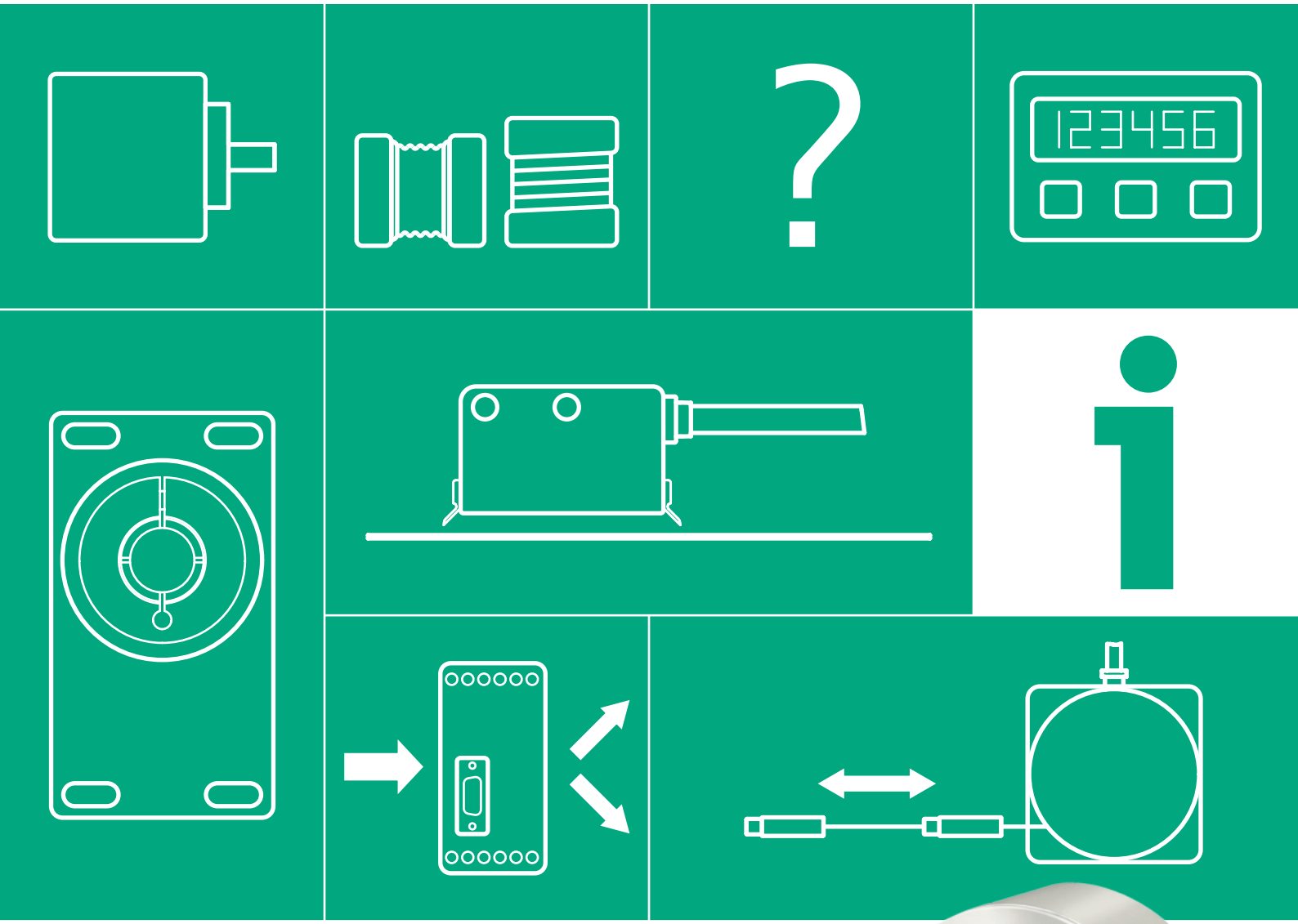
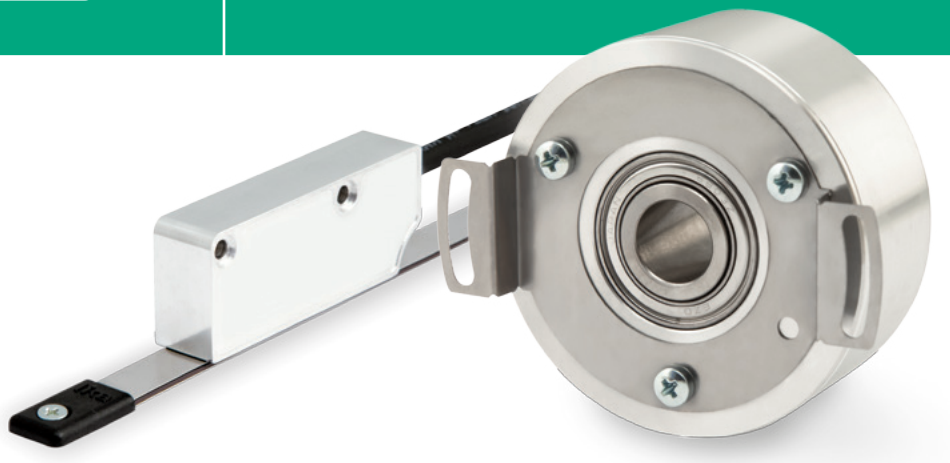
30 YEARS
YOUNG
1982.2012

lika





General catalogue 2015

2015 Product news calendar

Gennaio | *January*

IQ58 product family
Programmable incremental encoder.
Versatile & convenient with resolution up to 16384 PPR.

