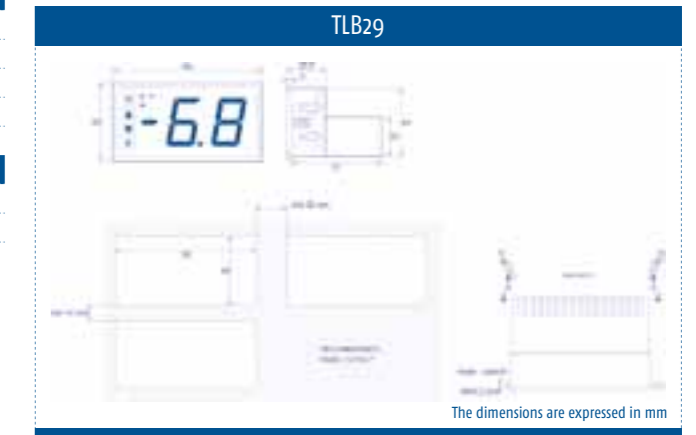
TLB29	CODE
<b>KEYBOARD</b>	
TLBTA external keyboard	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPST-NO 16A	R
<b>OUT 2</b>	
Relay SPDT 8A	R
Not available	-
<b>OUT 3</b>	
Relay SPST NO 5A	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Screw type (Standard)	-
Screw type + input connectors	B
With input connectors only	C
Plug-in type	E
Plug-in type, fix part only	N
<b>DISPLAY</b>	
Red	-
Blue	B

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



# TLB 30/55

- CONTROLLERS FOR REFRIGERATING UNITS
- UP TO 2 INPUTS AND 4 OUTPUTS
- SENSITIVE-TOUCH KEYBOARD



## FEATURES

DISPLAY	TLB30	TLB55
Single	2 red or blue digit, h 31 mm	2 red or blue digit, h 54 mm
<b>INPUTS</b>		
Up to 2	2x PTC KTY 81-121 (990Ω at 25°C): -50... 99 °C (-58... 99 °F) or 2x NTC 103AT-2 (10kΩ at 25°C): -50... 99 °C (-58... 99 °F)	
Digital input	2 digital inputs for free voltage contacts	
Accuracy	± 0.5 % fs + 1 digit	
<b>OUTPUTS</b>		
Up to 4	OUT1: Relay SPST-NO (12A-AC1, 6A-AC3 250 Vac) OUT2: Relay SPST-NO (8A-AC1, 3A-AC3 250 Vac) OUT3 e OUT4: Relay SPST-NO (5A-AC1, 2A-AC3 250 Vac)	
Relay operations	100000 operations (EN60730)	
<b>FUNCTIONAL</b>		
Control	ON/OFF	
Acoustic alarm	Internal buzzer (optional)	
Defrosting control	At intervals time by electrical heating or hot gas/reverse cycle	
<b>GENERAL</b>		
Power supply	100...240 Vac ±10% (50/60 Hz)	
Power consumption	4 VA approx.	
Dimensions	96 x 50 mm, depth 22.5 mm	135 x 97 mm, depth 22.5 mm
Power module BSLB4	90 x 65 mm, depth 41 mm	
Weight	70 g approx. (TLB30) + 115 g approx. (BSLB4)	135 g approx. (TLB55) + 115 g approx. (BSLB4)
Keyboard	"Sensitive-Touch" keyboard or TLBTA external keyboard (optional - see page 44)	
Connections	TLB connections (inputs): mini plug-in connectors BSLB4 connections (power supply and outputs): 6 pole plug-in connector AMP MATE-N-LOK .250 " type TLB-BSLB4 connections: 3 m max. by means of cable with RJ connectors telephonic type	
Mounting	Flush in panel in 90 x 44 mm hole	Flush in panel in 124 x 85 mm hole
Front protection degree	IP40, 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.; EN 61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV diff. mode; EN 61000-4-6: 3V), 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9) Approvals: ENEC (Lic.n. 00161); C-UL (file n. E212227)	



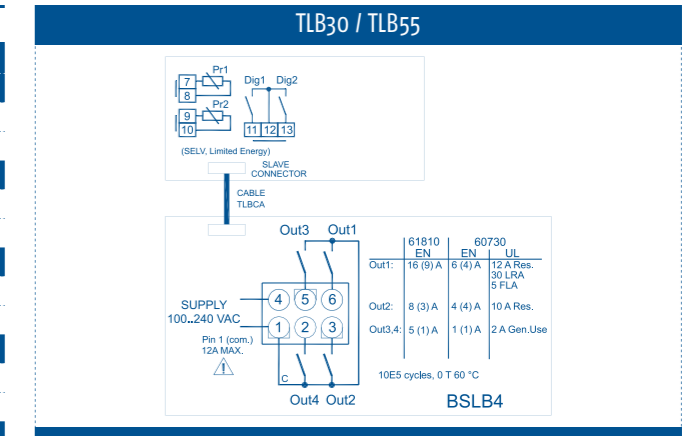
## HOW TO ORDER

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

TLB30 / TLB55	CODE
<b>KEYBOARD</b>	
TLBTA external keyboard	-
Sensitive-Touch (*)	S
<b>OUT 1</b>	
Available	Y
Not available	-
<b>OUT 2</b>	
Available	Y
Not available	-
<b>OUT 3</b>	
Available	Y
Not available	-
<b>OUT 4</b>	
Available	Y
Not available	-
<b>VOLTAGE ALARM</b>	
Available	V
Not available	-

(\*) Capacitive Touch screen keyboard  
To be used with slave module BSLB4 and cable TLBCA (see following page)

## CONNECTIONS



## DIMENSIONS



The dimensions are expressed in mm



The dimensions are expressed in mm

# BSLB4

- ACCESSORY FOR TLB SERIES
- POWER MODULE (SLAVE)

**FEATURES**

OUTPUTS	
	<b>BSLB4</b>
Up to 4	OUT1: Relay SPST-NO (12A-AC1, 6A-AC3 250 Vac) OUT2: Relay SPST-NO (8A-AC1, 3A-AC3 250 Vac) OUT3 e OUT4: Relay SPST-NO (5A-AC1, 2A-AC3 250 Vac)
Relay operations	100000 operations, according to EN60730
GENERAL	
Power supply	100...240 Vac ±10% (50/60 Hz)
Power consumption	4 VA approx.
Dimensions / Weight	90 x 65 mm, depth 41 mm / 115 g approx.
Connections	Power supply and outputs: 6 pole plug-in connector AMP MATE-N-LOK .250 " type TLB-TLBSL connection: 3 m max. by means of cable with RJ connectors telephonic type
Mounting	Within enclosure
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)



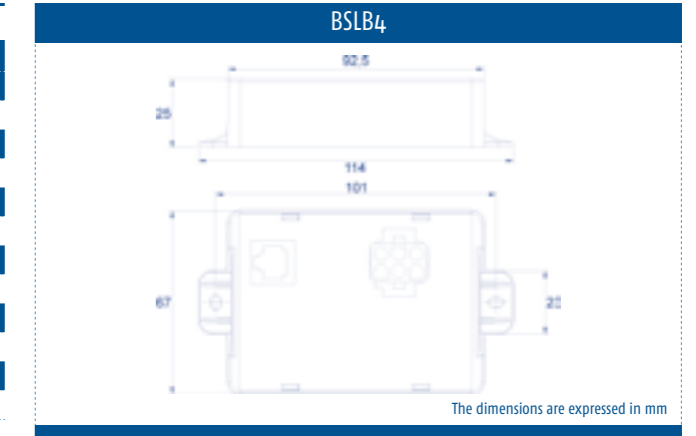
EVERYTHING UNDER CONTROL

## HOW TO ORDER

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

BSLB4	CODE
<b>POWER SUPPLY</b>	
100... 240 Vac/Vdc	H
<b>OUT 1</b>	
Relay 16A SPST-AC1	R
<b>OUT 2</b>	
Relay 8A SPST	R
<b>OUT 3</b>	
Relay 5A SPST	R
<b>OUT 4</b>	
Relay 5A SPST	R
<b>VOLTAGE ALARM</b>	
Available	V
Not available	-

## DIMENSIONS



# TLB TA/CA

- ACCESSORIES FOR TLB SERIES
- PROGRAMMING KEYBOARD
- CABLE OF CONNECTION

**FEATURES**

PROGRAMMING KEYBOARD	TLBTA
Functions	The programming of the operating parameters of TLB series, in the version without keys, can be done by using this remote keyboard, connectable to TLB unit by means of a cable TLBCA (1 m) In the version with Sensitive Touch keyboard, obviously TLBTA is not necessary.
CONNECTION CABLE BETWEEN DISPLAY TLB AND SLAVE BSLB <sub>4</sub>	TLBCA
Length	1 meter



## HOW TO ORDER

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

TLBCA	CODE
LENGHT	
1 m	1
3 m	3

TLBTA	CODE
CABLE LENGHT	
1 m	--



## INDICATORS



### Easy to use, reliable and cost effective

Indicators with input for temperature probes and analogue signals in current or voltage. Available also LCD versions with external probe already wired.

# INDICATORS

FEATURES	Z31V	K31V	K38V	K48V	K85V	E51V	TLCD	TVRY	X31L
Dimensions (mm)	78x35	•	•	•					•
	24x48					•			
	48x48	•			•				
	70x84 4 DIN rail module					•			
	Various (see detailed table)						•		
64x31							•		
Single display	•	•	•	•	•	•	•	•	•
Digit	3	4	4	4	4	3	2	2 1/2	3
Input	PTC-NTC	•				•			
	J-K-S-R-T + IR + PTC-NTC		•	•	•	•			
	J-K-S-R-T + IR + Pt100		•	•	•	•			
	0/4... 20 mA or 0/1... 5 V or 0... 10V		•	•	•	•			
Outputs	Digital	1	4	2	2	3			10
Power supply	12 Vac/Vdc	•	•				•		
	12... 24 Vac/Vdc	•							
	24 Vac/Vdc		•	•	•	•			•
	115, 230 Vac						•		
	100... 240 Vac	•	•	•	•	•			•
	12 Vdc (by the instrument)							•	
	1.5 Vdc battery						•		
Solar cell						•			
RS485 Modbus		•			•				
CE certification	•	•	•	•	•	•	•	•	•
UL approval	•	•	•	•	•	•	•	•	•
ENEC approval	•	•	•	•	•	•	•	•	•

THERMOSTATS  
AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS  
AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED  
SYSTEMS

PIC AND  
OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

# Z31V

- INDICATOR
- 1 INPUT AND 1 OUTPUT FOR ALARM INDICATION
- SENSITIVE-TOUCH KEYBOARD



## FEATURES

DISPLAY	
Single	Z31V 3 red or blue digit, h 15.5 mm
INPUT	
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
OUTPUT	
One, for alarm indication	OUT1: 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 operations	100000 operations
FUNCTIONAL	
Acoustic alarm	Internal buzzer (optional)
GENERAL	
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 o 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).



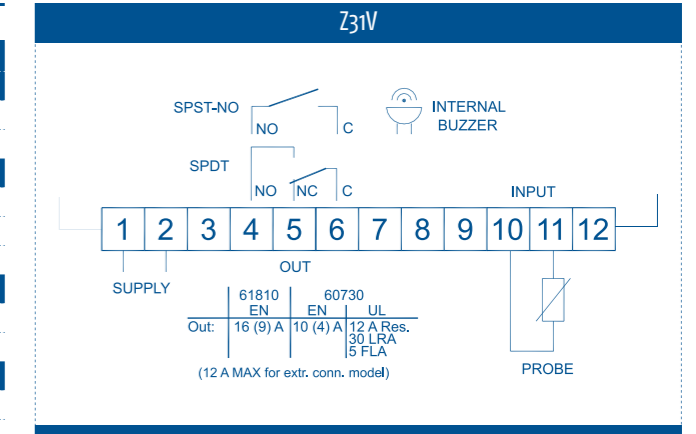
## HOW TO ORDER

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

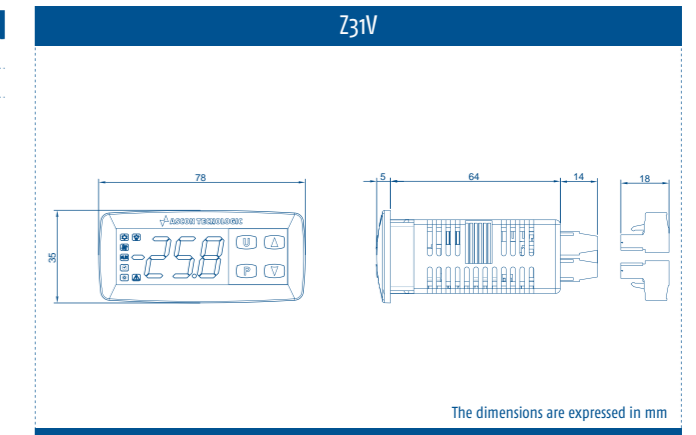
Z31V	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
<b>OUT 1</b>	
Relay SPDT 16A-AC1	S
Relay SPST-NO-16A-AC1	R
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



# K 31V/38V

- INDICATORS
- UP TO 4 OUTPUTS FOR ALARM INDICATION
- RS485 OR TTL SERIAL COMMUNICATION



**FEATURES**

DISPLAY	K31V	K38V
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 4 (K31V) Up to 2 (K38V)	OUT1 and OUT2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3 and OUT4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving	OUT1 and OUT2: Relay SPDT (8A-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	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	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals	78 x 35 mm - depth 64 mm
Weight	180 g approx.	
Connections	Screw terminal block 2.5 mm <sup>2</sup> or plu-in connector with screw terminals 2.5 mm <sup>2</sup>	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	30... 95 RH% without condensation	
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)	



