

PRODUCTS CATALOGUE

ITALSENSOR

The logo for Tekel, featuring the word "TEKEL" in a stylized, red, outlined font.

Who we are

Founded in 1976, Tekel Instruments S.r.l. began its activity with the design and production of inductive proximity sensors, operating in the industrial automation and measurement instruments sector. Gradually, it added a wide range of electronic instrumentation and automation electronic boards to its sensor line. Tekel was among the first Italian companies to produce incremental encoders, and later, as a natural evolution, single-turn and multi-turn absolute encoders, available in various executions. In a short time, the company became a leader and reference point in the industrial automation and measurement instruments sector.

Founded in 2009, Italsensor S.r.l. aims to continue the work started years ago by this historic brand, leveraging a consolidated and significant experience in the electronic field. Italsensor's transducers, due to their wide range of models, quality, and robustness, are validly applied worldwide in industrial process controls, industrial robots, machine tools, measuring instruments, dividing plotters, rolling mills, sheet metal machines, balances and scales, antennas and telescopes, machines for glass, marble, cement, wood, ecological plants, textile machines, tanneries, cranes, overhead cranes, presses, printing machines, packaging, and more.

In collaboration with the Department of the Polytechnic University of Turin and robotics, the company is constantly improving its products, offering the best decisions based on customer expectations and ensuring the reliability and durability of its products. Continuously investing in research and development, Italsensor offers customized solutions from the initial design phase to the development of the finished product for a variety of applications, even for use in harsh environments (heavy-duty encoders): temperature fluctuations, high vibration, humidity, pollution, and so on. Italsensor has developed numerous successful solutions for different customers based on their specifications.

Well present in the Italian market, Italsensor is oriented towards international markets, successfully exporting its products to more than 50 countries. Working every day, the company aims for continuous improvement, the development of high-quality products, ensuring superior service and effective solutions in the industrial automation sector.



HIGH QUALITY & RELIABILITY: 47 years of experience in encoder production! All design and products are entirely made in ITALY according to international standards.

EXPRESS PRODUCTION OPTION: encoders in 48-72 hours to optimize production costs, reducing losses caused by short and long interruptions of your plant. Standard lead times are 7-10 days.

EQUIVALENT ENCODERS: production of equivalent encoders to those of our competitors.

CUSTOMIZED ENCODERS: design, development, and production of encoders on customer request for various applications, e.g., heavy-duty (shocks and vibrations, temperature fluctuations, humidity, etc.)

INCREMENTAL ENCODERS *solid shaft*



Model	TTM25	TK15/ TK38	TK25/ TS44	TS40	TS52	TS58	TISP58 PROGRAMMABLE	TK45/TK50/ TK60/ TK50FRE	TK90/ TK100
	Miniature magnetic incremental encoder	Miniature incremental optical and magnetic encoder	Low-cost incremental optical and magnetic encoder	Low-cost incremental optical and magnetic encoder	Compact incremental optical and magnetic encoder	Low-cost optical and magnetic incremental encoder	Programmable optical incremental encoder (up to 65536 ppr)	Rugged optical and magnetic incremental encoder	Rugged optical and magnetic incremental encoder
Main features	Magnetic incremental encoder for general industrial applications.	Miniature encoder for general industrial application.	Low-cost encoder for general industrial applications. Housing with integrated magnetic shield to ensure the best EM immunity.	Low-cost encoder for general industrial applications. Wide range of mounting flange and high protection degree.	Compact encoder for general industrial applications. Wide range of mounting flange and high protection degree.	Low-cost encoder for general industrial applications. Particularly suitable for lifts and elevators.	Programmable incremental optical encoder user programmable from 1 up to 65536 PPR	Rugged encoder for heavy duty industrial applications. Ideal solutions for lift, printing, metalworking, packaging industries.	Rugged encoder for heavy duty industrial applications.
Body diameter (mm)	25	38	44	40	52	58	58	63,5/115 (FRE)	80
Shaft (mm)	4	4,6	6	4,6	9,52	6, 8, 9,52, 10, 11, 11R, 12 Other on demand	6, 8, 9,52, 10, 11, 11R	6, 8, 9,52, 10, 11, 11R, 12	6, 8, 9,52, 10, 11, 11R,12
Flange									
Resolution (ppr)	Max. 2048	Max.3600	Max. 2048	Max. 2048	Max. 2048	Standard up to 2000	From 1 up to 65536 ppr	Standard up to 2000	Standard up to 2000
	Other on demand	Other on demand	Other on demand	Other on demand	Other on demand	Other on demand	Freely programmable	Other on demand	Other on demand
Interface (output)	LD, LD2,	LD, LD2,	LD, LD2	LD, LD2	LD, LD2	LD, LD2,	LD2,	LD, LD2,	LD, LD2,
	PP2	PP2, NPN, PNP	PP2, NPN, PNP	PP2, NPN, PNP	PP2, NPN, PNP	PP2, NPN, PNP, OC, OP	PP2	PP2, NPN, PNP	PP2, NPN, PNP
Operating temperature (C)	-10°C...+85°C	-10°C ...+70°C	-10°C ... +70°C	-10°C ... +70°C	-10°C ... +70°C	-10°C...+70°C	-10°C...+70°C	-10°C...+70°C	-10°C ...+70°C
Protection degree	IP55	IP55	IP66	IP66	IP66	IP66	IP66	IP66	IP66
Connection									