Febbraio | *February*

SMP linear encoder
Linear magnetic encoder
for integration into guided systems.

IR01
Wheel encoder for conveyor systems
& precise length measurements.

Marzo | *March*

SFE 5/10 meters
Incremental wire encoder with programmable
resolution and universal output circuit.

SFA 5/10 meters
Compact absolute wire encoder with SSI output.

Aprile | *April*

SMLA
Non-contact encoder for absolute sensing
on arcs & round surfaces.

SMR5H
Incremental sensor for internal sensing on arcs & rings.

Maggio | *May*

I58 - CK58 Atex
Full range of incremental encoders
for ATEX zone 2/22 applications.

IFS-10
SIL3 certified safety encoder motion monitor.

Giugno | *June*

EM58 Powerlink
Absolute single & multiturn encoders
with Powerlink interface.

SFA Analogue 5/10 m
Absolute wire encoder with programmable
analogue output and set-buttons.

Luglio | *July*

RD6
Rotary actuator with integrated absolute
multiturn encoder and position controller.

Agosto | *August*

I28
Compact Ø28mm encoder with extended
range of resolutions, up to 2048 PPR.

C50
Standard hollow shaft encoder
with high resolutions up to 8192 PPR.

Settembre | *September*

AST6 - AMT6
Square flange optical absolute
encoder with extended
resolutions up to 18 bit, 16x14 bit.

EM58 Modbus TCP/IP
Absolute single & multiturn encoders
with Modbus/TCP-IP interface.

Ottobre | *October*

AM58 CANopen
Robust version for mobile applications.
Absolute & reliable.

IK inclinometer
Absolute inclinometer with 1 and 2 axis
& high protection.

Novembre | *November*

RD1 EC
RD1 series of rotary actuators
with EtherCAT interface.

Dicembre | *December*

IQ36
Compact Ø36mm programmable incremental encoder
with resolution up to 16384 PPR.

ROTAPULS

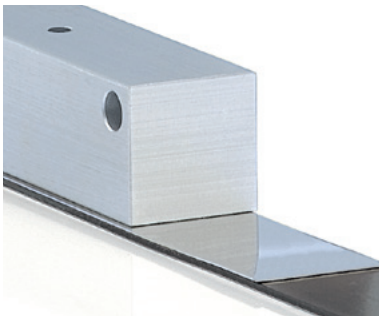
Incremental rotary encoders

ROTACOD

Absolute rotary & Fieldbus encoders

ROTAMAG

Rotary Magnetic encoder &
Encoder modules



LINEPULS – LINECOD

Linear Absolute & Incremental encoders

DRAW-WIRE

Draw-wire encoders & potentiometers

COUPLINGS

Flexible & Transmission couplings

POSICONTROL

Displays & Signal converters
Encoder Interfaces

DRIVECOD

Rotary Actuators & Positioning units

30th

30 YEARS YOUNG
1982.2012

1982
Lika Electronic founded in Schio (VI).

1983
Lika numbers 8 customers.

1985
Lika starts the production of absolute encoders for the German market.

1986
Manufacturing of absolute encoders with integrated display and incremental encoders for the Italian market.

1987
Lika produces a 50 mm diameter miniature encoder, the smallest absolute encoder in Europe.

1993
Lika Electronic is the first company in Italy to offer a complete portfolio of encoders in the 58 mm diam. range.

1995
The 100,000th encoder rolled off the production line.

1996
ROTACAM ASR58 is the first absolute encoder fitted with integrated cam programmer.

1997
Lika is first certified to ISO 9001:1994.

1982 1986 1990 1995

An international family company, corporate profile

Lika Electronic stands for encoders and position measuring systems. Since its inception in 1982, Lika Electronic develops and manufactures *incremental and absolute, optical and magnetic, rotary and linear encoders, incremental & absolute sensors, linear and rotary incremental & absolute magnetic measurement systems, rotary actuators, displays, signal converters and encoder interfaces.*

Starting as a family-owned business, thanks to its technical competence and comprehensive know-how in the automation industry along with the high quality standards and the skill in providing solutions that target specific customer needs, over the years **Lika Electronic has grown becoming a forward thinking innovative and global company** and has become one of the leading manufacturers of optical encoders and magnetic measurement systems in Europe and worldwide.
Many key features include the extensive technical engineering skills , in-depth knowledge and expertise in digital and analogical electronic design as well as the proven daily practice in co-operation with universities, research institutions and customers in order to **develop and provide advanced electronic equipment and high-tech materials & devices tailored to specific customer and market requirements**. Moreover software development and mechanical & optical components design are entirely performed within the company. Often production machinery and tools are often engineered and built internally to satisfy specific needs and performances.