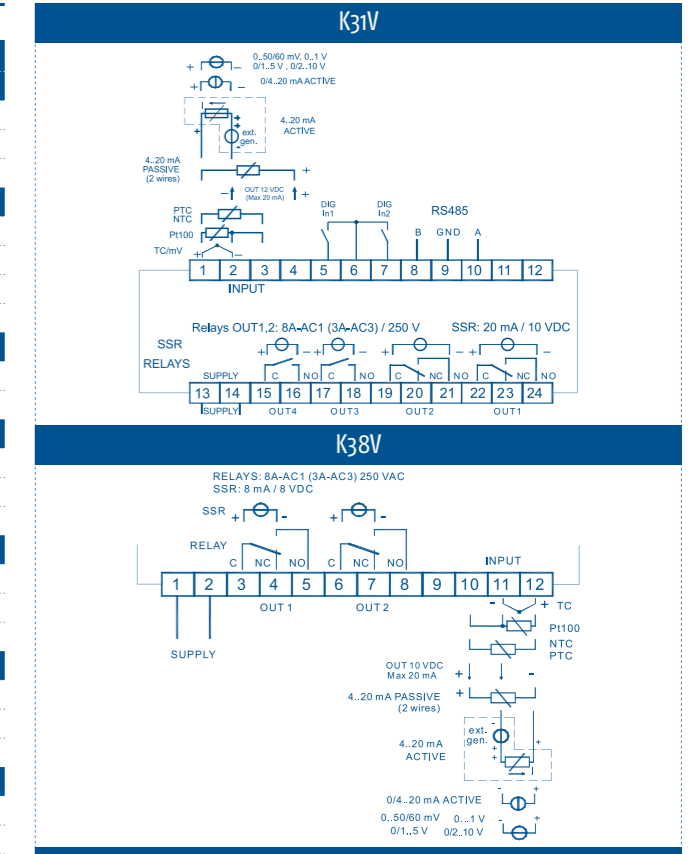
## HOW TO ORDER

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

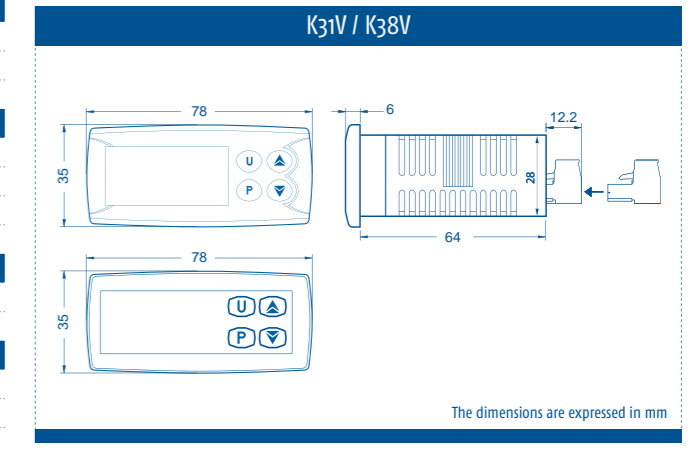
K31V	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 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



INDICATORS  
THERMOSTATS AND CONTROLLERS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# K 48V/85V

- INDICATORS
- UP TO 3 OUTPUTS FOR ALARM INDICATION
- RS485 OR TTL SERIAL COMMUNICATION



**FEATURES**

DISPLAY	K48V	K85V
Single	4 red digit, h 7mm	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, as alternative to Out 3	2 digital inputs for free voltage contacts
<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	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	TTL ModBus	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	48 x 48 mm (1/16 DIN) - depth 98 mm	4 DIN rail modules, 70 x 84 mm - depth 60 mm
Weight	180 g approx.	230 g approx.
Connections	Screw terminal block 2.5 mm <sup>2</sup>	
Mounting	Flush in panel in 45 x 45 mm hole	On OMEGA DIN A rail
Front protection degree	IP65, mounted in panel with gasket	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)	



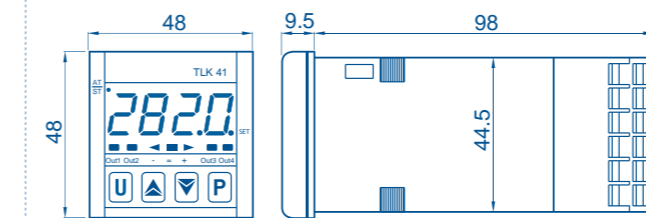
## HOW TO ORDER

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

K48V / K85V	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>	
2 digital inputs (K48V only)	D
Relay	R
Vdc for SSR driving	0
Not available	-

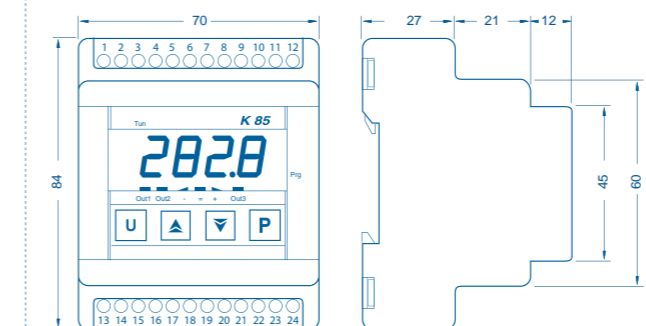
## DIMENSIONS

### K48V



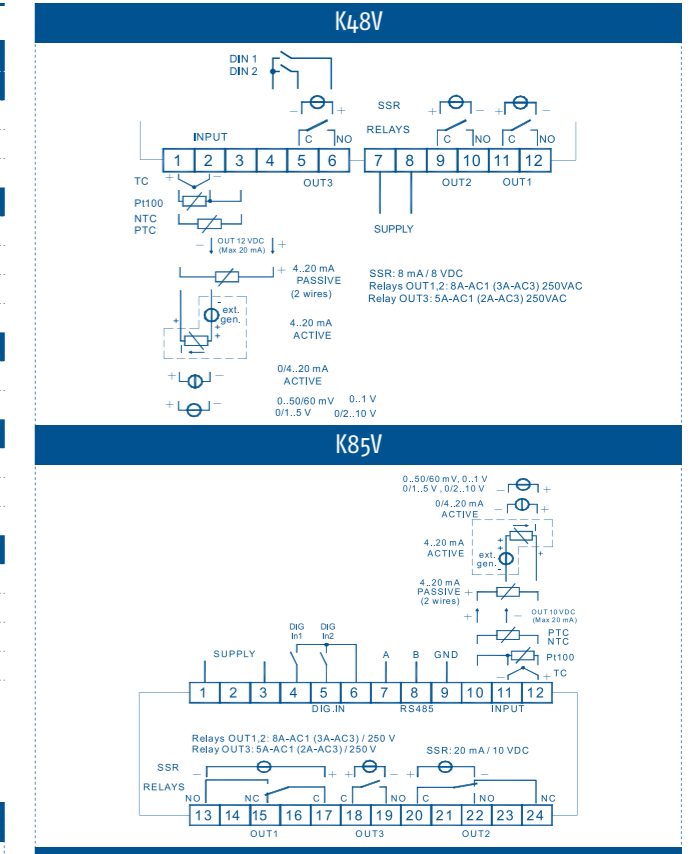
The dimensions are expressed in mm

### K85V



The dimensions are expressed in mm

## CONNECTIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# E51V

- INDICATOR
- 1 PTC OR NTC INPUT
- SMALL DIMENSIONS

**FEATURES**

E51V	
DISPLAY	Single 3 red digit, h 14 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)
Accuracy	± 0.5 % fs + 1 digit
<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)

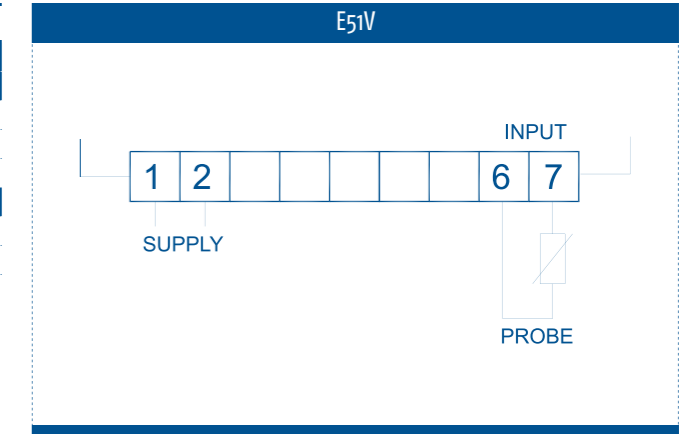


## HOW TO ORDER

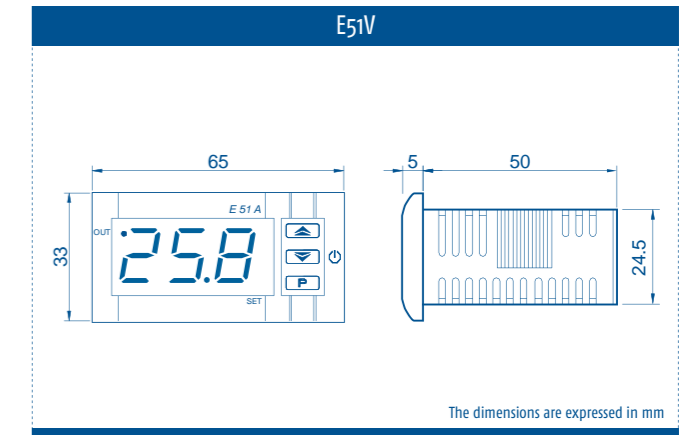
To compose the part number, pls. choose one of the option for each variable

E51V	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
115 Vac	C
230 Vac	D
<b>INPUT</b>	
PTC	P
NTC	N

## CONNECTIONS



## DIMENSIONS



# TLCD

- LCD INDICATORS
- INTERNAL BATTERY SUPPLY
- WITH OR WITHOUT SOLAR CELL



## FEATURES

DISPLAY	TLCD 02	TLCD 12	TLCD 03	TLCD 05	TLCD 60	TLCD 68
Single LCD	2 digit	2 digit + decimal point	2 digit	2 digit + decimal point		
<b>INPUT</b>						
One	External temperature sensor, wired to the instrument through a cable					
Sensor's cable length	50cm, 2m, 3m	50cm, 3m	10cm, 1.5m, 3m, 6m	3m	75cm, 2m	40cm, 3m
Accuracy	± 1°C	± 1°C / ± 2°F	± 1°C		± 0.5°C	± 1°C
<b>GENERAL</b>						
Power supply	1.5 Vdc battery (LR44 or equivalent)		Solar cell and lithium battery (CR2032)	Solar cell	1.5 Vdc battery (LR44 or equivalent)	
Power consumption	5 µA approx.					
Dimensions	48.2 X 28.7 mm, depth 16.8 mm		62.2 x 29.5 mm, depth 18.7 mm	105 x 38 mm, depth 12 mm	62.2 x 29.5 mm, depth 18.7 mm	60 x 26 mm, depth 15 mm
Mounting	Flush in panel					
Front protection degree	IP65					
Battery location	Back side		Front side	Back side	--	Back side
Case colour	White or black		Grey	White or gray	Black	
<b>FUNCTIONAL</b>						
Measuring range	-50... +70°C	-50.0... +70.0°C / -58.0°F...+158.0°F	-50... +70°C oppure -50... +100°C	-50... +70°C	-50.0... +99.9°C	-50... +70°C
Unit of measurement	°C	°C o °F, on request	°C			
Operating / storage temperature	0... +55°C (32... +31°F) / -30... 70°C (-22... 158°F)					
Operating humidity	30... 95 RH% without condensation					
Conformity	CE					



## HOW TO ORDER

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

TLCD	CODE
<b>DIMENSION AND MODEL</b>	
48 x 28.6 mm – Battery on the back side	02
48 x 28.6 mm – Battery on the back side + Decimal point	12
62 x 29 mm – Battery on the front side	03
105 x 38 mm – Solar cell	05
62.2 x 29.5 mm – Solar cell	60
60 x 26 mm – IP68 Battery on the back side	68
<b>SENSOR'S CABLE LENGHT</b>	
10 cm (TLCD 03)	01
40 cm (TLCD 68)	04
50 cm (TLCD 02, TLCD 12)	05
1.5 m (TLCD 03)	A5
75 cm (TLCD 60)	A7
2 m (TLCD 02, TLCD 60)	20
3 m (excluded TLCD 60)	30
6 m (TLCD 03)	60
<b>CASE COLOUR</b>	
White (TLCD 02, TLCD 12, TLCD 03, TLCD 60)	W
Black (TLCD 02, TLCD 12, TLCD 03, TLCD 68)	B
Grey (TLCD 05, TLCD 60)	G
<b>UNIT OF MEASUREMENT – RANGE</b>	
°C – Range -50... +70°C	-
°F – Range -50... +70°F (TLCD 12)	FA
°C – Range -50... +100°C (TLCD 03)	H

## DIMENSIONS

**TLCD02 / TLCD12**

The dimensions are expressed in mm

**TLCD03**

The dimensions are expressed in mm

**TLCD60**

The dimensions are expressed in mm

**TLCD68**

The dimensions are expressed in mm

# TVRY

• REMOTE DISPLAY FOR CONTROLLERS  
TLY SERIES



## FEATURES

DISPLAY	TVRY
Single	2 1/2 red digit, h 14 mm
GENERAL	
Power supply	12 Vdc (directly supplied by the connected instrument)
Power consumption	1 VA approx. (to be added to the power consumption of the connected instrument)
Dimensions / Weight	64 x 31 mm, depth 30 mm / 35 g approx.
Connections	by means of suitable 5 pole connector or screw terminal block 1.5 mm <sup>2</sup>
Mounting	Flush in panel in 59 x 25 mm hole
Front protection degree	IP65, mounted in 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 (Instrument working at a nominal voltage lower than 50 Vac and 75 Vdc)



