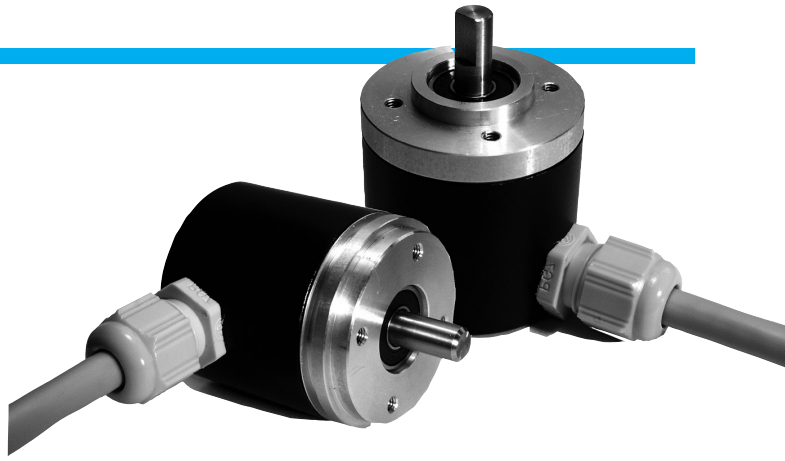
Magnetic absolute encoders MARC605 and 615

MARC605 – synchro flange, external diameter of the shaft 6 mm
MARC615 – clamping flange, external diameter of the shaft 6 mm

The magnetic single turn absolute rotary encoders type MARC605 and MARC615 working on magnetic Hall Effect principle. The encoder converts rotary motion to electrical signals. Electrical signals provide information of bilateral position of two mechanical parts, angle turn or rotary motion. A typical use is in conjunction with digital control system or drivers for control of the electric motors.



Type identification

MARC6 X 5 – X / XXXX XX

OUTLET
PA – Cable 1 m axial
PB – Cable 1 m radial
(longer cable on request)

OUPUT SIGNALS AND NUMBER OF BITS
31 – Parallel TTL binary 9 bits
11 – Serial SSI, diff. gray code into 12 bits
12 – Serial SSI, diff. bin code into 13 bits
21 – Serial SSI, single TTL gray code into 12 bits
22 – Serial SSI, single TTL bin code into 13 bits

DIAMETER OF SHAFTS
6 – shaft external diameter 6 mm (standard)
4 – shaft external diameter 4 mm (other diameter on request)

SUPPLY VOLTAGE
5 – + 5 V

MECHANICAL SPECIFICATION
0 – synchro flange
1 – clamping flange

TYPE OF ENCODER
6 – magnetic absolute encoder type MARC6x5

Technical data

ELECTRICAL DATE / TYPE	MARC605, 615
Positions per rotation	into 13 bits (into 8192 pos.)
Supply voltage max. U_N (V)	+ 5 ± 5%
Supply current max. I_N (mA)	50

Mechanical data and working conditions

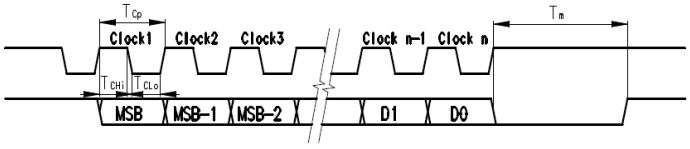
Rotational speed max.	10000 $min.^{-1}$
Angular acceleration max.	40000 $rad.s^{-2}$
Moment of inertia of mechanical parts max.	10 $g.cm^2$ ± 10 %
Vibration according to FCČSN345791	10g_n (10 to 2000 Hz)
Shock max.	50g_n (100 ms)
Shaft loads MARC605, 615 – axial max.	10 N
– radial max.	20 N
Working temperature	– 25˚ to + 80˚ C
Humidity relative / absolute	max. 95 % / max. 40$g.m^{-3}$
Atmosphere (without aggressive substances)	73,3 to 126,6 kPa
Type of protection	IP65
Weight MARC605, 615	ca. 0,15 kg
Length cable max.	50 m