Every day Lika Electronic is committed to being a step ahead and always at the forefront of innovation, looking to the future with the enthusiasm that steers the company towards new opportunities *without giving up the strength of being an international family company.*

Lika Electronic is certified for compliance with ISO 9001:2000 quality management system and is now committed to adopt an environmental management system complying with ISO 14001:2004 requirements. All Lika's products are designed and manufactured to fully meet the requirements of CE, RoHS and REACH directives, most of them are UL and CSA compliant too. ATEX certified solutions suitable to be integrated into potential explosive environments and hazardous areas are also available.

Global presence, make us closer to the customer

Every day, everywhere Lika Electronic works in close contact with its customers to build strong, long-lasting relationships and support them at all times in each day-to-day requirement. Lika's actions focus on customers' needs with daily challenges to develop reliable and cutting edge solutions *Continuous innovation, outstanding expertise, overall quality, prompt action and maximum flexibility* are the fundamental values that Lika Electronic is truly proud of offering its customers when working together.

The Rosetta space mission

Lika is proud to be part of the international team of companies that, under the guide of the **European Space Agency (ESA)** has allowed to achieve this historic result. Visit our website for full information.

Lika Electronic operates all over the world providing a widespread and efficient global distribution network, offering unrivalled technical support and excellent customer service. At the present time the export share is approximately 60% of the turnover in more than 50 countries.

2000 ROSETTA space probe project gets under way in co-operation with CISAS.

2002 Production in antistatic environment (ESD). DRIVECOD & POSICONTROL product ranges are launched in the market.

2007 Lika Electronic celebrates its 25th anniversary.

2012 30th anniversary: "30 new products for our 30 years" event launched.

2015 Certificate ISO 14001:2004

2000 | 2004 | 2008 | 2012 | 2015

1998 First 16-bit resolution single-turn absolute encoder engineered for installation in aerostatic probes developed by Florence University.

2004 Arianne 5 rocket successfully launched: Rosetta probe fits Lika encoders.

2008 ALMA project: giant array of 12-m radio telescopes equipped with special custom-made Lika encoders.

2010 Lika introduces the innovative range of heavy-duty products dedicated to steel & iron industry and wind mills.

2013 Lika South East Asia founded in Thailand.

ROTAPULS incremental encoders for standard applications

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR)	NPN	PNP	1Vpp	Push-Pull	Line Driver	Universal circuit	Operating temp. °C (°F) min. - max.	Protection max.
	**I28** Miniature light-duty encoder.	28	● 5	3000	2048	•			•	•	•	-20 +70 (-4 +158)	IP54
	**MI36 - MC36** Compact magnetic encoder.	36	● 6 ○ 6	12000	2048	•			•	•		-25 +85 (-13 +185)	IP67
	**I40 - I41** Compact shaft encoder.	40	● 8	6000	5000	•	•		•	•	•	-25 +85 (-13 +185)	IP66
	**CK46 - CK41** Compact blind hollow shaft encoder.	41	○ 6	6000	5000	•	•		•	•	•	-25 +85 (-13 +185)	IP65
	**I58 - I58S** Industrial grade shaft encoder.	58	● 12	12000	10000	•	•	•	•	•	•	-40 +100 (-40 +212)	IP65
	**C58 - C59 - C60** Industrial grade through hollow shaft encoder.	58	○ 15	6000	5000				•	•	•	-40 +100 (-40 +212)	IP65
	**C58A - C58R** Industrial grade through hollow shaft encoder. Front or back collar fixing.	58	○ 15	6000	5000				•	•	•	-40 +100 (-40 +212)	IP65
	**CK58 - CK59 - CK60** Industrial grade blind hollow shaft encoder.	58	○ 15	6000	10000	•	•	•	•	•	•	-40 +100 (-40 +212)	IP65
	**MC58 - MC59 - MC60** Magnetic through hollow shaft encoder.	58	○ 15	6000	10000				•	•	•	-25 +85 (-13 +185)	IP67
	**I65 - IT65** Industrial grade shaft encoder with MIL connector.	65	● 12	6000	10000	•	•		•	•	•	-40 +100 (-40 +212)	IP66

ROTACOD absolute encoders for general use

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR or Bit)	NPN / Push-Pull	SSI	BiSS	Modbus / RS485	Additional incremental track	Analogue output	Operating temp. °C (°F) min. - max.	Protection max.
	**MS36 - MSC36** **MM36 - MMC36** Compact magnetic encoder. Single & multiturn version.	36	● 6 ○ 6	12000	13 12 x 16		•					-20 +85 (-4 +185)	IP67
	**AS36 - ASC36** **AM36 - AMC36** Compact shaft & hollow shaft endoder. High resolution.	36	● 6 ○ 6	6000	20 20 x 16		•	•				-40 +100 (-40 +212)	IP65
	**ES58 - ES58S - ESC58** **EM58 - EM58S - EMC58** Industrial grade encoders. Shaft & blind hollow shaft versions.	58	● 12 ○ 15	12000	13 13 x 14	•	•		•	•		-40 +100 (-40 +212)	IP67
	**HS58 - HS58S - HSC58** **HM58 - HM58S - HMC58** Industrial grade high resolution encoders. Shaft & blind hollow shaft versions.	58	● 12 ○ 15	6000	19 + 2048 PPR 16 x 14 + 2048 PPR		•	•		•		-40 +100 (-40 +212)	IP65
	**HSCT - HMCT** Industrial grade high resolution encoders. Through hollow shaft.	58	○ 15	6000	18 16 x 12 + 2048 PPR		•	•		•		-25 +85 (-13 +185)	IP65
	**MM58 - MM58S - MMC58** Magnetic multiturn encoders. Shaft & through hollow shaft versions.	58	● 12 ○ 15	12000	12 x 16		•					-20 +85 (-4 +185)	IP67
	**AS58 A - AM58 A** Industrial grade encoders with precise analogue output.	58	● 12 ○ 15	6000	12 tot. 16						•	-20 +85 (-14 +185)	IP65
	**AST6 - AMT6** Industrial grade encoders with square flange.	65	● 12	6000	18 16 x 14	•	•			•		-25 +85 (-13 +185)	IP65
	**AM9 - AMC9** Multiturn encoders with shaft & through hollow shaft. Low profile housing.	88	● 10 ○ 15	6000	13 x 12		•					-40 +100 (-40 +212)	IP65