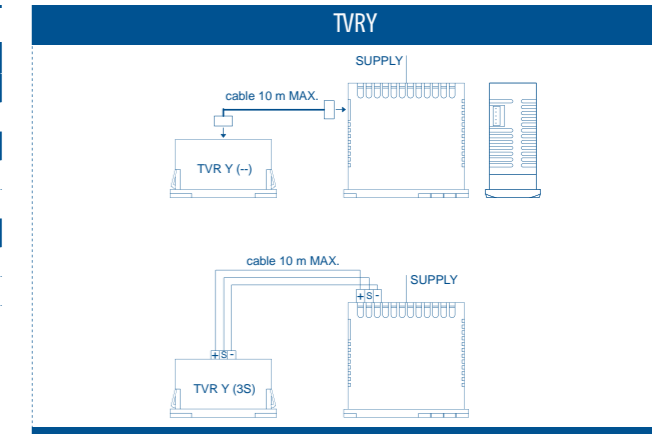
EVERYTHING UNDER CONTROL

## HOW TO ORDER

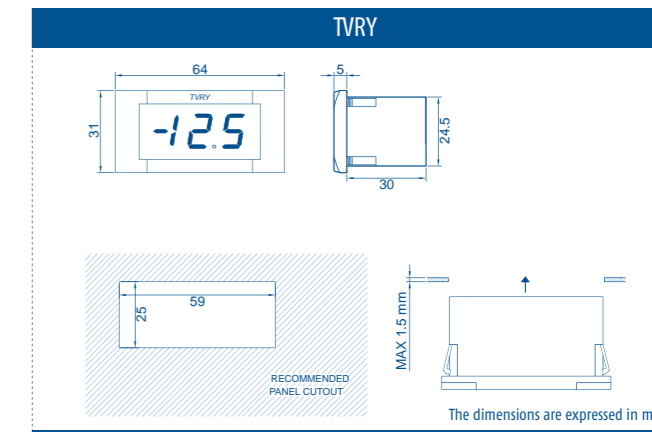
To compose the part number, pls. choose one of the option for each variable

TVRY	CODE
COMPATIBLE INSTRUMENT	
TLY series	Y
CONNECTION CABLE	
2 m	220
Without cable	-
CONNECTOR / FUNCTIONING MODE	
3 pole / slave	3S
5 pole / master	-

## CONNECTIONS



## DIMENSIONS





# X31L

- ALARMS/EVENTS INDICATORS
- SENSITIVE-TOUCH KEYBOARD
- UP TO 10 DIGITAL INPUTS



**FEATURES**

X31L	
<b>DISPLAY</b>	Single 3 red or blue digit, h 15.5 mm
<b>INPUTS</b>	Ten 10 digital inputs for free voltage contacts or voltage contacts (24 Vac/Vdc)
<b>OUTPUT</b>	One, for alarm indication OUT: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2 HP 250 Vac, 1/3 HP 125 Vac)
<b>FUNCTIONAL</b>	Relay operations 100000 operations
<b>GENERAL</b>	Acoustic alarm Internal buzzer (optional)
<b>Power supply</b>	24 Vac/Vdc, 100...240 Vac ±10% (50/60 Hz)
<b>Power consumption</b>	4 VA approx.
<b>Dimensions / Weight</b>	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals / 130 g approx.
<b>Keyboard</b>	Mechanical or "Sensitive Touch"
<b>Connections</b>	Screw terminal block 2.5 mm <sup>2</sup> or plu-in connector with screw terminals 2.5 mm <sup>2</sup>
<b>Mounting</b>	Flush in panel in 71 x 29 mm hole
<b>Front protection degree</b>	IP65, mounted in panel with gasket
<b>Operating / storage temperature</b>	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
<b>Operating humidity</b>	30... 95 RH% without condensation
<b>Conformity</b>	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)



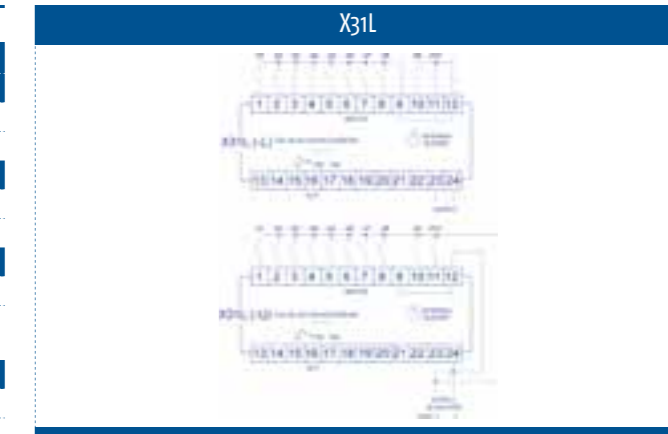
## HOW TO ORDER

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

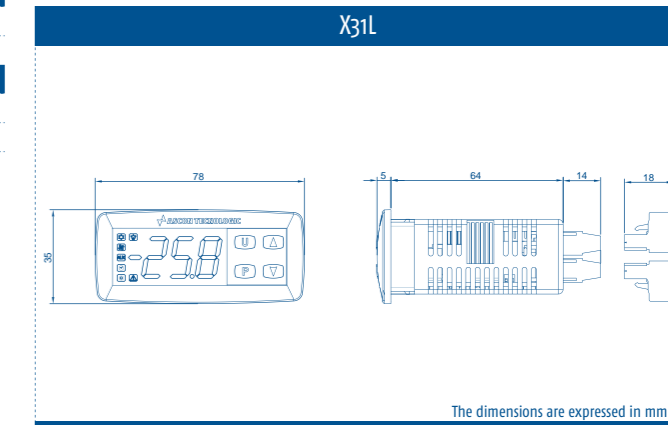
X31L	CODE
<b>KEYBOARD</b>	
Mechanical	-
Sensitive-Touch (*)	S
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
100... 240 Vac	H
<b>INPUT</b>	
For free voltage contacts	L
24 Vac/Vdc voltage contacts (24 V supply only)	U
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	U
Red (standard)	-

(\*) Capacitive Touch screen keyboard

## CONNECTIONS



## DIMENSIONS



## 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, multi-step controllers, milk tank controllers and also "custom" products to meet specific customer requirements.

# SPECIAL CONTROLLERS

FEATURES	K31D	Y39D	TLK31C	TLS35	W09D	TLK33	TLJ29M	TLJ35M
Dimensions (mm)	78 x 35 70 x 84 4 DIN rail module 75x122	•	•	•	•	•	•	•
Single display	•	•	•	•	•	•	•	•
Digit	4	3	4	4	3	4	4	4
Inputs	Number of input	2	2	1	2	3	1	1
	PTC-NTC	•	•	•	•	•	•	•
	Pt1000	•	•	•	•	•	•	•
	TC J,K,S, IR + Pt100	•	•	•	•	•	•	•
	TC J,K,S, IR + PTC, NTC	•	•	•	•	•	•	•
Relay outputs	0/4... 20mA	•	•	•	•	•	•	•
	0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V	•	•	•	•	•	•	•
	Digital	2	1	2	1	1	2	1
Voltage output 12... 24 Vdc and Vdc for SSR driving output (10mA/Vdc)	4	3	4	3	3	2	3	3
Power supply	12 Vac/Vdc	•	•	•	•	•	•	•
	12... 24 Vdc	•	•	•	•	•	•	•
	24 Vac/Vdc	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•
Control	ON/OFF	•	•	•	•	•	•	•
	ON/OFF, Neutral Zone, PID single and dual action	•	•	•	•	•	•	•
	ON/OFF, Neutral Zone, proportional	•	•	•	•	•	•	•
RS485	•	•	•	•	•	•	•	•
Control function	Differential	Differential	Multi-step	Differential	Differential	For Peltier cells	For milk tanks	For milk tanks
CE certification	•	•	•	•	•	•	•	•
UL approval	•	•	•	•	•	•	•	•

THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PIC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

# DIFFERENTIAL CONTROLLERS

- UP TO 3 INPUTS AND 4 OUTPUTS
- RS485 OR TTL SERIAL COMMUNICATION



### FEATURES

	K31D	Y39D
<b>DISPLAY</b>		
Single	4 red digit, h 12 mm + 3 LEDs bargraph	3 red or blue digit, h 15.5 mm
<b>INPUTS</b>		
Two	2x Thermistors PTC KTY 81-121 (990Ω at 25°C): -55... +150°C / -67... +302 °F or 2x Thermistors NTC 103AT-2 (10kΩ at 25°C): -50... +109°C / -58... +228 °F or 2x Thermoresistances Pt1000 (10000Ω at 0°C): -99.9... +500°C / -148... +932°F	2x Thermistors PTC KTY 81-121 (990Ω at 25°C): -50... +150°C / -58... +302 °F or 2x Thermistors NTC 103AT-2 (10kΩ at 25°C): -50... +109°C / -58... +228 °F or 2x Thermoresistances Pt1000 (10000Ω at 0°C): -99.9... +500°C / -148... +932°F
Digital inputs	2 digital inputs for free voltage contacts	1 digital input for free voltage contacts as alternative to inputs Pr3
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit	± 0.5 % fs + 1 digit
<b>OUTPUTS</b>		
Up to 4 (K31D) or Up to 3 (Y39D)	OUT1 and OUT2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3 and OUT4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving	OUT1: Relay SPST-NO (16A-AC1, 6AA-C3 250 Vac, 1 HP 250 Vac, 1/2 HP 125 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2 HP 250 Vac, 1/3 HP 125 Vac) OUT3: Relay SPST-NO (5A-AC1, 2A-AC3 250 Vac, 1/8 HP 250-125 Vac). 16 A max. for common relay (term. 1), 12 A max for plug-in version
<b>FUNCTIONAL</b>		
Control	ON/OFF, Neutral zone, PID single and dual action, programmable	ON/OFF
Real Time Clock	--	Internal clock to manage defrosting at programmed times
Serial communication	RS485 with Modbus RTU 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	4 VA approx.	
Dimensions	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals	
Weight	150 g approx.	130 g approx.
Keyboard	Mechanical	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) / -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)	



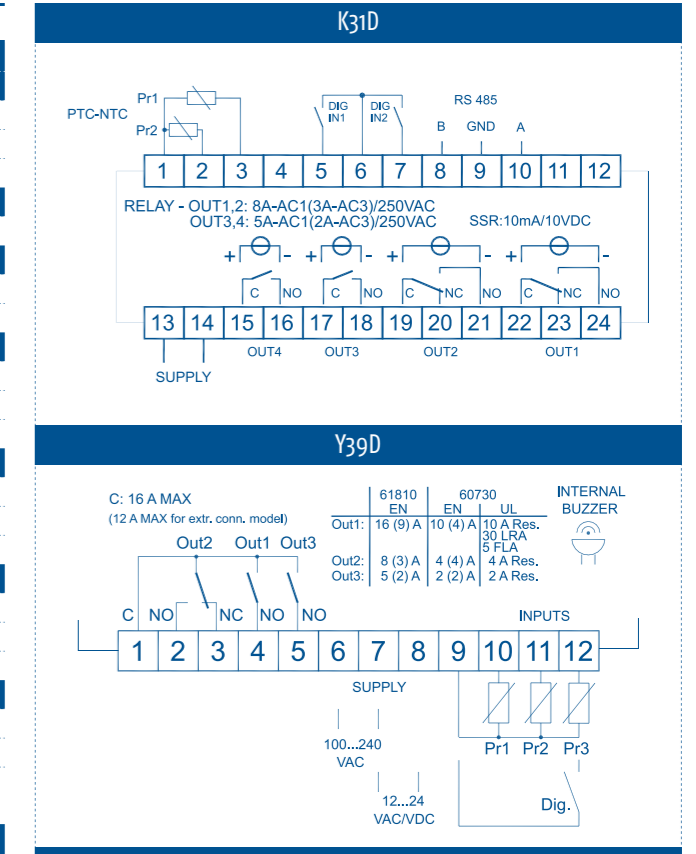
# HOW TO ORDER

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

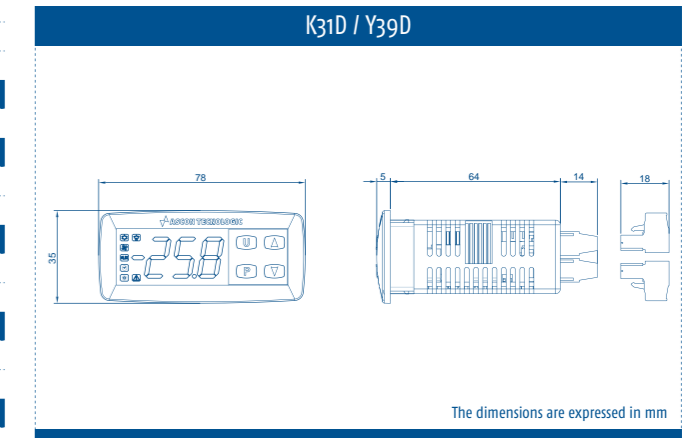
K31D	CODE
<b>POWER SUPPLY</b>	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
<b>INPUT</b>	
2 inputs for PTC/NTC sensors	2
<b>OUT 1</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
<b>OUT 2</b>	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	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	-

Y39D	CODE
<b>KEYBOARD</b>	
Sensitive Touch (*)	S
Mechanical	-
<b>POWER SUPPLY</b>	
12 V AC/DC	F
12... 24 V AC/DC	G
100... 240 V AC	H
<b>OUT 1</b>	
Relay SPST-NO-16A-AC1	R
<b>OUT 2</b>	
Relay SPDT 5A-AC1	R
Not available	-
<b>OUT 3</b>	
Relay SPDT 5A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Plug-in screw type	E
Fix screw type (standard)	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-