INCREMENTAL ENCODERS *hollow shaft / hollow through shaft*



Model	TTMW25	TKW315	TSW365/TSW58	TISPW58 programmable	TKW615C	TSW58HS	TS58HS	TSW80	TSW80P
	Miniature magnetic hollow shaft encoder	Compact hollow shaft optical incremental encoder	Low-cost optical incremental encoder Hollow shaft	Programmable optical incremental encoder (up to 65536 ppr) Hollow shaft	Optical incremental encoder Hollow shaft	Optical incremental encoder Hollow through shaft	Heavy-duty incremental optical encoder Hollow through shaft	Rugged optical incremental encoder Hollow through shaft	Optical incremental encoder Hollow through shaft
Main features	Low-cost blind shaft encoder (with grub screw) for general industrial applications. Housing with integrate magnetic shield to ensure the best EM immunity.	Low-cost blind shaft encoder (with grub screw or with collar) for general industrial applications.	Low cost incremental encoder for generic industrial application, with a lot of connection interfaces is the best choice for the final user for the maximum free on the mechanical design. Shaft diameter is user changeable by using our reducing bushing) and electrical interfacing.	Programmable incremental optical encoder user programmable from 1 up to 65536 PPR	Low-cost blind hollow shaft incremental encoder (with grub screw or with collar) for generic industrial applications.	Compact encoder for general industrial applications. Particularly suitable for woodworking industries.	Hollow shaft encoder for heavy duty industrial applications. Particularly suitable applications of electric motors and for use at high temperatures. Shaft diameters modifiable (or changeable) by the user through reducing bushes.	Rugged hollow through shaft encoder (version with security dowels and clamping collar) for general and heavy-duty industrial applications	Hollow shaft encoder, glass fiber reinforced plastic housing, suitable for motor control or industrial applications. Insulated ball bearing to avoid EDM mechanisms. The protected output interface for EMI environments ensures long life and reliability. Shaft diameter modifiable by means of reduction bushings.
Body diameter (mm)	25	38	36,5/ 58	58	63,5	58	58	80	80
Shaft (mm)	4	6, 8	6,8, 9,52, 10,11,12,12.7,14,15 (reducing bushing except 15 mm)	6,8, 9,52, 10,11,12,12.7,14,15 (reducing bushing except 15 mm)	8, 9,52, 10,11,12,12.7,14,15 (reducing bushing except 15 mm)	6,8, 9,52, 10,11,12,12.7,14, 15 (reducing bushing except 15 mm)	8, 10, 11,12,15	From 20 up to 44 mm. Others on demand.	6,8, 10, 9,52, 11,12,14, 15 (fixing with collar)
Flange									
Resolution (ppr)	Max. 2048 Other on demand	Max. 3600 Other on demand	Max. 10000 Other on demand	From 1 up to 65536 ppr Freely programmable	Max. 5000 Other on demand	Max. 10000 Other on demand	Max. 10000 Other on demand	Max. 2500 Other on demand	1024, 2048 Other on demand
Interface (output)	LD, LD2 PP2	LD, LD2 PP2, OC, OP, NPN, PNP	LD, LD2 PP2, NPN, PNP	LD2 PP2	LD, LD2 PP2, NPN, PNP	LD, LD2 PP2, NPN, PNP	LD2 PP2	LD, LD2 PP2	LD, LD2, PP2, OC
Operating temperature (C)	-10°C...+85°C	-10°C ...+70°C	-10°C ...+70°C	-25°C ...+85°C	-10°C ...+70°C	-10°C ...+70°C	-25°C ...+100°C	-10°C ...+100°C	-10°C ...+100°C
Protection degree	IP55	IP65	IP64	IP65	IP64	IP64	IP65	IP65	IP64
Connection									

