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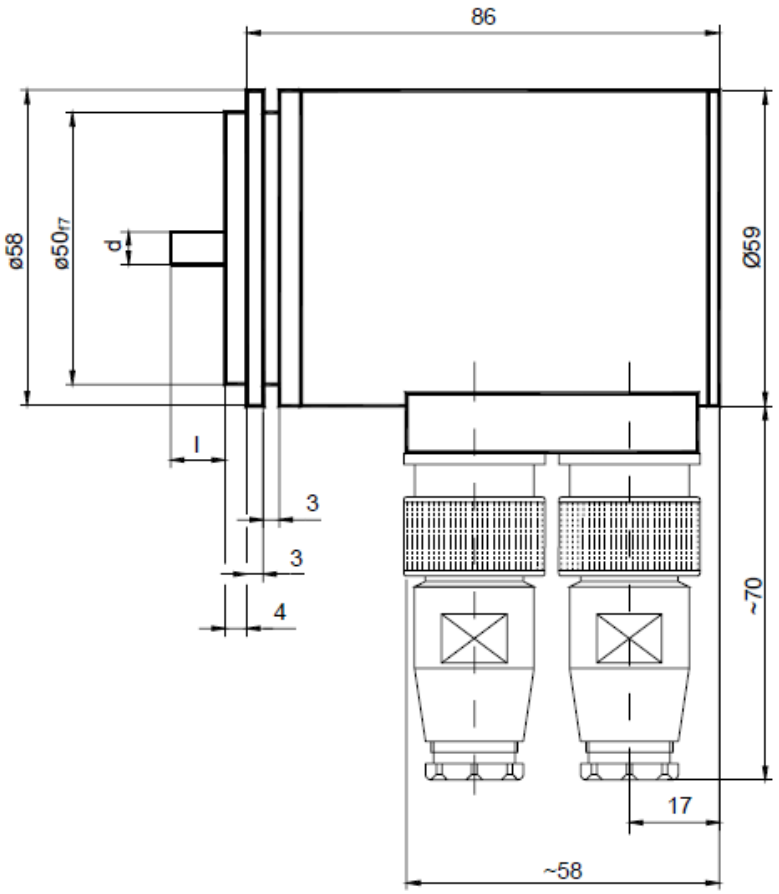
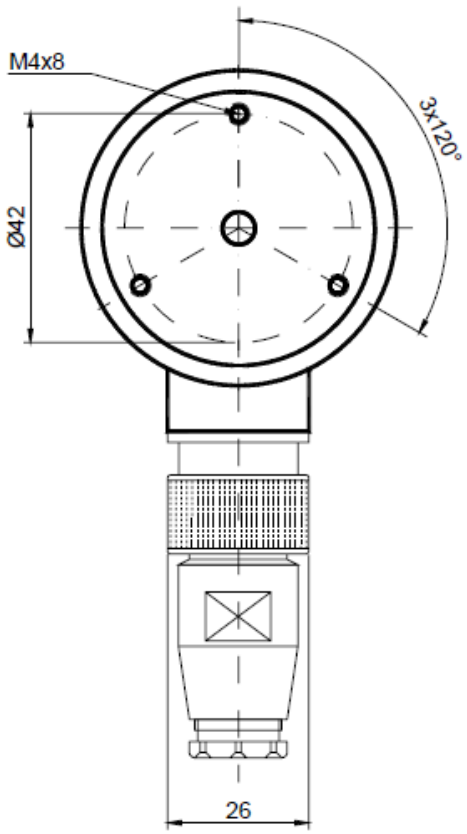
MHM5

INTERBUS ABSOLUTE MULTI-TURN ENCODER, MHM506-INTB RANGE

- MHM506-INTB, standard encoder Ø58mm with Interbus interface:
- Robust and compact conception,
- Solid shaft version Ø 06 mm, servo flange,
- Precision ball bearings with sealing flange,
- High temperatures performances –40°C … +85°C,
- Code disc made of unbreakable and durable plastic,
- Mechanical memorisation of the number of turns by gears,
- Resolution : 13 bits = 8192 steps/turn,
- Number of turns : 12 bits = 4096 turns,
- Polarity inversion and short circuit protection,
- Highly integrated circuit in SMD-technology.