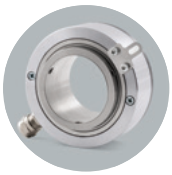
ROTAPULS • ROTACOD programmable encoders

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR or Bit)	NPN / Push-Pull	Line Driver	Universal circuit	SSI	BiSS	Analogue output	Operating temperature °C (°F) min. - max.	Protection max.
	**IP58 - IP58S - CKP58** High resolution incremental encoder. Shaft & blind hollow shaft versions.	58	● 12 ○ 15	12000	65536			•				-25 +85 (-13 +185)	IP65
	**IQ58 - IQ58S - CKQ58** Standard incremental encoder. Shaft & blind hollow shaft versions.	58	● 12 ○ 15	12000	16384			•				-40 +100 (-40 +212)	IP65
	**HM58 P - HM58S P** **HMC58 P** Absolute multiturn encoder. Possibility of resolution teach-in.	58	● 12 ○ 15	12000	18 x 14	•			•			-40 +100 (-40 +212)	IP67
	**EM58 TA - EM58S TA** **EMC58 TA** Absolute encoder with programmable analogue output. Teach-in buttons.	58	● 12 ○ 15	12000	12 x 14						•	-25 +85 (-13 +185)	IP67
	**EM58 PA - EM58S PA** **EMC58 PA** Fully programmable absolute encoder with analogue output.	58	● 12 ○ 15	12000	12 x 14						•	-25 +85 (-13 +185)	IP67

ROTACOD absolute encoders with fieldbus interface

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Connection cap with PG	Connection cap with M12 connectors	Resolution max. (bits)	CANopen	CANopen LIFT	Profibus-DP	DeviceNet	EtherCAT	Profinet	Powerlink	Operating temperature °C (°F) min. - max.	Protection max.
	**AS58 PB - AM58 PB** **AS58 CB - AM58 CB** Standard encoders with Profibus & CANopen interface. PG & M12 connections.	58	● 12 ○ 15	6000	•	•	13 13 x 12	•		•					-25 +85 (-13 +185)	IP65
	**HS58 FB - HM58 FB** High resolution encoders with Fieldbus interface. PG & M12 connections.	58	● 12 ○ 15	6000	•	•	18 16 x 14	•	•	•	•				-25 +85 (-13 +185)	IP65
	**AS58 - AM58 CANopen** CANopen encoder with single output (point-to-point). Shaft & blind hollow shaft.	58	● 12 ○ 15	6000			18 16 x 14	•	•						-25 +85 (-13 +185)	IP65
	**EM58 PT - HS58 PT** **HM58 PT** Standard & high resolution encoders with Profinet interface.	58	● 12 ○ 15	6000	-	•	13 x 14 18 16 x 14						•		-25 +85 (-13 +185)	IP65
	**EM58 EC - HS58 EC** **HM58 EC** Standard & high resolution encoders with EtherCAT interface.	58	● 12 ○ 15	6000	-	•	13 x 14 18 16 x 14					•			-25 +85 (-13 +185)	IP65
	**EM58 PL - HS58 PL** **HM58 PL** Standard & high resolution encoders with Powerlink interface.	58	● 12 ○ 15	6000	-	•	13 x 14 18 16 x 14							•	-25 +85 (-13 +185)	IP65

ROTAPULS encoders for motor feedback applications

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR)	NPN	PNP	1Vpp	Push-Pull	Line Driver	Universal circuit	Operating temperature °C (°F) min. - max.	Protection max.
	**C50** Compact & reliable through hollow shaft encoder. High operating temperature.	50	○ 10	6000	8192	•	•					-40 +100 (-40 +212)	IP65
	**CB50** Encoder with UVW commutation signals.	50	○ 10	6000	2500/ 8 poles				•	•		-20 +100 (-4 +212)	IP20
	**CB59 - CB60** Sine/Cosine encoder with absolute C-D track. Hollow & taper shaft.	58	● 1:10 ○ 15	12000	2048/ 1 sin/cos			•				-20 +100 (-4 +212)	IP40
	**C80** Through hollow shaft for lift motors.	80	○ 30	6000	4096				•	•	•	-40 +100 (-40 +212)	IP65
	**C81** Robust through hollow shaft encoder.	80	○ 44	3000	4096			•	•	•	•	-40 +100 (-40 +212)	IP65
	**C82** Through hollow shaft for lift motors.	80	○ 44	3000	8192				•	•	•	-40 +100 (-40 +212)	IP65
	**SMG** Gearwheel encoder for high speed spindle motors.	-	-	50000	>25000			•		•		-25 +85	IP68