ABSOLUTE ENCODERS *singleturn*



Model	TKC38	TKTE / TKTC	TKE45	TKC50/TKC60	TKC100	TKE615	TSTMW42 Sin/cos
	Miniature magnetic absolute singleturn analogue encoder	Compact optical absolute singleturn encoder	Optical absolute ingleturn encoder	Optical absolute singleturn encoder	Rugged optical absolute singleturn encoder	Optical absolute singleturn Blind shaft encoder	Absolute singleturn sin/cos encoder
Main features	Low-cost magnetic single-turn absolute encoder with 4-20mA analog output interface and 10 bit resolution over a full mechanical turn. developed for current-loop based control systems.	Compact single-turn absolute encoder with max. resolution 13 bit represents a good compromise between price and performance suitable for heavy-duty and generic industrial applications ((aluminum body and housing). Available also in programmable version (resolution, type of output code, optional inputs, RS232 output).	Low-cost encoder for general industrial applications.	Rugged encoder for heavy duty industrial applications.	Rugged encoder for heavy duty industrial applications.	Rugged encoder for heavy duty industrial applications.	Analog single-turn absolute encoder for motor control application. The encoder output is a pair of SIN-COS signals developed on a single mechanical turn and can be also supplied with incremental output interface. Shaft diameter up to 15 mm (from 6 up to 14 mm with bushing).
Body diameter (mm)	38	50	63,5	63,5	80	63,5	42
Shaft (mm)	6	6	10	6, 8, 9,52, 10	6,8, 9,52, 10	15	15
Flange							
Resolution (ppr)	1024/360	Max 8192	Max 8192	Max 8192	Max 8192	Max 8192	Sin/Cos
Code	Analogue	Gray, binary, BCD	Gray, binary, BCD	Gray, binary, BCD, Analog	Gray, binary, BCD, Analog	Gray, binary, BCD	Analogue
Interface (output)	4:20 mA	NPN,PNP, SSI, RS232	NPN,PNP, SSI, RS232	TTL, OC, OP, NPN, PNP, SI3D, ANALOG, SSI, PP2, RS232	TTL, OC, OP, NPN, PNP, SI3D, ANALOG, SSI, PP2, RS232	OC,OP,NPN,PNP, SSI, RS232	2 Vpp
Operating temperature (C)	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-20°C ...+105°C
Protection degree	IP65	IP66	IP64	IP66	IP66	IP64	Open frame
Connection							