# CONNECTIONS



# DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# DIFFERENTIAL CONTROLLERS

- UP TO 3 INPUTS AND 3 OUTPUTS
- TTL SERIAL COMMUNICATION



### FEATURES

	TLS35	WogD
<b>DISPLAY</b>		
Single	4 red digit, h 12 mm	3 red or blue digit, h 15.5 mm
<b>INPUTS</b>		
Two (TLS35)	2x Thermistors PTC KTY 81-121 (990Ω at 25 °C): -50... +150°C / -58... +302 °F oppure	3x Thermistors PTC KTY 81-121 (990Ω at 25 °C): -50... +150°C / -58... +302 °F ore
Three (WogD)	2x Thermistors NTC 103AT-2 (10KΩ at 25 °C): -50... +109°C / -58... +228 °F	3x Thermistors NTC 103AT-2 (10KΩ at 25 °C): -50... +109°C / -58... +228 °F
Digital inputs	1 digital input for free voltage contacts	1 digital input for free voltage contacts as alternative to inputs Pr3
Accuracy	± 0.5 % fs + 1 digit	
<b>OUTPUTS</b>		
Up to 3	OUT1: Relay SPST-NO (16A-AC1, 6A- AC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) o SPDT (16A-AC1- NO, 8A-AC1-NC, 6A-AC3 250 Vac,1HP 250Vac, 1/2HP 125 Vac) OUT2 and OUT3: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250Vac, 1/3HP 125 Vac)	OUT1: Relay SPST-NO (14A-AC1, 6AAC3 250 Vac, 1 HP 250 Vac, 1/2 HP 125 Vac) OUT2: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2 HP 250 Vac, 1/3 HP 125 Vac) OUT3: Relay SPST-NO (4A-AC1, 2A-AC3 250 Vac, 1/8 HP 250-125 Vac). 16 A max. for common (term. 12)
<b>FUNCTIONAL</b>		
Control		ON/OFF
Real Time Clock	--	Internal clock to manage defrosting at programmed times
Serial communication		TTL ModBus
<b>GENERAL</b>		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	100... 240 Vac ±10% (50/60 Hz)
Power consumption	5 VA approx.	4 VA approx.
Dimensions	4 DIN rail module 70 x 84 mm, depth 60 mm	75 x 122 mm, depth 34 mm
Weight	180 g	135 g
Keyboard		Mechanical
Connections		On OMEGA DIN A rail
Mounting		Screw terminal block 2.5 mm <sup>2</sup>
Front protection degree		IP 40 (IP20 on terminal block)
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)



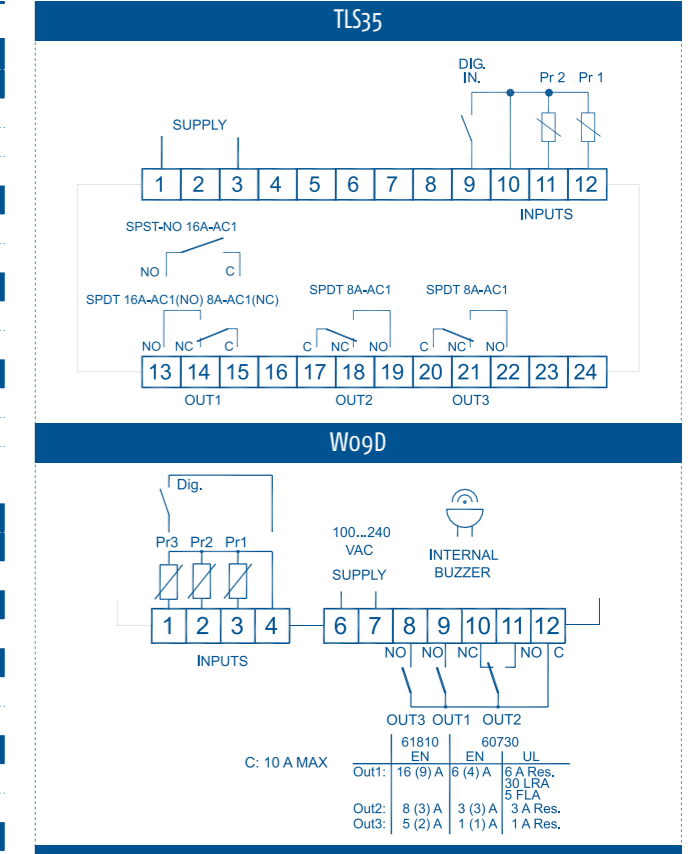
# HOW TO ORDER

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

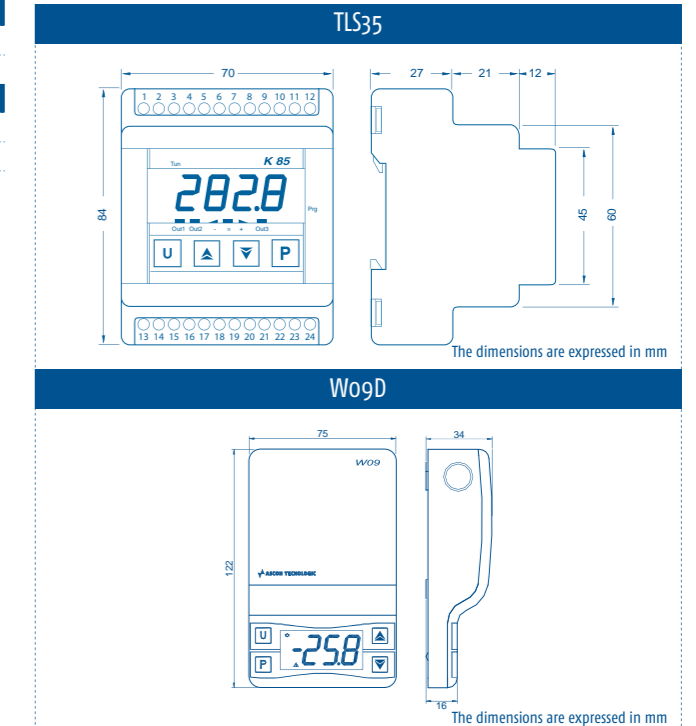
TLS35	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
90...240 Vac	H
12 Vac/Vdc	F
<b>OUT 1</b>	
Relay SPDT 16A AC1	S
Relay SPST-NO-16A AC1	R
<b>OUT AL1</b>	
Relay SPST-NO-8A AC1	R
Not available	-
<b>OUT AL2</b>	
Relay SPST-NO-8A AC1	R
Not available	-

WogD	CODE
<b>POWER SUPPLY</b>	
100...240Vac	H
<b>OUT 1</b>	
Relay SPDT-8A-AC1	R
<b>OUT 2</b>	
Relay SPDT-8A-AC1	R
Not available	-
<b>OUT 3</b>	
Relay SPST-NO 5A-AC1	R
Not available	-
<b>BUZZER (INTERNAL)</b>	
Available	B
Not available	-
<b>CONNECTIONS</b>	
Fix screw type	-
<b>DISPLAY</b>	
Blue	B
Red (standard)	-
<b>REAL TIME CLOCK</b>	
Available	C
Not available	-

# CONNECTIONS



# DIMENSIONS



THERMOSTATS AND CONTROLLERS  
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SUPERVISION  
ACCESSORIES

# MULTI-STEP CONTROLLER

- 4 OUTPUTS
- RS485



## FEATURES

DISPLAY	
Single	TLK31C 4 red digit, h 12 mm + 3 LEDs Bargraph
INPUTS	
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
OUTPUTS	
Up to 4	OUT 1 and OUT 2: Relay SPDT 8A-AC1, 3A-AC3/250 VAC or 8mA/8VDC for SSR driving OUT 2 and OUT 3: Relay SPST-NO 8A-AC1, 3A-AC3/250 VAC or 8mA/8VDC for SSR driving
Auxiliary supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral zone, Proportional
Set Point	4 Set Points programmable
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	12 Vac/Vdc ±10%
Power consumption	4 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm / 150 g approx.
Connections	Screw terminal block 2.5 mm²
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)

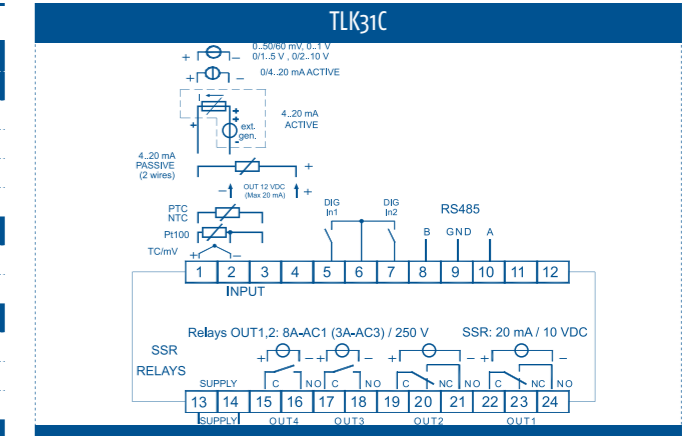


# HOW TO ORDER

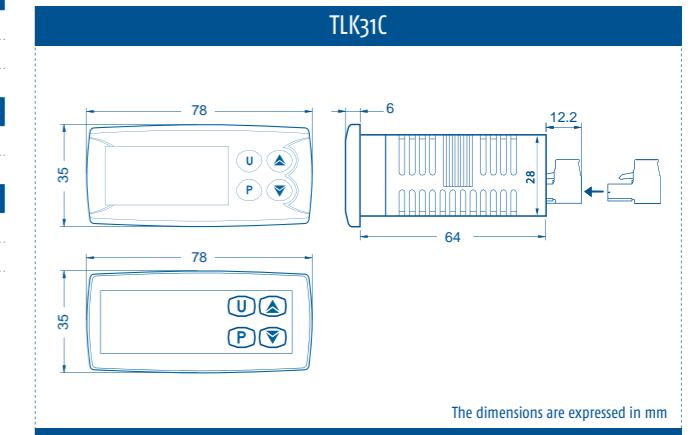
To compose the part number, pls. choose one of the option for each variable

TLK31C	CODE
INPUT	
PT100 + TC (J,K,S,IRS), mV	D
PTC,NTC,mV + TC (J,K,S,IRS)	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
OUT 1	
Relay 8A SPDT	R
Vdc for SSR driving	0
OUT 2	
Relay 8A SPDT	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay 8A SPST-NO	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Relay 8A SPST-NO	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
Not available	-
DIGITAL INPUTS	
2 digital inputs	I
Not available	-

# CONNECTIONS



# DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# PELTIER CELLS CONTROLLER

- PID CONTROL
- UP TO 2 OUTPUTS
- RS485



## FEATURES

DISPLAY	TLK33
Single	4 red digit, h 12 mm
INPUTS	
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
OUTPUTS	
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.
FUNCTIONAL	
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
GENERAL	
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)



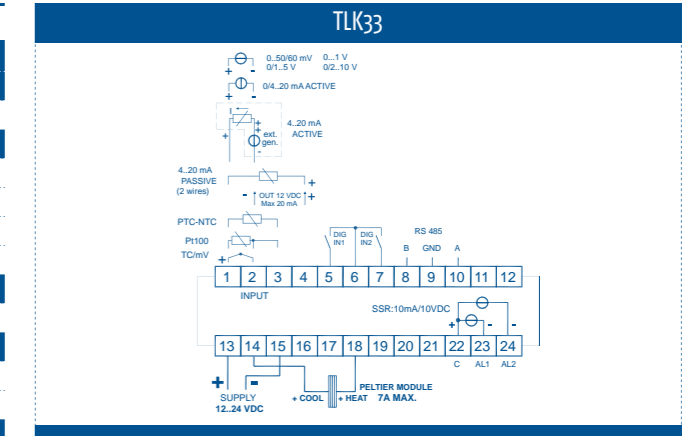
# HOW TO ORDER

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

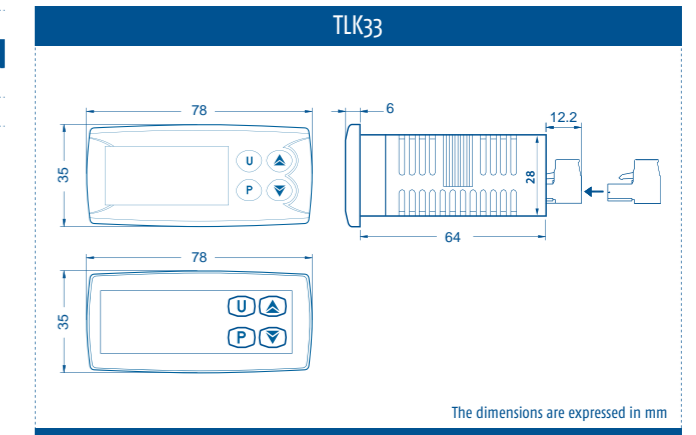
TLK33	CODE
POWER SUPPLY	
12... 24 Vdc	G
INPUT	
PT100 + TC (J,K,S,IRS), mV	D
PTC,NTC,mV + TC (J,K,S,IRS)	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
CONTROL OOUTPUTS ( 2 FOR SSR )	
12... 24 Vdc for Peltier cells (7A max)	0
OUT AL1	
Vdc for SSR driving	0
Not available	-
OUT AL2	
Vdc for SSR driving	0
Not available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

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

# CONNECTIONS



# DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# MILK TANK CONTROLLERS

- TEMPERATURE AND AGITATOR CONTROL
- 1 INPUT AND UP TO 3 OUTPUTS



FEATURES		TLJ29M	TLJ35M
DISPLAY	Single	4 red digit, h 12 mm	
INPUTS	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 inputs	Accuracy	1 digital input for free voltage contacts ± 0.5% span + 1 digit	
OUTPUTS	Up to 3	OUT1: Relay SPST-NO (16A-AC1, 6A-AC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) OUT2 agitator: Relay SPDT (8A-AC1, 3A-AC3 250 Vac) OUT3: Relay SPSTNO (5A-AC1, 2A-AC3 250 Vac) 16 A max. for Common (term. 1)	OUT1: Relay SPST-NO (16A-AC1, 6AAC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) or SPDT (16A-AC1-NO, 8A-AC1-NC, 6A-AC3 250 Vac, 1HP 250Vac, 1/2HP 125 Vac) OUT2 agitator: Relay SPDT (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250Vac, 1/3HP 125 Vac) OUT3: Relay SPST-NO (8A-AC1, 3A-AC3 250 Vac, 1/2HP 250Vac, 1/3HP 125 Vac)
Relay operations		OUT SPST-NO: 100000 operations, OUT SPDT: 50000 operations	OUT SPST-NO: 100000 operations, OUT SPDT: 50000 operations (VDE), AGIT and OUT4: 100000 operations
<b>FUNCTIONAL</b>			
Control		ON/OFF	
Agitator control		With automatic or manual cycle	
Acoustic alarm		Internal buzzer (optional)	
<b>GENERAL</b>			
Power supply		12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac ±10% (50/60 Hz)	
Power consumption		4 VA approx.	
Dimensions / Weight		78 x35 mm, depth 64 mm / 115 g approx.	70 x 84 x 60 mm, 4 DIN rail module / 180 g approx.
Mounting		Flush in panel in 71 x 29 mm hole	On OMEGA DIN A rail
Connections		Screw terminal block 2.5 mm <sup>2</sup>	
Front protection degree		IP65, mounted in panel with gasket	IP20
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) Directive 2004/108/CE (EN 61326; 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 61010-1, EN 60730-1, EN 60730-2-7, EN 60730-2-9)	