ROTAPULS • ROTACOD encoders with ATEX certification

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR or Bit)	NPN / Push-Pull	SSI	BiSS	Profibus-DP / CANopen	Add. incremental track	Analogue output	Operating temp. °C (°F) max.	Protection max.
	**XC77** Incremental ATEX encoder. Ex II 2 GD, Ex d IIC T6 Gb, Ex tb IIIC T85°C Db. Zone 1, 2, 21, 22.	77	○ 14	6000	10000	•						-25 +85 (-13 +185)	IP66
	**XAC77** Absolute ATEX encoder. Ex II 2 GD, Ex d IIC T6 Gb, Ex tb IIIC T85°C Db. Zone 1, 2, 21, 22.	77	○ 14	6000	18 16 x 14	•	•	•		•	•	-25 +85 (-13 +185)	IP65
	**I58 - CK58** Incremental ATEX encoder. Ex II 3G Ex nA IIB T4 Gc, Ex II 3D Ex tc IIIC T105° Dc. Zone 2, 22.	58	● 12 ○ 15	12000 6000	10000	•						-40 +100 (-40 +212)	IP65
	**XAC77 PB - CB** Profibus & CANopen ATEX encoder. Point-to-point communication.	77	○ 14	6000	18 16 x 14				•			-25 +85 (-13 +185)	IP66

ROTAPULS • ROTACOD Accessories

Flexible couplings

Complete range of encoder and transmission couplings

- Flexible or rigid
- Zero-backlash
- Electrically insulated
- Vibration absorbing
- High torque & stiffness versions
- Grub screw or collar fixing
- Versions with keyway
- Stainless steel versions

Mounting and Connection accessories

Mounting accessories for encoders and electrical connections

- Spring loaded brackets
- Mounting bells and adapter flanges
- Fixing clamps, Reducing sleeves
- Connectors
- Cordets

Metric wheels and Gears

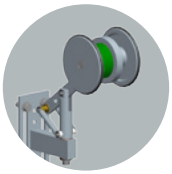
Metric wheels with 200 and 500 mm circumference

- Aluminum or Rubber surface
- Metric wheel encoders (IR65 series on request)
- Rack and pinions (for ICS series)

ROTAPULS • ROTACOD heavy-duty encoders & with stainless-steel housing

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR or Bit)	NPN / PNP	1Vpp	Universal circuit	Push-Pull	Line Driver	SSI	CANopen	Profibus-DP	DeviceNet	Analogue output	Operating temperature °C (°F) min. - max.	Protection max.
	**I58SK** Industrial stainless steel incremental encoder. Food industry.	58	● 12	12000	10000	•	•	•	•	•						-40 +100 (-40 +212)	IP65
	**MI36K - MC36K** Compact magnetic encoder in stainless steel. Food industry.	36	● 6	12000	2048	•			•	•						-25 +85 (-13 +185)	IP67
	**C100 - C101** Hollow shaft feedback encoder. Single & redundant version. Windturbines.	100	○ 1 : 17 ○ 16	6000	2500 2048			•	•	•						-40 +100 (-40 +212)	IP65
	**I115 - I116** Solid shaft feedback encoder. Single & redundant version. Windturbines, Steelmills.	115	● 11	6000	5000	•		•	•	•						-40 +100 (-40 +212)	IP66
	**ICS** Spring-loaded movable shaft for linear measurements with pinions & gears.	172x80 x53	● 12	6000	2500	•		•	•	•						-25 +85 (-13 +185)	IP65
	**AM58 K** Absolute stainless steel encoder. Profibus & CANopen interfaces. Food industry.	58	● 12	6000	13 x 12							•	•			-25 +85 (-13 +185)	IP67
	**MH58S** Robust absolute encoder. Windturbines, Mobile equipment, Steelmills.	58	● 10	6000	12 x 12						•				•	-40 +85 (-13 +185)	IP67
	**XAC77 FB** Absolute fieldbus hollow shaft encoder with connection cap.	77	○ 14	6000	18 16 x 14							•	•	•		-25 +85 (-13 +185)	IP66

ROTAPULS • ROTACOD specialty encoders & OEM versions

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Resolution max. (PPR or Bit)	NPN	PNP	1 Vpp	Push-Pull	Line Driver	Universal circuit	Analogue output	Operating temperature °C (°F)min. - max.	Protection max.
	**I70** Pulley encoder for timing belt systems.	54	-	3600	500				•				-20 +85 (-4 +185)	IP65
	**CH59** Ultra high resolution incremental encoder. Flat design, through hollow shaft.	58	○ 12	6000	204800					•			-25 +85 (-13 +185)	IP42
	**IR01** Wheel-encoder with mounting kit. Linear & conveyor belt measurements.	-	-	3000	2500				•	•	•		-25 +85 (-13 +185)	IP65
	**I105** High resolution non-interpolated incremental encoder.	105	● 10	6000	18000				•	•	•		-25 +85 (-13 +185)	IP65
	**ASR58 - AMR58** Absolute encoder with integrated cam switch programmer. Packaging machines.	58	● 12	6000	12 12 x 18		•					•	-25 +85 (-13 +185)	IP65
	**IT68** Incremental encoder for tool machines.	65	● 15	6000	10000	•	•		•	•	•		-40 +100 (-40 +212)	IP66