ABSOLUTE ENCODERS *multiturn*



Model	TSM60P-SSI/ TSMW60P-SSI	TSM60P-PRDP-PDNET/ TSMW60P-PRDP-PDNET	TSM58P-PRNET-IO/ TSMW58P-PRNET-IO	TSM58P-ETHCAT/ TSMW58P-ETHCAT	TSM58P-ETHNET-IP/ TSMW58P-ETHNET-IP
	Optical absolute multiturn Solid/hollow shaft encoder (SSI)	Optical absolute multiturn encoder (PRDP/PDNET) Solid/hollow shaft	Optical absolute multiturn encoder (Profinet IO) Solid/hollow shaft	Optical absolute multiturn encoder (EtherCAT) Solid/hollow shaft	Optical absolute multiturn encoder (EtherNet/IP) Solid/hollow shaft
Main features	Compact multiturn programmable absolute encoder with SSI for industrial application.	Multiturn programmable absolute encoder with Profibus for industrial application.	Multiturn programmable absolute encoder with Profinet for general and heavy-duty industrial application.	Multiturn programmable absolute encoder with EtherCat Technology for general and heavy-duty industrial application.	Multiturn programmable absolute encoder with EtherNet/ IP Technology for general and heavy-duty industrial application.
Body diameter (mm)	58	65	58	58	58/63,5
Shaft (mm)	Solid shaft: 6,10 Hollow shaft: 12	Solid shaft: 6,10 Hollow shaft: 8, 10, 11, 12, 14	Solid shaft: 6,10 Hollow shaft: 10, 12, 14, 15	Solid shaft: 6,10 Hollow shaft: 10, 12, 14, 15	Solid shaft: 6,10 Hollow shaft: 10, 12, 14, 15
Flange					
Resolution (ppr)	Max 8192x4096 Programmable Total resolution 25 bit programmable	Max 8192x4096 Programmable Total resolution 25 bit programmable	Singleturn – up to 16 bit Number of turn – up to 12 bit Total resolution 28 bit programmable	Singleturn – up to 16 bit Number of turn – up to 12 bit Total resolution 28 bit programmable	Singleturn – up to 16 bit Number of turn – up to 16 bit Total resolution 32 bit programmable
Code	Gray/binary	Gray/binary	Binary	Binary	Binary
Interface (output)					
Operating temperature (C)	-20 °C...+70°C	-20 °C...+70°C	-40 °C...+80°C	-40 °C...+80°C	-40 °C...+80°C
Protection degree	IP65	IP65	IP65/IP67	IP65/IP67	IP65
Connection					

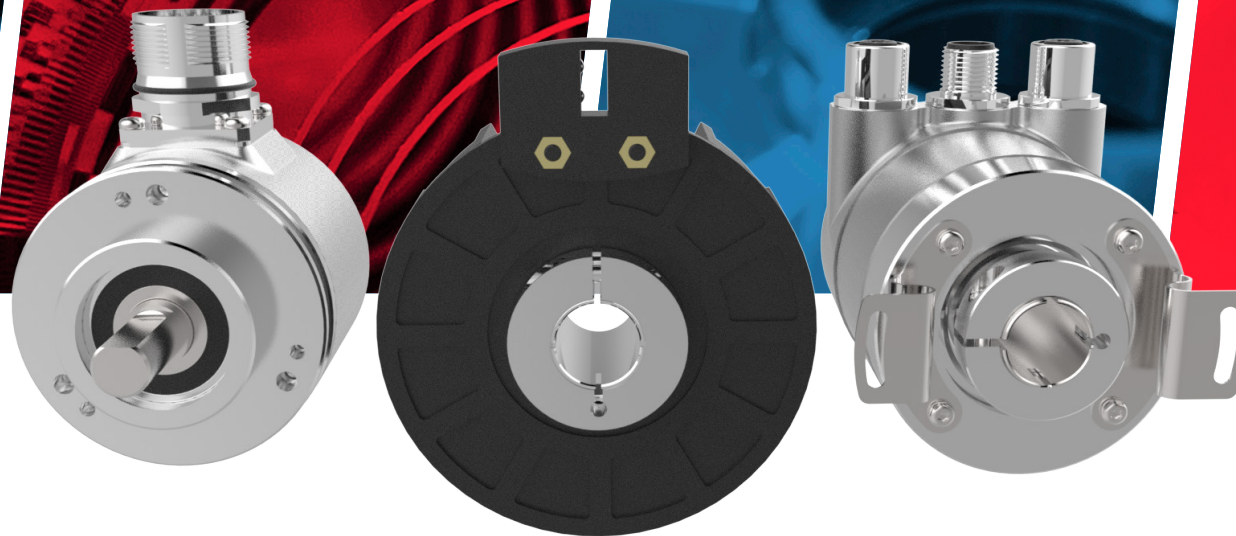
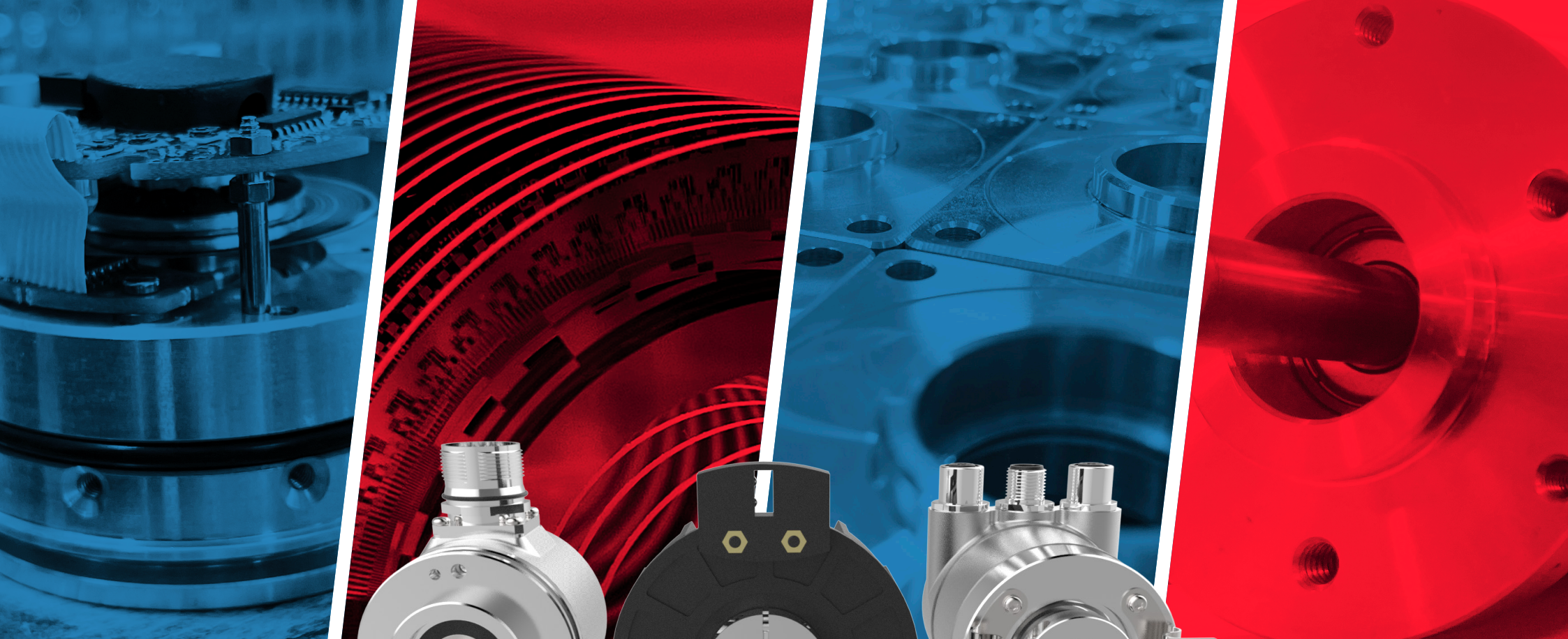
SPECIAL ENCODERS *bicoder / metric wheel / tachogenerator / centrifugal relay*