MHM506-INTB DIMENSIONS





MECHANICAL DATA

Material	Cover : aluminum
	Body : aluminum
	Shaft: stainless steel
Max. shaft loading	Axial : 40 N
	Radial : 110 N
Shaft Inertia	≤ 30 g.cm²
Torque	≤ 3 N.cm
RPM (continuous operation))	6 000 rpm
Shock (EN 60068-2-27)	≤ 30 g (halfsinus, 11ms)
Shock (EN 60028-2-29)	≤ 10 g (half-sinus, 16ms)

Vibrations (EN 60068-2-6)	≤ 10 g (10Hz… 1 000Hz)
Weight	600 g
Operating temperature	0 … + 60°C
Storage temperature	- 40 ... + 85°C
Humidity	98 % without condensation
Protection class (EN 60529)	IP65: cover
	IP64: shaft

Lifetime in 10^8 revolutions with F_a / F_r (axial/radial)		
40 N / 60 N	40 N / 80 N	40 N / 110 N
822	347	133

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CE

ELECTRICAL DATA

Interface	Line-driver RS485
Transmission rate	500kBaud or 2MBaud
Power supply	10 – 30Vdc
Current consumption	max 3.5Watt

Step Frequency LSB	Max 800 kHz (valid code)
Accuracy	+ ½ LSB
EMC	EN 61000-6-4 EN 61000-6-2
Electrical lifetime	> 10^5 h

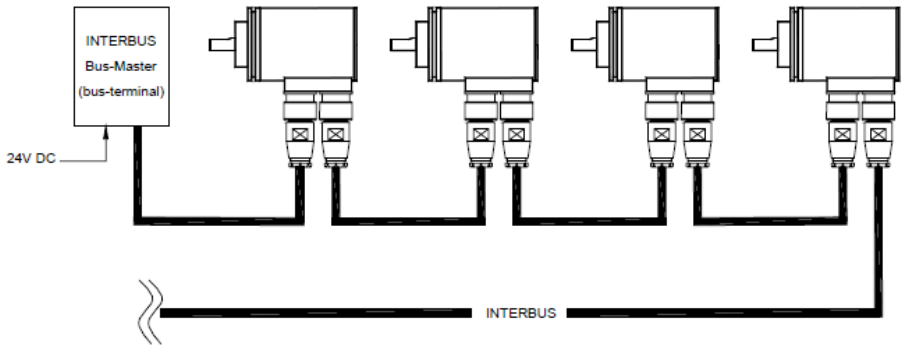
PROGRAMMABLE PARAMETERS

The Interbus encoder supports the programmable encoder profiles K1, K2 or K3 of the ENCOM (User group of encoder manufacturers in the Interbus club). The following parameters can be programmed directly via the INTERBUS network without any extra devices:

Code sequence	As an operating parameter the code sequence (complement) can be programmed. This parameter determines whether the output code increases or decreases when the axis is turned clockwise.
Output steps over number of revolutions	This parameter defines the number of measuring steps over the number of revolutions described below.
Number of revolutions	This parameter determines the number of revolutions used to calculate the steps per revolution. For example: Total resolution=8, Revolutions=2, then the Steps per revolution will be equal to 4. This value must always be less than the total allowed revolutions (for a multi-turn, 4,096).
Preset value	The preset value is the desired output value for the actual position of the axis. The actual output value will be set to this preset value.
Zero point displacement	This parameter sets the zero point of the output in relation to the physical zero point position of the encoder. (same functionality as preset value).
Velocity (Optional)	Optionally, the current rotational velocity of the axis can be output in revolutions per minute.
Read-out parameter values and temperature (Optional)	Optional all parameter values, certain other information (specified in the manual) and the temperature value of an additional temperature sensor can be read out via the bus.
Cam functions	Cam functions which are entirely programmable via the bus are integrated in the encoder.

INTERFACE

The rotary encoder is connected by two cables via 9-pin connectors, one as input line, the other one as output line. Each cable contains both power supply and the bus lines. To ensure the correct wiring, the input socket on the encoder has pins (male) whereas the output socket has holes (female). The address of the encoder is derived from its physical position in the network. The encoder is designed for a remote bus with up to 32 bits of I/O data. In the master (controller) the actual process values occupy one or two word addresses for profile K1 or K2 and K3, respectively.



Male (IB-In)	Signal	Female (IB-Out)
1	DO	1
2	DO /	2
3	DI	3
4	DI /	4
5	GND	5
6	PE	6
7	+ 10-30Vdc	7
8	GND (0V)	8
9	NC	9

IB-coupling	Class	Max. Bits	Progr.	No of words	ID-code	
					Binary	Hex
Remote Bus	K1	16	No	1 IN	0000 0001 0011 0110	0136
Remote Bus	K2	32	No	2 IN	0000 0010 0011 0110	0236
Remote Bus	K3	32	yes	2 IN + 2 OUT	0000 0010 0011 0111	0237

ORDERING REFERENCE Contact the factory for special versions, ex: electronics, special flanges, connections…)

MHM5	IB	A1	B	12	13	S	06	0	PRI
Absolute multi turn encoder	Interbus	Version	Code : Binary	Number of turns 2^{12} (4 096)	Resolution (pos./turn) 2^{13} (8 192)	Servo Flange	Shat diameter : 6mm	Without mechanical option	M23 Connection