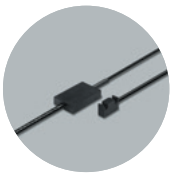
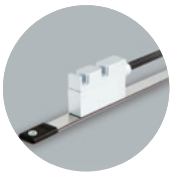
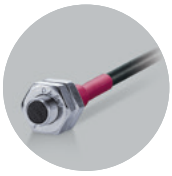
ROTAPULS • ROTACOD bearingless encoder

		Housing ø (mm)	Shaft max. ø (mm)	Shaft rotational speed max. (rpm)	Connection		Resolution max. (PPR or Bit)	Power supply (Vdc)	NPN	PNP	1Vpp	Push-Pull	Line Driver	SSI	Operating temperature °C (°F) min. - max.	Protection max.
					connector	cable										
	**IM30 - IM31 - IM56** Incremental encoder module for motor feedback.	30÷56	○ 8	3000	•		2048	+5	•				•		-40 +85 (-40 +185)	IP20
	**MIK36** Shaftless incremental encoder. Waterproof design.	36	○ 10	30000		•	2048	+5 +10 +30	•			•	•		-25 +85 (-13 +185)	IP68
	**SGSM - SGSD** Magnetic ring encoder. Single & redundant version.	-	○ 50	6000		•	1024	+5 +10 +30				•	•		-40 +85 (-40 +185)	IP68
	**SMG** Bearingless feedback encoder for spindle motors.	-	○ 100	50000	•	•	>25000	+5			•		•		-25 +85 (-13 +185)	IP68
	**SMRI** Incremental ring encoder. Several ring sizes available.	-	○ 250	25000	•	•	90000	+5 +10 +30				•	•		-25 +85 (-13 +185)	IP68
	**SGHM** Incremental ring encoder for integration into gearmotors.	-	○ 50	12000	•		16384	+5 +10 +30				•	•		-25 +85 (-13 +185)	IP65
	**MSK36 - MMK36** Shaftless absolute encoder. Single & multiturn. Waterproof design.	36	○ 10	12000	•	•	13 12 x 16	+5 +10 +30						•	-25 +85 (-13 +185)	IP68
	**SMRA** Absolute bearingless ring encoder.	-	○ 380	15000	•	•	14	+10 +30						•	-25 +85 (-13 +185)	IP68
	**SMLA** Sensor for absolute measuring of curved axes up tp 360°.	-	-	15000		•	14	+10 +30						•	-25 +85 (-13 +185)	IP68
	**SMR5H** Sensor for incremental measuring of internal curved axes.	-	-	25000		•	5 µm	+5 +10 +30				•	•		-25 +85 (-13 +185)	IP67

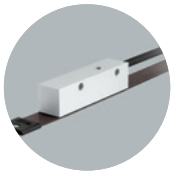
DRAW WIRE incremental & absolute wire encoders

		Measurement length max. (mm)	Stroke per turn (mm)	Measuring speed max. (m/sec)	Sensor		Potentiometer Analogue	Incremental encoder	Absolute encoder	Fieldbus encoder	Atex encoder
					integrated	external					
	**SFP** Compact wire-potentiometer with ohmic or analogue output.	2000	100	2	•		•				
	**SFE** Compact wire- encoder with incremental output.	2000	100	2	•			•			
	**SFE-5000, SFE-10000** Programmable incremental wire-encoder, 5 & 10m length.	10000	200		•			•			
	**SFA** Compact wire-encoder with absolute output.	2000	100	2	•				•		
	**SFA-5000, SFA-10000** Absolute wire-encoder, 5 & 10m length	10000	200		•				•		
	**SFA-5000 TA, SFA-10000 TA** Wire-encoder with analogue output & teach-in buttons. 5 & 10m length.	10000	200		•		•				
	**SF-I, SF-A** Draw-wire units for incremental & absolute encoders, 5 & 6,8m length.	6800	200 204,8	2,5		•	•	•	•	•	
	**SAK-10000, SAK-15000** **SBK-20000, SBK-30000** **SBK-40000, SBK-50000** Robust draw-wire units with reinforced winding mechanism.	50000	500	10		•	•	•	•	•	•

LINEPULS incremental linear encoders for position measurements

		Dimensions (mm)	Connection		Resolution max. (µm)	Travel speed max. (m/s)	Push-Pull	Line Driver	1Vpp	Reference	Limit switches	Power supply (Vdc)	Operating temperature °C (°F) min. - max.	Protection max.
			connector	cable										
	**SME51** Linear encoder for position measurement with up to 2 mm gap.	40 x 25 x 10	•	•	5	16	•	•		•		+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SME52** Version with integrated reference and limit switches.	40 x 25 x 10		•	5	16	•	•		•	•	+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SME21** Linear encoder for position measurement with up to 1 mm gap.	40 x 25 x 10	•	•	1	16	•	•		•		+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SME22** Version with integrated reference and limit switches.	40 x 25 x 10		•	1	16	•	•		•	•	+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SMP** Encoder with lateral sensing for linear guides.	40 x 20 x 10	•	•	12,5	16	•	•				+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SMB2 - SMB5** Miniature sensing head with external signal converter.	25 x 15 x 8,5		•	50	16	•	•				+5 +10 +30	-25 +85 (-13 +185)	IP68
	**SMK - SML - SMH** Robust sensors for standard application.	40 x 25 x 10		•	10 100	2,5 10	•	•				+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SMIG** Guided incremental sensor.	80 x 48 x 28	•	•	5	1	•	•				+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SMX2 - SMX5** Incremental speed & position sensor for rings & tapes.	M10 x 30		•	5 mm (1.25) 2 mm (0.5)	30 (7,5 kHz)	•	•				+5 +30	-10 +70 (+14 +158)	IP67