Model	TKM73/TKM38	TI70	TDT50/TDT100	TK250-TK260	TGR38	RM200/RS500	SG60	RSTX200
	Heavy-duty incremental encoder with integrated coupling	Rugged optical incremental encoder	Heavy duty encoder with integrated tachogenerator	Bicoder (incremental absolute)	Handwheel electronic incremental encoder	Metric wheel 200mm/500mm	Wire actuated transducer SG60	Metric wheel
Main features	Heavy duty incremental encoder with integrated coupling and mounting bell for generic industrial applications.	Rugged optical incremental encoder for heavy duty application. The model TI70 is developed and manufactured according to ATEX rules - ATEX EEx d IIB T6 (CEI EN 60079-0/60079-1 UI1203 C22.2), but it is supplied without ATEX certification.	Heavy duty incremental encoder with integrated coupling and mounting bell for generic industrial applications.	The Bicoder® are an encoder family with a monolithic structure equipped with two discs, two electronics, two reading systems completely different from each other, operating on the same shaft. The bicoders can be either incremental or incremental/absolute. Size and body dimensions are those typical models such as: TK50 (F, SG, FRE) and TK60H	Handwheel electronic incremental encoder for various industrial applications. The handwheel pulse generator is a special type of bidirectional incremental encoder through which it is possible to change manually the axis movement on a numeric control machine.	The metric wheels RM series suitable for applications where linear motion reading is requested, ex cutting of plates, wood, textile, glass etc., assuring high performance and reliability in heavy-duty applications as well. All wheels are assembled with on the encoder shaft with a collet for assuring perfectly concentric rotation.	Wire actuated transducer SG60 with measurement lengths up to 6000 mm. Wire actuated transducer of max. 6000mm, rugged, precise and reliable wire guide, suitable for different applications with many types of encoders flange standards - mod TS58 and mod TK60	Electronic metric wheel (200 mm) is suitable for applications where linear motion reading is requested (ex for continuous cutting of plate, wood, textile, glass, road, pipe etc.), assuring high performance and reliability also in heavy-duty applications. The peripheral surface of the wheel may be in PUR or other materials.
Body diameter (mm)	38/63,5	70/115 (FRE)	63,5/115 (FRE)	63,5/115 (FRE)	Diameter encoder 38 Diameter handwheel 60	50/58	58	63,6
Shaft (mm)	6, 8, 9,52, 10	10, 11	9,52, 10,11	6,1	6			
Flange								
Resolution (ppr)	Max. 3600	Max. 9000	Max 10000	Max. 9000	25/100	Max. 3600/Max 5000	Up to 0,01 mm	Max 10000
Interface (output)	S, P, OC, OP, PP2	LD, LD2	LD, LD2	LD, LD2	LD, LD2	LD,LD2,	LD,LD2	LD,LD2,
	LD; LD2	PP2, NPN, PNP	PP2, NPN, PNP, S	PP2, NPN, PNP	PP2, NPN, PNP	PP2,NPN,PNP	PP2,NPN,PNP	PP2,NPN,PNP
Operating temperature (C)	-10°C ...+70°C	-20°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C	-10°C ...+70°C		-10°C ...+70°C
Protection degree	IP64	IP64	IP66	IP66	IP55	IP64/IP66	IP66	IP65
Connection								