EVERYTHING UNDER CONTROL

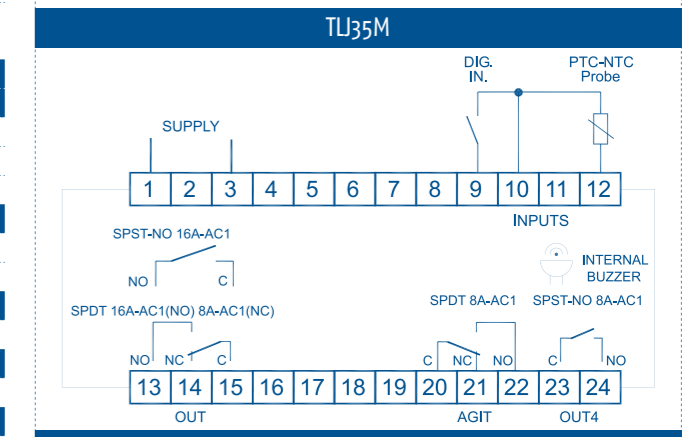
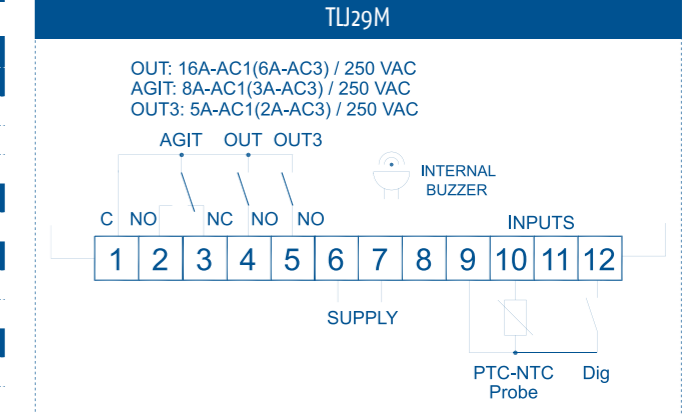
## HOW TO ORDER

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

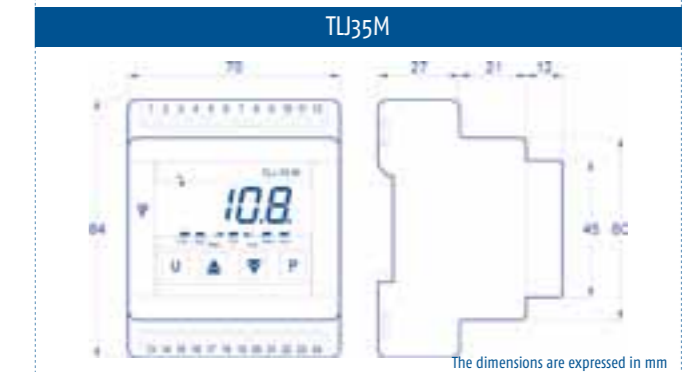
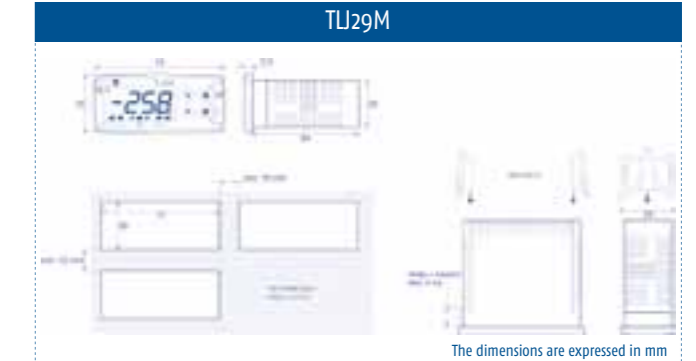
TLJ29 M	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
90...240 Vac	H
12 Vac/Vdc	F
<b>OUT 2</b>	
Relay	R
<b>OUT 3</b>	
Relay	R
Not available	-
<b>BUZZER</b>	
Available	B
Not available	-

TLJ35 M	CODE
<b>POWER SUPPLY</b>	
24 Vac/Vdc	L
90...240 Vac	H
12 Vac/Vdc	F
<b>OUT 1</b>	
Relay SPDT 16A AC1	S
Relay SPST-NO-16A AC1	R
<b>BUZZER</b>	
Available	B
<b>OUT 3</b>	
Relay	R
<b>OUT 4</b>	
Relay	R
Not available	-

## CONNECTIONS



## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES



## 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.

Within Sigma2 line, two hardware solutions are available: one modular and distributed (SigmaPAC: CU02) and one compact (MicroPAC: M81, MP02).

# PAC SYSTEMS

FEATURES		M8i		MP02	CU02
Dimensions (mm)	10 moduli DIN (175 x 110 mm) 8 moduli DIN (152 x 110 mm)	•		•	•
Inputs (16 bit)	Ingresso universale			2	
	NTC-PT1000	8			
	0/4... 20 mA, 0/1... 5V, 0... 10V	4		6+2	
	Digitali	12		8 + 32 (*)	1
	Potenziometro Raziometrico (5V)	1		2	
Relay or voltage outputs		10		8+32 (*)	2
Analogue outputs (current or voltage)				4	
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		1	2
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)

# M81 SIGMA2

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



**FEATURES**

M81	
<b>INPUTS</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)
<b>OUTPUTS</b>	
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
<b>FUNCTIONAL</b>	
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
<b>GENERAL</b>	
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

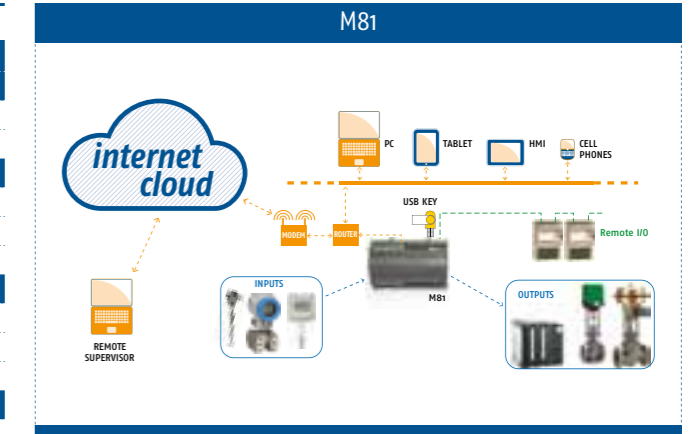
To compose the part number, pls. choose one of the option for each variable

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

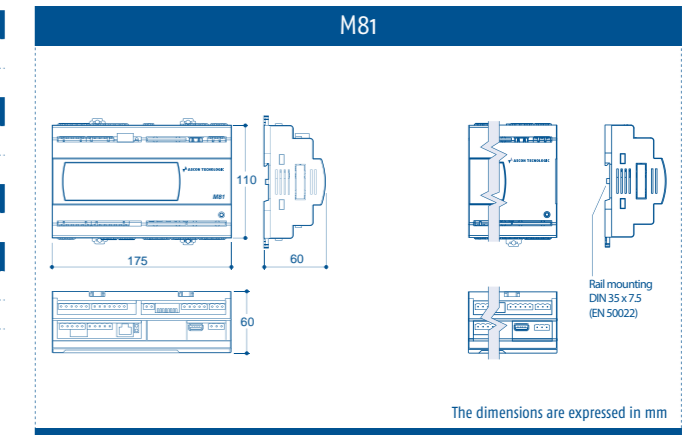
## ACCESSORIES

<b>CABLES</b>	
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
<b>POWER ADAPTORS</b>	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A

## CONNECTIONS



## DIMENSIONS



# 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		
<b>INPUTS</b>		
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	
	<b>OUTPUTS</b>	
	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	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	
	8 + 32 Digital Protection: Reverse polarity and short circuit Insulation 800V between channels and power supply	
<b>FUNCTIONAL</b>		
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	
<b>GENERAL</b>		
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

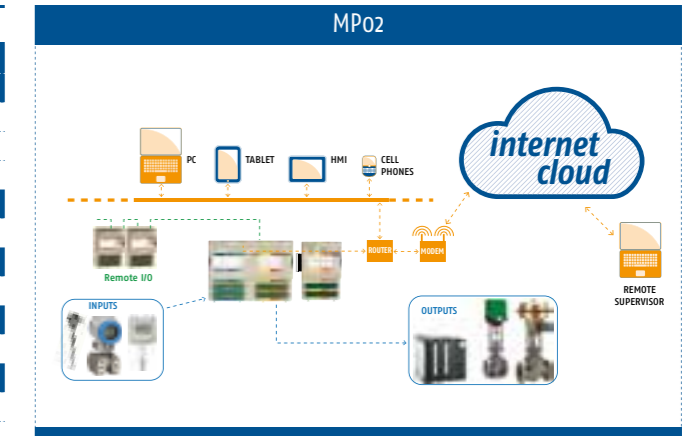
MP02	CODE
<b>ANALOGUE INPUTS</b>	
6 ch - 0/4... 20mA, Volt	0
8 ch - 0/4... 20mA, Volt	1
6 ch - 0/4... 20mA, Volt + Universal channels	2
<b>RESERVED PART NO.</b>	
-	-
<b>RESERVED PART NO.</b>	
-	-
<b>RESERVED PART NO.</b>	
-	-
<b>ANALOGUE OUTPUTS 1...4</b>	
Not available	0
2 ch. - 0/4... 20mA, Volt	1
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

## ACCESSORIES

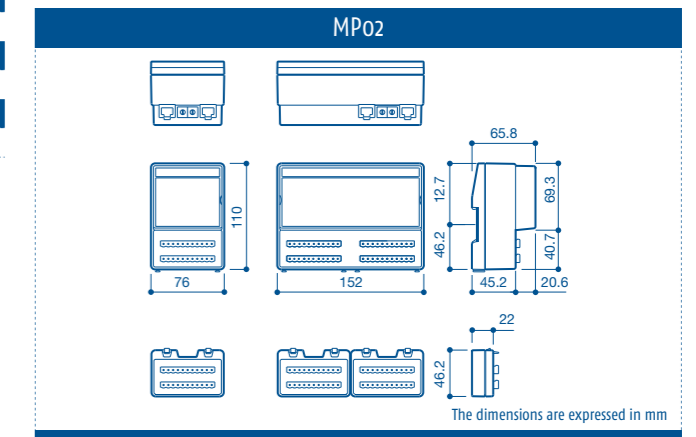
<b>CABLES</b>	
APS2 CABLEUCONF	RS232 CABLE 2M, CONFIG. CU, PC-DB9F/CU-RJ45
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
<b>POWER ADAPTORS</b>	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
<b>FILTERS</b>	
APS2 FILTRI	FERRITES + FILTERS
<b>PLUGS</b>	
APS2 SPINAM11	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

EVERYTHING UNDER CONTROL

## CONNECTIONS



## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PAC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

# MP-D 1/2/4

• EXPANSION UNITS FOR MICROPAC MP02



**FEATURES**

	MP-D1/08-08/Mo	MP-D2/08-08/Mo	MP-D4/08-08/Mo	MP-D1/16-16/Mo
<b>INPUTS</b>				
Digital	8 inputs (24 Vdc)		8 inputs (120 Vac)	16 inputs (24 Vdc)
<b>OUTPUTS</b>				
Digital	8 outputs (24 Vdc, 0.5A)	8 relay outputs 2A, NO		16 outputs (24 Vdc, 0.5A)
<b>GENERAL</b>				
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			



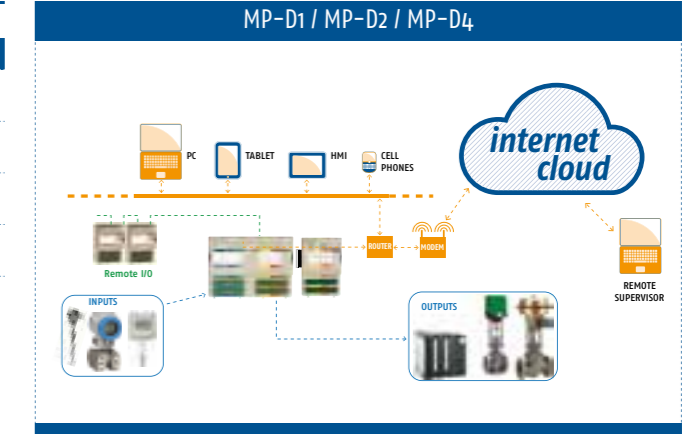
EVERYTHING UNDER CONTROL

## HOW TO ORDER

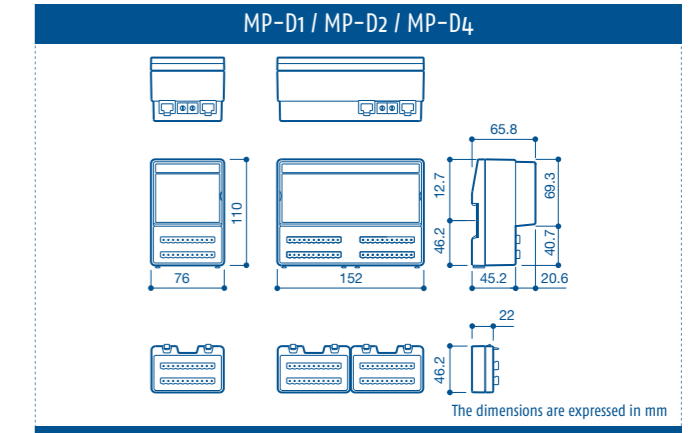
To compose the part number, pls. choose one of the option for each variable

EXPANSION UNITS - SIGMA2 MICROPAC	
MP-D1/08-08/Mo	8 digital inputs 24Vdc optoisolated + 8 digital outputs 24V 0.5V optoisolated
MP-D1/16-16/Mo	16 digital inputs 24Vdc optoisolated + 16 digital outputs 24V 0.5V optoisolated
MP-D2/08-08/Mo	8 digital inputs 24Vdc + 8 digital outputs 230Vac/2A relay SPST-NO
MP-D4/08-08/Mo	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	
<b>INPUT</b>	CONTROL UNIT – SIGMAPAC LINE – CU02
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".