LINEPULS • LINECOD incremental & absolute linear encoders for motion control

		Dimensions (mm)	Connection		Resolution max. (µm)	Travel speed max. (m/s)	SSI	BiSS	Push-Pull	Line Driver	1Vpp	Reference	Limit switches	Power supply (Vdc)	Operating temperature °C (°F) min. - max.	Protection max.
			connector	cable												
	**SMI2 - SMI5** Encoder with resolution selector & dynamic signal calibration.	25 x 15 x 8,5	•		50	16			•	•				+5 +10 +30	-25 +85 (-13 +185)	IP68
	**SMS11** Sine/cosine encoder for linear motors.	40 x 25 x 10	•	•	1000	16					•	•		+5	-25 +85 (-13 +185)	IP67
	**SMS12** Version with integrated reference & limit switches.	40 x 25 x 10	•	•	1000	16					•	•	•	+5	-25 +85 (-13 +185)	IP67
	**SMSR** Miniature sine/cosine sensor for linear motors & pick-place applications.	25 x 15 x 8,5	•	•	1000	10					•			+5	-25 +85 (-13 +185)	IP68
	**SME11** High performance encoder for linear motors.	40 x 25 x 10	•	•	0,5	16			•	•		•		+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SME12** Version with integrated reference & limit switches.	40 x 25 x 10	•	•	0,5	16			•	•		•	•	+5 +10 +30	-25 +85 (-13 +185)	IP67
	**SMA1** BiSS INTERFACE Absolute encoder with additional sine/cosine output.	85 x 21 x 20		•	5	5	•	•						+10 +30	-25 +85 (-13 +185)	IP67
	**SMA2** BiSS INTERFACE High performance absolute encoder with additional incremental track.	62 x 25 x 14	•	•	1	10	•	•						+10 +30	-25 +85 (-13 +185)	IP67

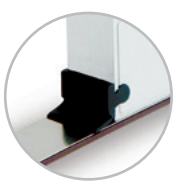
LINECOD absolute linear encoders for position measurements

		Dimensions (mm)	Connection		Resolution max. (µm)	Measurement length max. (mm)	SSI	BiSS	Modbus RS485	Profibus	CANopen / CANlift	Analogue	Power supply (Vdc)	Operating temp. °C (°F) min. - max.	Protection max.
			connector	cable											
	**SMA5** Standard encoder for position measurement.	65 x 20 x 20	•	•	5	5,1	•						+10 +30	-25 +85 (-13 +185)	IP67
	**SMA2** BiSS INTERFACE High performance absolute encoder with additional incremental track.	62 x 25 x 14	•	•	1	8,2	•	•					+10 +30	-25 +85 (-13 +185)	IP67
	**SMAG** Guided encoder for linear positioning.	80 x 48 x 28	•	•	5	0,6	•				•		+10 +30	-25 +85 (-13 +185)	IP65
	**SMAX** Low-cost encoder with programmable resolution.	80 x 40 x 22	•	•	100	0,6	•		•			•	+10 +30	-25 +85 (-13 +185)	IP68
	**SMAZ** Low-cost encoder with programmable resolution.	80 x 40 x 22	•	•	100	1,2	•		•			•	+10 +30	-25 +85 (-13 +185)	IP69K

LINEPULS • LINECOD Accessories

Standard incremental magnetic tapes **MT50, MT40, MT32, MT25, MT20 and MT10** are available up to 100 m length.
Versions with reduced width **MTS50 and MTS20**, available up to 30 m.
Standard absolute magnetic tapes **MTA5, MTA2, MTA1, MTAL, MTAX and MTAZ** are available up to max. 8,1 m length.

Tape terminals for incremental and absolute tapes.
(Terminals included with tape rolls. Additional terminals may be ordered separately).



KIT LKM-1440 for 10 mm width tapes, series MTxx and MTA2.
KIT LKM-1439 for 20 mm width tapes series MTAx (excluding MTA2).
(Each KIT contains 10 terminals with mounting screws).