Output signals MARC605 / MARC615

31 – Parallel TTL binary code for encoders with resolution into 9 bits (512 positions).
11 – Serial SSI, differential CLOCK/DATA signals (RS422), gray code into 12 bits (4096 pos.).
12 – Serial SSI, differential CLOCK/DATA signals (RS422), bin code into 13 bits (8192 pos.).
21 – Serial SSI, single TTL CLOCK/DATA signals, gray code into 12 bits (4096 pos.).
22 – Serial SSI, single TTL CLOCK/DATA signals, bin code into 13 bits (8192 pos.).

SSI communicaton

Parameter	Symbol	Min	Max	Unit
Clock period	T_{Cp}	250	2xT_m	µs
Clock High	T_{CHi}	25	T_m	µs
Clock Low	T_{CLo}	25	T_m	µs
Monoflop time	T_m	16	20,5	µs



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Description of connection elements MARC605 and 615

Colors of connection cable	Significance MARC605 and 615
Grey	SSI – CLOCK-
Pink	SSI – DATA-
Blue	INC – Signal Z (1)
Violet	SSI – DATA+
Yellow	INC – Signal A (1)
White	SSI – CLOCK+
–	NC
Green	INC – Signal B (1)
Shield	Shield
Black	GND
Brown	GND
Red	V_{cc} + 5 V

(1) Only on request

Assembly

The encoders MARC605 are installed into appropriate equipment using 4xM3 screws on dia. 26 mm or a groove. The position of the shaft is explicitly determined by a fitted diameter of 33h7. The encoders MARC615 are fixed into the equipment by 2xM3 screws on dia. 22,0 mm. Centering of encoder is determined by mat fits diameter 15h7. The connection has to be constructed so as to avoid exceeding the maximum radial or axial shaft load permitted. It is necessary to keep alignment connection. It is recommended to use suitable homokinetic diaphragm couplings.
When temperature is less then –5°C cable must be fixed.

How to order?

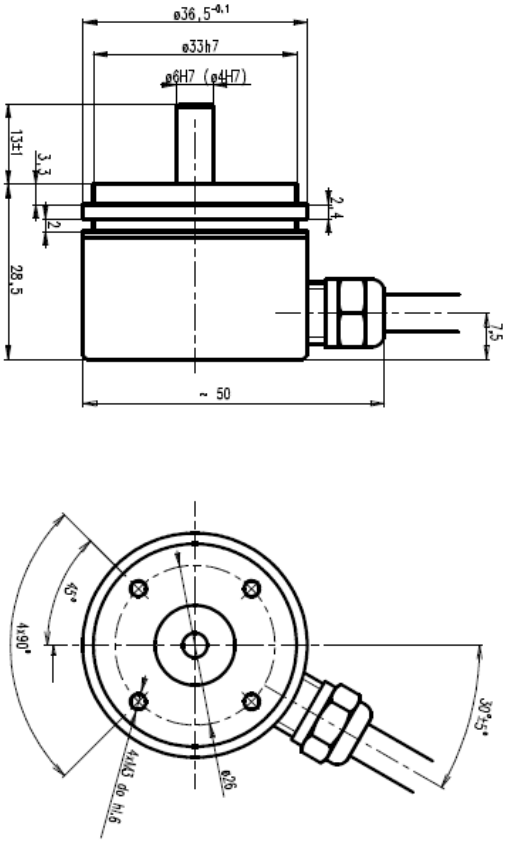
Please indicate encoder type, number of impulses per rotation, outlet, number of pieces, delivery term and other non-standard features.Connecting cable and homokinetic diaphragm couplings can be ordered as well [see Accessories catalogue list].

Example

10 pcs MARC615/31PB and 10 pcs coupling SP9. Delivery term – two weeks.

Dimensioned drawing

MARC600, 605



MARC610, 615