EVERYTHING UNDER CONTROL

## HOW TO ORDER

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

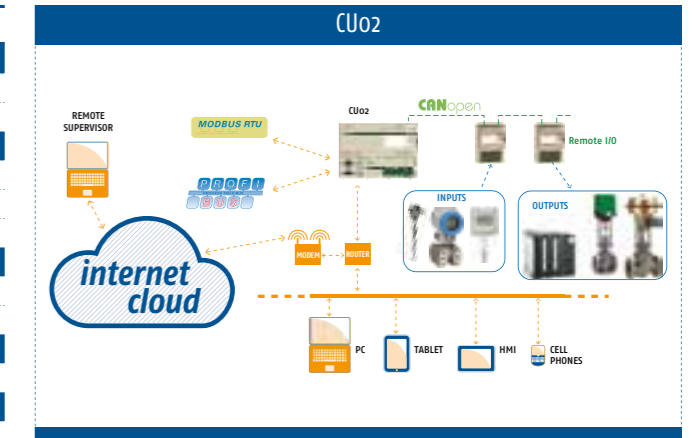
CPU MODULE – SIGMA2	CODE
Model o1 – spare parts only	- 01
Model o2	- 02
<b>SERIAL COMMUNICATION</b>	
Not available	0
Profibus	2
RS232 + RS485	5
<b>SERIAL COMMUNICATIONS</b>	
RS232	0
USB	1
<b>ETHERNET</b>	
Available	1
<b>INSTRUCTION MANUAL</b>	
Italian / English	0
Not available	9
<b>CUSTOMIZATION</b>	
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

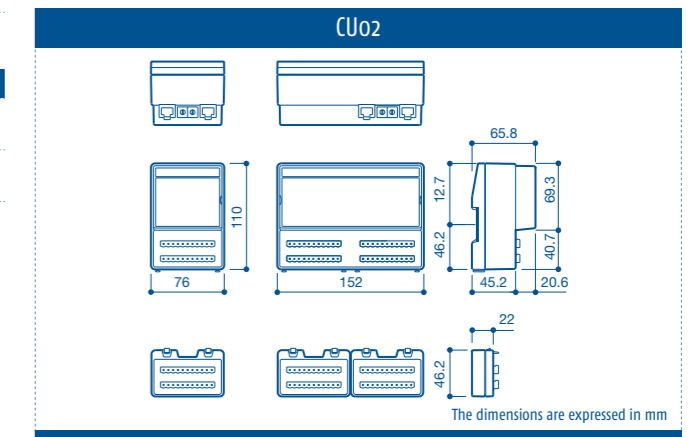
## ACCESSORIES

CABLES	
APS2 CABLECUCONF	RS232 CABLE 2M, CONFIG. CU, PC-DB9F/CU-RJ45
APS2 CABLECUPROG	ETHERNET CABLE 2M, PROGRAMM. CU, PC-RJ45/CU-RJ45
<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 14 POLE SCREW TERMINALS

## CONNECTIONS



## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
 INDICATORS  
 SPECIAL CONTROLLERS AND "CUSTOM"  
 PAC SYSTEMS  
 PRE-PROGRAMMED SYSTEMS  
 PLC AND OPERATOR PANELS  
 I/O MODULES  
 SUPERVISION  
 ACCESSORIES

# OPENPCS

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

FEATURES

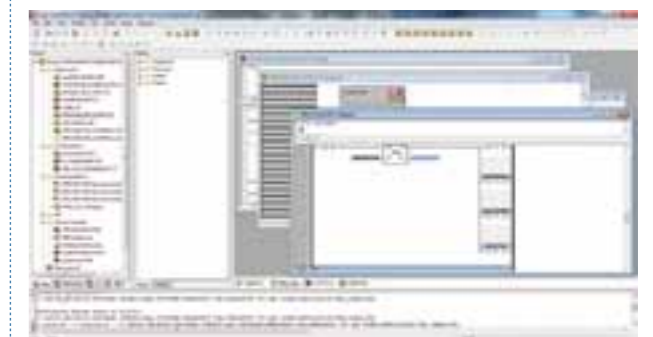
FUNCTIONAL	SOFTWARE OPENPCS
Standard	IEC 61131-3
Programming languages	Instruction List Structured Text Function Block Diagram Ladder Diagram Sequential Function Chart Continuous Function Chart
Programming	Application project developing structured and simplified by the variable declaration method and keywords auto-recognition. Integrated online debug and simulation tools. Projects management "easy to use" through 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, Totalizers, Limiters
	AT_Process_Generic_Lib: includes advanced calculation and process functions such as Alarms, Signal'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	
APS2 SWOPCS00	IEC 61131-3 programming software

## SCREENSHOTS



THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

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.



# 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 AUTOMATION



*Flexible*  
control

## PLC AND OPERATOR PANELS



### Solutions for every demand of space!

PLC and operator panels with bright TFT display widescreen high resolutionre 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 8050I	OPMT 6050IV		OPMT 8070IH	OPMT 3070	OPMT 8100I	OPMT 3105/N	OPMT 3120	OPMT 3150/N
Dimensions (inches)	4.3"	•	•	•		•	•				
	7"										
	10"							•			
	10.4"								•		
	12.1"									•	
	15"										•
Flash MB memory		128	128	128		128	256	128	128	256	256
RAM MB memory		128	64	64		64	256	64	64	256	256
Colours		262 K	65 K	66 K		67 K	16.7 M	68 K	68 K	16.2 M	262 K
Slot SD/SDHC card		•				•	•	•	•	•	•
USB Host		•				•	•	•	•	•	•
USB Client				•		•	•	•	•	•	•
Ethernet		•	•			•	•	•	•	•	•
Power supply	24 Vac/Vdc	•	•	•		•	•	•	•	•	•
Audio						•	•	•	•	•	•
Video										•	•
COM1 RS232/485 2 4 wires			•	•		•	•	•	•	•	•
COM2 RS232			•	•		•	•	•	•	•	•
COM3 RS232/485 2 wires			•	•		•	•	•	•	•	•
COM1 RS485 2 wires		•								•	•
CAN bus							•			•	•
Programming Software (optional)		•	•	•		•	•	•	•	•	•
CE certification + UL approval			•	•		•	•	•	•	•	•

FEATURES		P01		P30	P32
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		•		•	•

THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

# P04

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



## FEATURES

DISPLAY	
Display	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

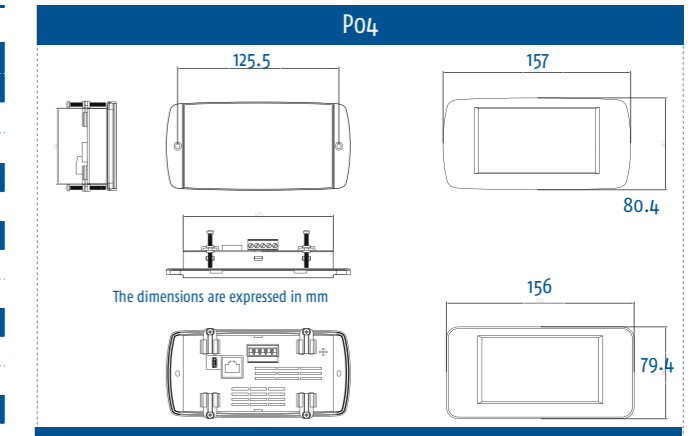


## HOW TO ORDER

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" AND 7"



FEATURES

		OPMT			
DISPLAY	8050I	6050IV	8070IH	3070	
Display	4.3" TFT		7" TFT		
Resolution (pixel)	480 x 272		800 x 480		
Brightness (cd/m <sup>2</sup> )	500		375	500	
Contrast ratio	600:1		500:1		
Back Light type	LED				
Colours	65 K			16.7 M	
Touch panel	4 wire Resistive Type				
<b>MEMORY</b>					
Flash (MB)	128			256	
RAM (MB)	64			256	
<b>I/O PORTS</b>					
Slot SD card	Not available			SD/SDHC	
USB Host	Not available		1.1 x 1	2.0 x 1	
USB Client	Not available			2.0 x 1	
Ethernet	10/100 T	Not available		10/100 base-T	
COM port	COM1 RS232/485 2 and 4w, COM2 RS232, COM3 RS232/RS485 2w			COM1 RS232/485 2 and 4w, COM3 RS232/RS485 2w	
Audio	Not available		Available		
CAN bus	Not available			Available	
RTC	Not available		Available		
<b>POWER SUPPLY</b>					
Power supply	24 Vdc ±20%				
Power consumption (mA @24V)	250		250	400	
<b>MECHANICAL</b>					
Case	UL V04 Autoextinguishing plastic			Aluminium	
Weight	300 g		850 g	900 g	
Protection degree	IP65			IP66	
Operating temperature	0... +50°C / 32°... +122°F			-20... +50°C / -4°... +122°F	
Operating humidity	10...90% RH without condensation				
<b>SOFTWARE</b>					
Software (optional)	Programmable with "Easy Builder 8000" software			Programmable with "Easy Builder Pro" software	



EVERYTHING UNDER CONTROL

## HOW TO ORDER

OPMT	
8050I	4.3" TFT, 65K colours, wide screen 16/9, 480x272 p.
6050IV	4.3" TFT, 65K colours, wide screen 16/9, 480x272 p.
8070IH	7" TFT, 65K colours, 16/9, 800x480 p. 2xUSB+SD card
3070	7" TFT, 16.7M col., 800x480 p. 2xUSB + SD/SDH card

# OPMT

- TOUCH SCREEN OPERATOR PANELS
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 10", 10.4", 12.1" AND 15"



## FEATURES

DISPLAY	OPMT			
	8100I	3105/N	3120	3150/N
Display	10" TFT	10.4" TFT	12.1" TFT	15" TFT
Resolution (pixel)	800 x 480	800 x 600	1024 x 768	
Brightness (cd/m <sup>2</sup> )	300	400	500	350
Contrast ratio	500:1	400:1	700:1	
Back Light type	LED			
Colours	65 K	262K	16.2 M	
Touch panel	4 wire Resistive Type			
<b>MEMORY</b>				
Flash (MB)	128	256		
RAM (MB)	64	256		
<b>I/O PORTS</b>				
Slot SD card	Not available		SD/SDHC	
USB Host	1.1 X 1	2.0 X 1		
USB Client	2.0 X 1	2.0 X 1		
Ethernet	10/100 base-T			
COM port	COM1 RS232/485 2 and 4w, COM2 RS232, COM3 RS232/RS485 2w		COM1 RS232/485 2 and 4w, COM3 RS232/RS485 2w, CAN Bus (CANOpen protocol)	
Audio	Available			
Video	Not available		NTSC/PAL RCAx2	
RTC	Available			
<b>POWER SUPPLY</b>				
Power supply	24 Vdc ±20%			
Power consumption (mA @24V)	300	800	850	900
<b>MECHANICAL</b>				
Case	UL V04 Autoextinguishing plastic		Aluminium	
Weight	1.400 g	1.600 g	2.100 g	2.750 g
Protection degree	IP65		IP66/NEMA4	IP65
Operating temperature	0... +50°C / 32°... +122°F			
Operating humidity	10...90% RH without condensation			
<b>SOFTWARE</b>				
Software (optional)	Programmable with "Easy Builder 8000" software		Programmable with "Easy Builder Pro" software	



EVERYTHING UNDER CONTROL

## HOW TO ORDER

OPMT	
8100I	10" TFT, 65K colours, 800x480 p. 2xUSB + SD card
3105/N	10.4" TFT, 262K colours, 800x600 p. 2xUSB + SD card
3120	12.1" TFT, 16.2M colours, 1024x768 p. 2xUSB
3150/N	15" TFT, 16.2M colours, 1024x768 p. 2xUSB

# 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 in 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)		



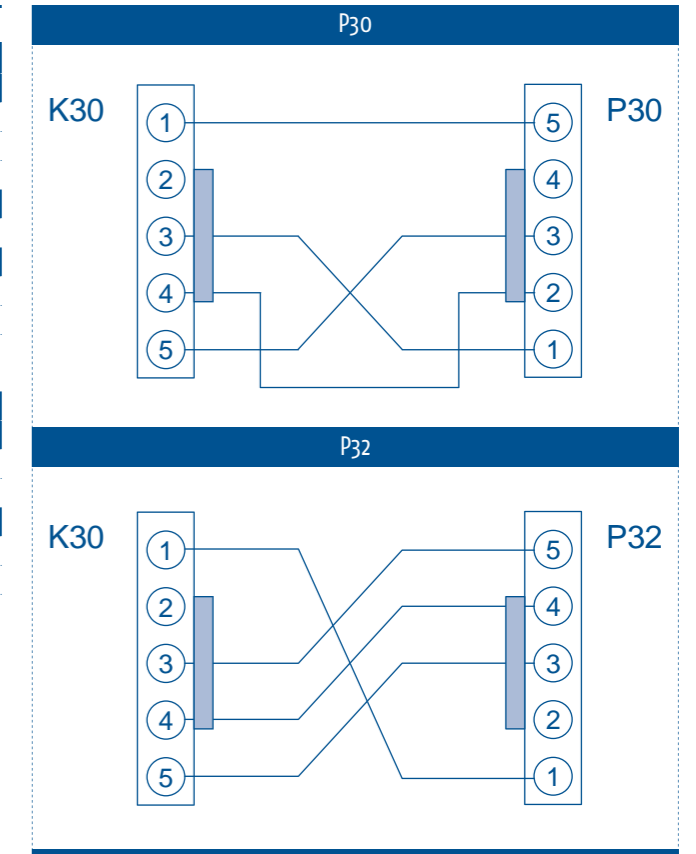
## HOW TO ORDER

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

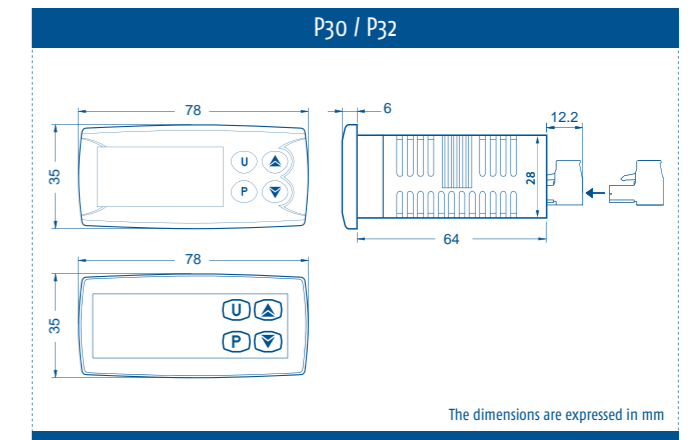
P01	CODE
<b>DISPLAY</b>	
Red	-
Amber	A
Blue	U
<b>INPUT</b>	
From the connected controller	-
<b>OUTPUT</b>	
Out 8 Vdc	W
Not available	-