DRIVECOD rotary actuators for format adjustment

		Dimensions (mm)	Hollow shaft ø (mm)	Shaft rotational speed max. (rpm)	Nominal torque (Nm)	Max. torque (Nm)	Motor brake	Power supply (Vdc)	RS232 service Modbus	CANopen	Profibus	Modbus RS485	EtherCAT	Operating temperature °C (°F) min. - max.	Protection max.
	**RD1A** Rotary actuator with absolute multiturn encoder & jog buttons.	59 x 112 x 125	14	240 120 60	1,2 2,4 5	3 6 12		24	•	•	•	•	•	0 +60 (32 +140)	IP65
	**RD12A** Version with integrated motor brake.	59 x 142 x 125	14	240 120 60	1,2 2,4 5	3 6 12	•	24	•	•	•	•		0 +60 (32 +140)	IP65
	**RD5** Compact actuator with absolute multiturn encoder.	48,3 x 88 x 127	14	60	5	12		24		•	•	•		0 +60 (32 +140)	IP54
	**RD53** Version with integrated motor brake.	48,3 x 88 x 139	14	60	5	12	•	24		•	•	•		0 +60 (32 +140)	IP54
	**RD4** High torque rotary actuator with absolute encoder.	65 x 153 x 160	20	94 62	10 15	20 30		24		•	•	•		0 +60 (32 +140)	IP65

LDT10 Touch screen controller for rotary actuators

Description	Master controller for up to 16 RD units with Modbus interface.
Screen	TFT LCD 7.0 inch, touchscreen.
General specs	Dimension 205 x 151 x 33 mm. Power supply 24 Vdc, 15W. Full parameter setting and command of RD units. Editing & storage of recipes. Cordsets & connection cables to RD units available.

POSICONTROL multifunction displays for incremental & absolute encoders

		Display	Display mode			Dimensions (mm)	Input				Counting frequency max. (kHz)	Interface RS232 / RS485	Power supply	Output max.
			linear	angular	mm/inch		ABO	SSI	1Vpp	Magnetic sensor				
	**LD120** Compact LED position display for SMx magnetic sensors.	LED 5 digit	•	•	•	72 x 36 x 62				•	-	•	+10 +30	-
	**LD112** Compact LCD battery powered position display with SM25 sensor.	LCD 6 digit	•	•	•	72 x 48 x 31				•	-		battery	-
	**LD111 - LD141** Version without housing for OEM applications.	LCD 6 digit	•	•	•	61 x 39 x 23 87 x 60,5 x 47				•	-		battery	-
	**LD140 - LD142** Standard LCD battery display for SM25 sensors. LD142 directly connected sensor.	LCD 6 digit	•	•	•	96 x 72 x 47				•	-	•	battery	-
	**LD200** Universal LED display with multiple encoder input.	LED 8 digit	•	•	•	96 x 48 x 49	•	•	•	•	500	•	24 Vdc	3 x 24V @ 23mA
	**LD250** Multifunction LED display for absolute encoders.	LED 6 digit	•		•	96 x 48 x 141		•			-	•	24 Vdc 115/230 Vac	0/4 - 20mA 0...±10Vdc
	**LD300** Multifunction LED display for incremental encoders.	LED 6 digit	•		•	96 x 48 x 141	•				100	•	24 Vdc 115/230 Vac	0/4 - 20mA 0...±10Vdc

POSICONTROL interfaces, gateways & signal converters

		Description	Input	Output	Service interface	Functions
	**IF10**	Universal incremental encoder signal splitter, converter & cross switch. DIN rail mounting.	2 inputs HTL or TTL / RS422	2 outputs HTL or TTL / RS422		Adjustable inputs and outputs signal levels (can be mixed) Contactless switch-over Up to 1 MHz input frequency
	**IF20**	Signal level converter for incremental encoder. DIN rail mounting.	HTL or TTL / RS422	HTL or TTL / RS422		Output voltage according to remote voltage Input/Output galvanically separated AB quadrature to UP/DOWN conversion
	**IF30**	Sine/Cosine signal interpolator. DIN rail mounting.	1Vpp	HTL (AB0) or RS422 (AB0 /AB0)		Adjustable interpolation rate up to x50 Adjustable pulse divider Filtering functions
	**IF50**	Incremental signal to Analogue converter and to RS232/RS485. DIN rail mounting.	HTL or TTL / RS422	± 10 V 0- 20 mA 4 - 20 mA	RS232 RS485	Signal linearization Scaling factor Teach-in function
	**IF51**	Absolute SSI to Analogue converter and to RS232/RS485. DIN rail mounting.	SSI (up to 25 bit)	± 10 V 0- 20 mA 4 - 20 mA	RS232 RS485	Bit blanking function Signal linearization Scaling factor
	**IF52**	Absolute SSI to Bit parallel converter and to RS232. DIN rail mounting.	SSI (up to 25 bit)	Push-Pull	RS232	Signal linearization Scaling factor
	**IF55**	Robust gateway for linear and rotary encoders. From SSI to EtherCAT, Profibus, CANopen.	SSI (up to 25 bit)	EtherCAT Profibus CANopen		Scaling factor Velocity output
	**IFS10** SIL3 Functional Safety PLe	Safety monitor for speed, standstill and counting direction.	1Vpp, RS422 HTL	Secure relay 4 - 20 mA	RS232 USB	Integrated splitter function 4 redundant outputs Upper & lower speed limits Pre alarm function
	**IF60 - IF61** **IF62 - IF63**	Fibre-optic signal converters for incremental and absolute encoders. IF60/IF62 transmitter. IF61/IF63 receiver.	HTL or TTL / RS422 SSI	Optical signal		Safe signal transmission up to 1500 m Suitable for explosive areas and environments with extremly high electromagnetic fields

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