Model	TRC100	Protection module MPR01	Electronic card	Connectors	Couplings	Proximity sensors	Programming cable
	Encoder with centrifugal relay	Protection module MPR01	Electronic card	Connectors	Flexible metal and plastic couplings for incremental and absolute encoders	Inductive proximity sensors (Flush/ non flush)	Programming cable TISP58IPRGCBLL20 for incremental programmable encoder TISP58/TISPW58
Main features	Encoder with centrifugal relay for monitoring speed of axis and ensuring safety for industrial applications. Setting speed 780±6000 RPM	Protection module for three channel incremental encoder. The power supply line and the signals line are protected against supply voltage transient and induced noise by means of a passive system, composed by thermal resistor and Transient Voltage Suppressor (fast acting voltage suppressor). Guide DIN rail mounting.	Custom design of electronic modules, hardware and software upon customer's specifications. Italsensor is able to design and develop customized solutions that bring numerous benefits to the customers, minimizing costs and increasing efficiency and can be applied in industrial automation, automotive, domotics, green energy etc.	Wide range of flying military connectors (male/female) 5/7/10/12/23/26/32 poles Italsensor offers custom connections solutions by means of standard connectors and custom sealing products.	Flexible metal and plastic couplings for incremental and absolute encoders Different input/output diameters (ex. 8/10-9.52/10 etc) Flexible coupling Paguflex for incremental and absolute encoders.	Proximity sensor for general automation applications for detection of metallic objects. Detection distance from 1 up to 25 mm.	Programming cable with connector for USB type A and 12-pin female flying connector, directly usable with standard set for programmable encoder TISP58. This programming cable is used to power and program programmable incremental encoder TISP58 directly through USB port of a laptop or desktop PC. The total length of the cable is 2 mt.
Dimension (mm)		90,5x79x25					
Resolution (ppr)	Max 10000						
Interface (output)	LD, LD2 PP2, NPN, PNP	PP2				NPN, PNP; two wire systems	
Operating temperature (c)	-10 °C...+70°C	-40 °C...+100°C				-25 °C...+75°C	
Protection degree	IP64	IP20				IP67	
Connection							



www.italsensor.com



ITALSENSOR S.r.l.

Via Carlo Borra, 29/31

10064 PINEROLO (TO) | ITALY

Tel. +39.0121.502292

E-mail: info@italsensor.com

P.Iva/VAT: IT10125330018 - Codice SDI: M5UXCR1