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

## CONNECTIONS



## DIMENSIONS





## 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			AI		AO	
		02UI	04RT	08TC	08HL	08DP	08HL	08DP
Dimensions (mm)	Single module (76 x 110 mm)	•	•	•	•	•	•	•
Input channels		2	4	8	8	8		
Output channels							8	8
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				DM				DO				
		16LV	16HV	32LV	08TS	16TS	32TS	16TS	16TP	32TR	32TS	04RL	04TX	08RL
Dimensions (mm)	Single module (76 x 110 mm) Dual module (152 x 110 mm)	•	•	•	•	•	•	•	•	•	•	•	•	•
Input channels		16	16	32	8									
Output channels						8	16	16	16	32	32	4	4	8
Inputs	24 Vdc	•		•	•	•	•	•	•	•	•			
	120 Vac		•											
Outputs	24 Vdc				•	•	•	•	•		•		•	
	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	•	
	Digital	•	•
Power supply 24, 110, 230 Vac		•	•
CE certification		•	•

THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PAC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PIC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
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... +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... 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	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac OUT3 and OUT4: logic 0/5 Vdc, not insulated		--
Outputs OUT1-OUT2	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac		--
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	Reference value		--
Setpoint	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	24Vac (-25...+12%), 24Vdc (-15...+25%) (50/60Hz)		--
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.

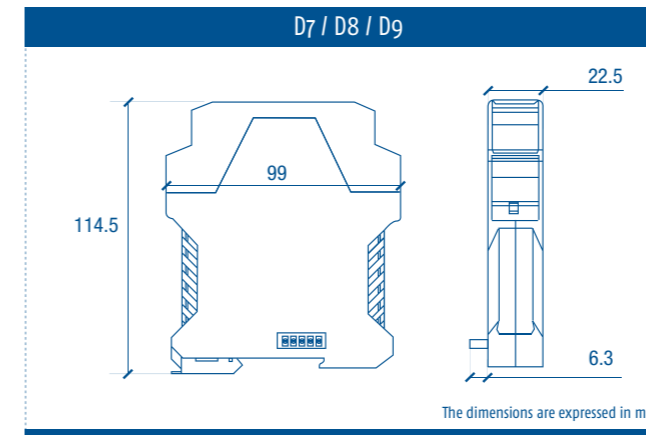


## HOW TO ORDER

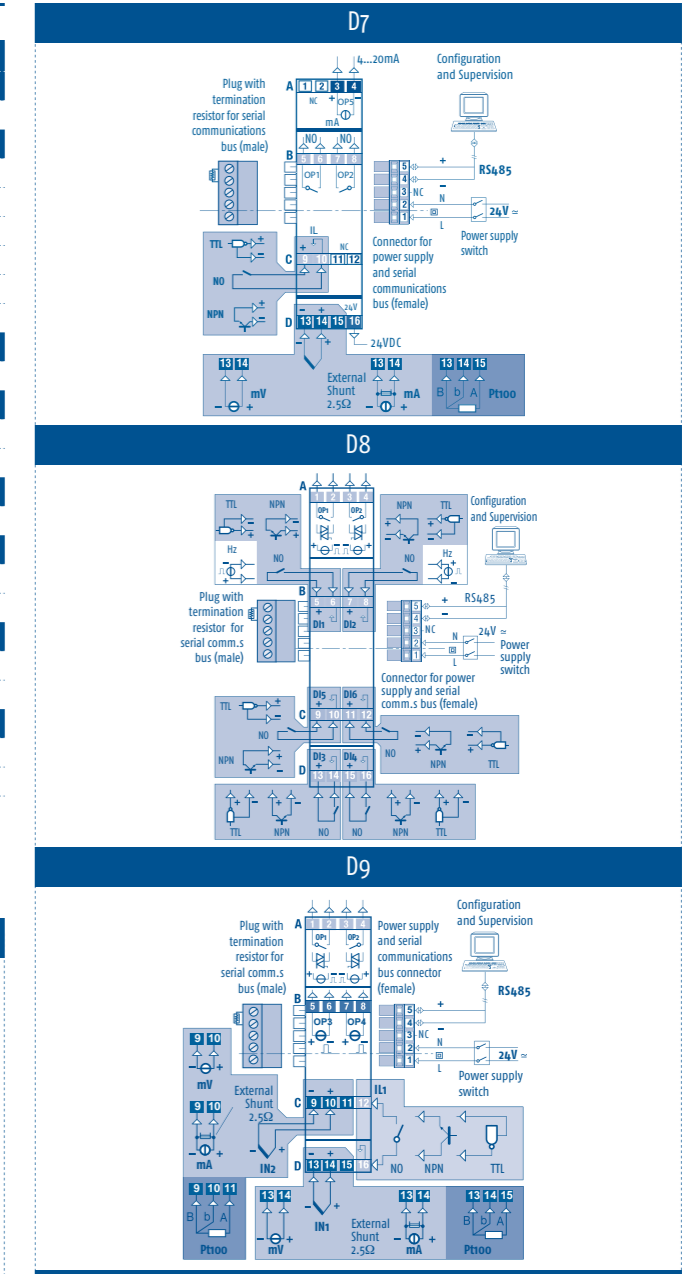
To compose the part number, pls. choose one of the option for each variable

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



## CONNECTIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PAC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PIC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
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	AO-08HL	AO-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						



EVERYTHING UNDER CONTROL

## HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
ANALOGUE INPUTS				
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	
ANALOGUE OUTPUTS				
IO-CBAOo8HL	CANOpen	mA, V unipolar		8
IO-MBAOo8HL	Modbus	mA, V unipolar		8
IO-CBAOo8DP	CANOpen	V dual polarity		8

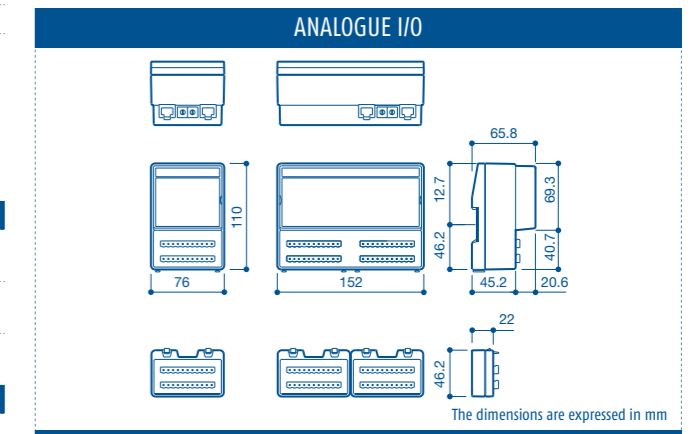
## ACCESSORIES

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	L/J (-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

THERMOSTATS  
AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS  
AND "CUSTOM"

PLC SYSTEMS

PRE-PROGRAMMED  
SYSTEMSPLC AND  
OPERATOR PANELS

I/O MODULES

SUPERVISION

ACCESSORIES

## 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.

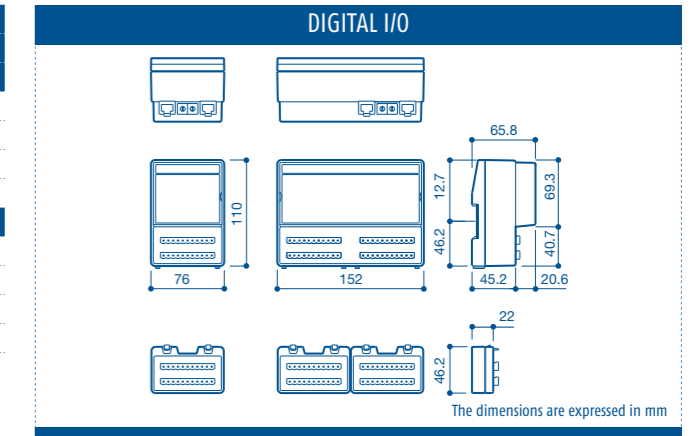


EVERYTHING UNDER CONTROL

## 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-CBD32LV	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

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

## 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.

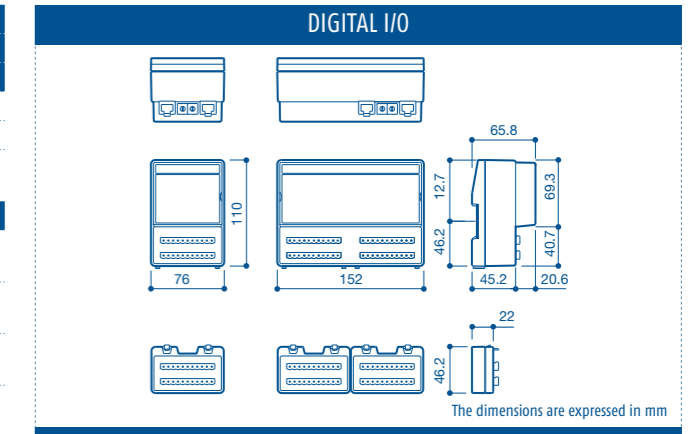


EVERYTHING UNDER CONTROL

## HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
<b>RELAY OUTPUTS</b>				
IO-CBDO04RL	CANOpen	SPST-NO 2 A		4
IO-CBDO04TX	CANOpen	SPST-NO 6 A		4
IO-CBDO08RL	CANOpen	4 SPST-NO 2 A + 4 SPDT 2 A		8
<b>DIGITAL I/O</b>				
IO-CBDM08TS	CANOpen	24 Vdc PNP - 24 Vdc 0.5 A		8
IO-MBDM08TS	Modbus	24 Vdc PNP - 24 Vdc 0.5 A		8
IO-CBDM16TS	CANOpen	25 Vdc PNP - 24 Vdc 0.5 A	8	8
IO-CBDM32TS	CANOpen	26 Vdc PNP - 24 Vdc 0.5 A	16	16

## DIMENSIONS



## 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

# TDA

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



**FEATURES**

	TDA04	TDA08
<b>INPUTS</b>	4 digital inputs for free voltage contacts	
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	
<b>OUTPUT</b>	1 Relay SPST-NO (5A-AC1, 2 A-AC3/250 Vac)	
<b>FUNCTIONAL</b>	RS485 optoisolated – MODBUS RTU (JBUS) protocol	
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
<b>GENERAL</b>	24, 115, 230 Vac ±10% (50/60 Hz)	
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)	



EVERYTHING UNDER CONTROL

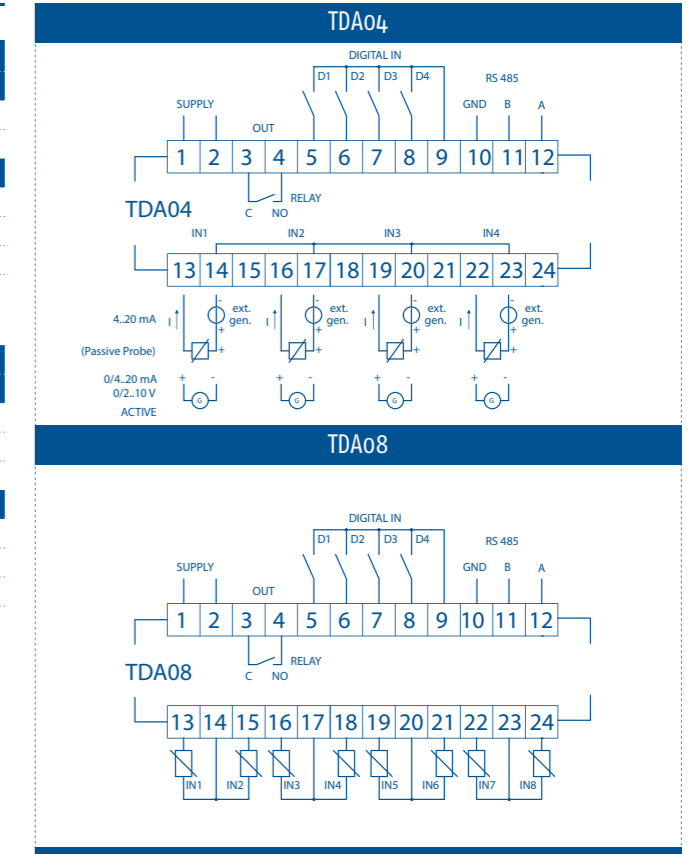
## HOW TO ORDER

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

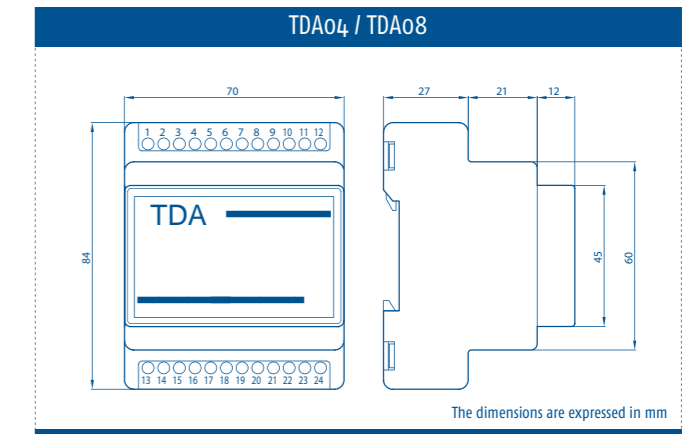
TDA04	CODE
<b>INPUT</b>	
0/2...10V	W
0/4...20 mA	I
<b>POWER SUPPLY</b>	
24 Vac	A
115 Vac	C
230 Vac	D

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



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PAC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES



## 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.

# SUPERVISION

		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		•	•
Functions	Multi master	2	8	4
	Backup instruments (max.32)	•		
	Data transfer (binding)	•		•
	E-mail and SMS			•
	Websver			•
Power supply 24 Vac/Vdc	•	•	•	
CE certification + UL approval (listed)	•		•	

# 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 Dfi 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-Cuo3 - 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



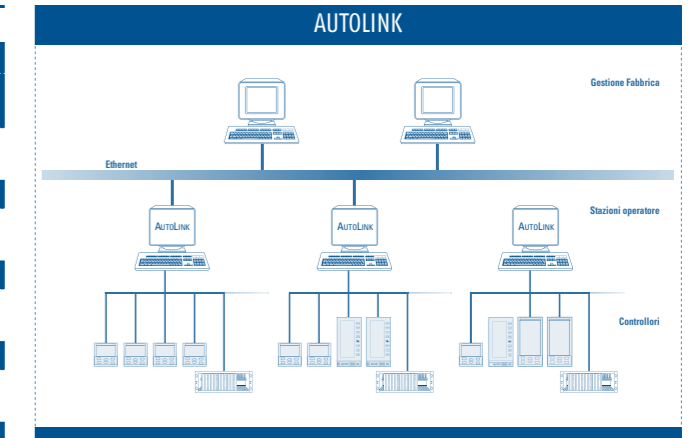
EVERYTHING UNDER CONTROL

## HOW TO ORDER

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

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

## CONNECTIONS



THERMOSTATS AND CONTROLLERS  
 INDICATORS  
 SPECIAL CONTROLLERS AND "CUSTOM"  
 PAC SYSTEMS  
 PRE-PROGRAMMED SYSTEMS  
 PLC AND OPERATOR PANELS  
 I/O MODULES  
 SUPERVISION  
 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)



EVERYTHING UNDER CONTROL

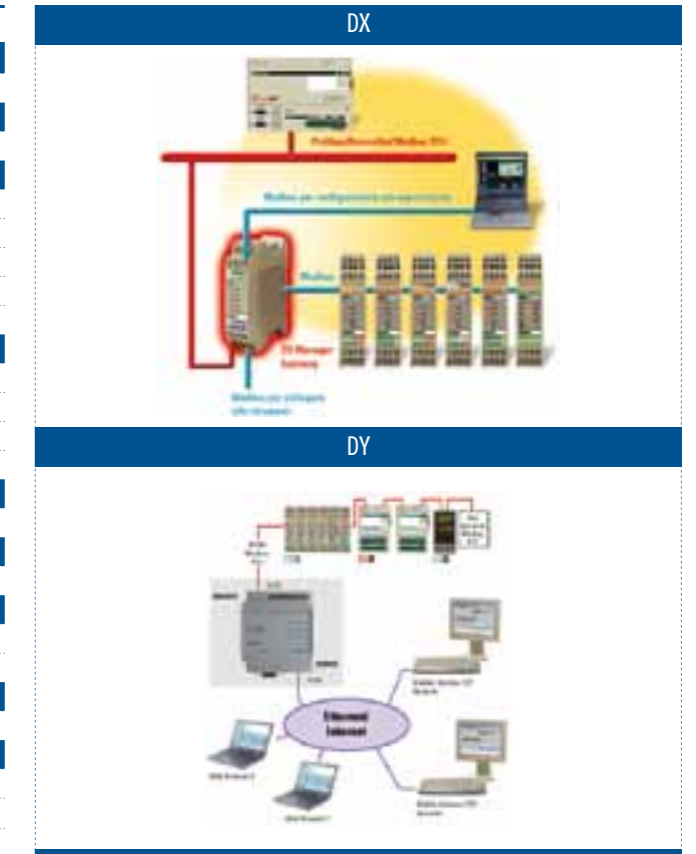
## HOW TO ORDER

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

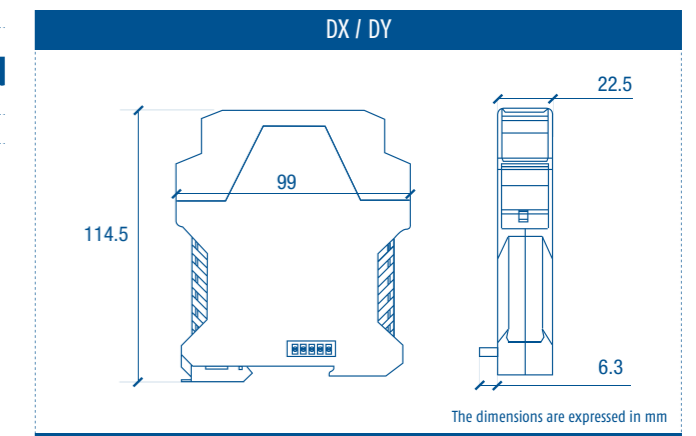
DX	CODE
Gateway/Manager for Delta2/Gamma2 series	
<b>POWER SUPPLY</b>	
24 Vac/Vdc	5
<b>NUMBER OF INSTRUMENTS IN BACKUP</b>	
0 Instruments	0
4 Instruments	1
8 Instruments	2
16 Instruments	3
32 Instruments	4
<b>FIELDBUS COMMUNICATION</b>	
No fieldbus	0
DeviceNet	1
Modbus	5
Profibus DP	7
<b>OPTION 1</b>	
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

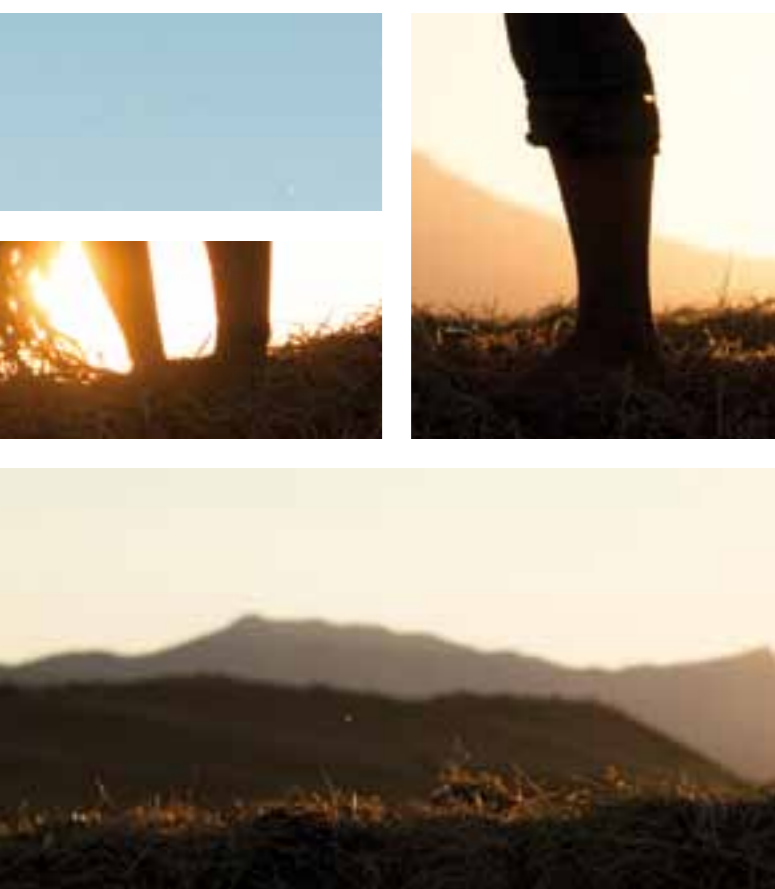


## DIMENSIONS



THERMOSTATS AND CONTROLLERS  
INDICATORS  
SPECIAL CONTROLLERS AND "CUSTOM"  
PLC SYSTEMS  
PRE-PROGRAMMED SYSTEMS  
PLC AND OPERATOR PANELS  
I/O MODULES  
SUPERVISION  
ACCESSORIES

## ACCESSORIES



## 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 TECHNOLOGIC INSTRUMENTS



FEATURES

FUNCTIONAL	
	A01
Functions	The key is able to "dialogue" with: * An instrument and to copy parameters 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 even from failed instruments and permits unlimited copies of configuration, error free.
Serial communication	Interface RS485, not insulated Interface TTL Modubus, 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

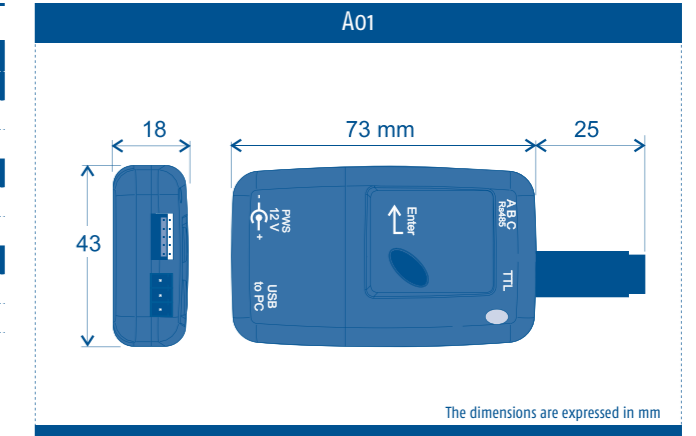


## HOW TO ORDER

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	
<b>GENERAL</b>		
Power supply	24 Vac/Vdc ±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 $\varnothing$ 0.25 to $\varnothing$ 2.5 mm <sup>2</sup> or AWG 23 to AWG 14) RS232/RS485: screw terminal block (M2 screws, for cables $\varnothing$ 0.25 to $\varnothing$ 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

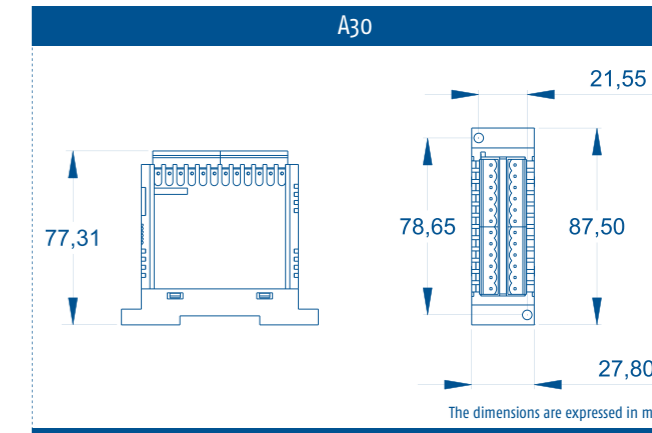
To compose the part number, pls. choose one of the option for each variable

A30	CODE
<b>MODEL</b>	
From USB to RS485 or TTL Modbus	U
From USB/RS232/RS485 to RS485 or TTL Modbus	-
<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





# APS2 ALDR

POWER SUPPLY FOR SIGMADUE SERIES



Power supply for instruments of sigmadue series.

CODE	DESCRIPTION
APS2 ALDR75-24	Power supply 75W - 24Vdc - 3.2 A
APS2 ALDR12024	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
ARF096D	Adapter for hole from 96 x 96 to 48 x 96 mm
ARF096M	Adapter for hole from 96 x 96 to 48 x 48 mm

# CAL

PROTECTION COVERS

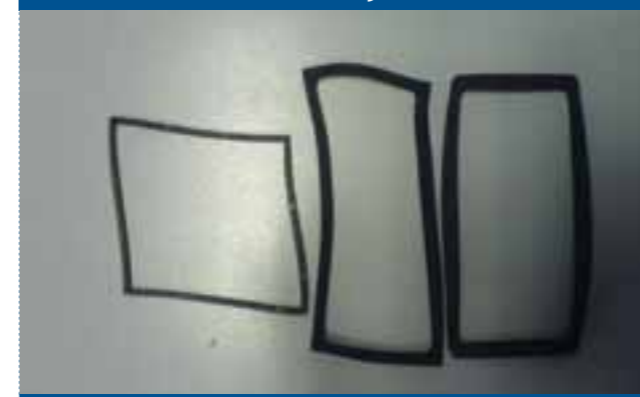


Protection covers made of transparent plastic or soft rubber to protect the front of the instruments. Some models assure the IP65 protection degree.

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

THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PIC AND OPERATOR PANELS

I/O MODULES

SUPERVISION

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	Cover 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
TLCOV	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

# THERMOELEMENTS

- THERMOCOUPLES
- THERMORESISTANCES
- THERMISTORS
- CABLES AND ACCESSORIES

## PROBES AND ACCESSORIES

The correct choice of 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...

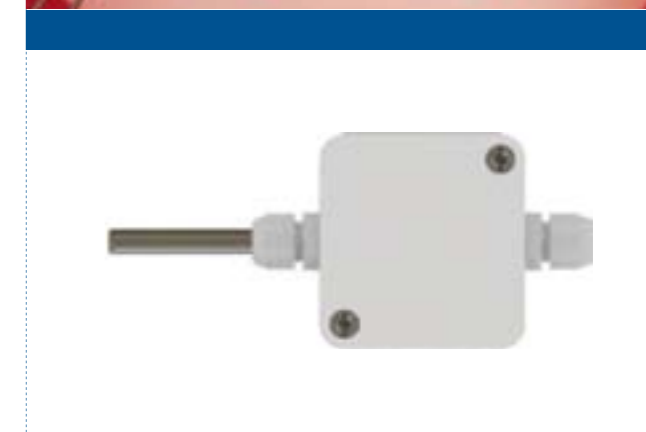
### Examples of possible execution of our thermoelements:

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

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



EVERYTHING UNDER CONTROL



THERMOSTATS AND CONTROLLERS

INDICATORS

SPECIAL CONTROLLERS AND "CUSTOM"

PAC SYSTEMS

PRE-PROGRAMMED SYSTEMS

PLC AND OPERATOR PANELS

I/O MODULES

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ACCESSORIES

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# NOTES

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