Absolute Encoder Profibus-DP RIPOS PB	Type:	MGIxP
Measuring ranges 0 … 1 and 0 … 4096 rotations	Order No.:	see table 1

CE

Dimensions

Dimensions in mm ["]

Type	Measuring range	Measuring principle	Order No.
MGISP	0 … 360°	optical 13 Bit	00 65 905.001
MGIMP	0 … 360° + 0 … 4096 rotations	optical 13 + 12 Bit	00 65 905.002

Table 1: Measuring ranges encoder

Application

The absolute measuring encoder RIPOS PB for Profibus-DP connection serves the acquisition of mechanical positions (angle of rotation, stroke, travel) of positioning units.
The compact and robust construction as well as the simple installation enables a wide application of the unit, for example for the position measurement of flaps, slides, valves, turbines, travelling and slewing cranes, winches, sluices, rudders, etc.

Short description

The movement to be measured is transferred to the input shaft by means of toothed wheel, transfer chain, lever, universal joint, etc and converted into a digital electrical signal by an optical primary sensor.

Signal processing within the primary sensor takes place with the aid of a temperature insensitive IR-opto-receiver-ASIC with integrated signal conditioning.

The unit can be parameterised via the Profibus connection by means of appropriate Software. For parameterisation of MGIxP you need a so-called GSD-file; see chapter accessories.

Being parameterised are direction of rotation (complement), resolution per rotation, total resolution, preset value, output of velocity, time base for velocity, software limit switches.

The supply connections and signal outputs are protected against reverse and over voltage.

The RIPOS PB can also be equipped with optional heating (MGZH).

Technical data

Type		MGISP	MGIMP
Measuring range (FS)	[°] [rotations]	360 1	1'474'560 4096
Resolution	[Bit] [°]	13 0.044	13 + 12 0.044
Accuracy of division	[LSB]	+/- 2	+/- 2

Notice:
The encoders MGIxP are mechanically completely rotatable.

Measuring range independent technical data

Electrical interface

- Physically   Line-Driver according to RS 485, galv. Isolated by opto-couplers
- Baud rates   12 MBaud; 6 MBaud; 3 MBaud; 1.5 MBaud; 500 kBaud;
                      187.5 kBaud; 93.75 kBaud ; 45.45 kBaud; 19.2 kBaud; 9.6 kBaud
- Device addressing   Adjustable by rotary switches in the unit

Environmental conditions

- Operating temperature range   -25...+60°C   (without Heating)
                                 -40...+60°C   (with Heating MGZH
- Protection class   IP67 (optional IP68 / 35 m immersion depth)
- Standard cable connection   M10x1.5 for supply, clamping range 4...6 mm
                                 M16 x1.5 for data, clamping range 6...8mm
- Installation position   as required
- Housing material   AlSi1MgMn, AlMg4.5Mn
- Housing colour   blue/green (NCS-S-2555- BG60G)
- Kind of Coating   Powder coating, total layer thickness approx. 80 μm
- Weight   approx. 3.0 kg
- Vibration (EN 60068-2-6)   ≤ 10 g (10 Hz … 2000 Hz)
- Shock (EN 60068-2-27)   ≤ 100 g (half sine, 6 ms)
- Permanent shock (EN 60028-2-29) ≤ 10 g (half sine, 16 ms)

Power consumption

- Supply voltage range   DC 10...30 V (absolute limits)
- Power consumption   ≤ 2.5 W (without Heating MGZH)
- Power consumption heating approx. 19.2 W (Supply range: DC 24 V ±10 %),
                             heating is controlled thermostatically

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Quality tests

CE Conformity in agreement with the EC EMC guidelines (89/336/EWG).

The unit fulfils the requirements for the CE marking in accordance with:
- Emitted interference EN 61000-6-4
- Noise immunity EN 61000-6-2

Parameterisation

The encoder with Profibus interface can be configured and parameterised according to the needs of the user. To do this you have to load the so-called GSD-file into the project planning tool. During project engineering different encoder classes are available. Adjustable parameters and functionality of the unit depend on the selected encoder class.

Encoder profiles

Main function: Transmission of actual process value (angle) in binary code.

Specified by the PROFIBUS User Organisation:

- Class 1:   Not being parameterised (besides direction of rotation)

- Class 2:   Being parameterised:
    - Direction of rotation
    - Gear coefficient
    - Scaling (resolution / rotation)
    - Preset value

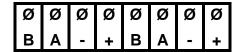## Specified by Rittmeyer for expanded functionality

- Type 1:   - Online parameterisation (teach-in)
                 - Software Limit Switch

- Type 2:   - Like Type 1
                 - Additionally: Speed

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Electrical connections

Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
B	A	-	+	B	A	-	+

Terminal: **Description:**

B (left)   Bus line B (Bus in)
A (left)   Bus line A (Bus in)
-               0 V
+   10 – 30 V
B (right)   Bus line B (Bus out)
A (right)   Bus line A (Bus out)
-               0 V
+   10 – 30 V

The power supply has to be connected once (no matter which terminal).
The outgoing bus lines are disconnected when the terminating resistor is switched on.

Unit dehumidification

A dehumidifying bag with indicator is used for dehumidifying the inside of the unit.
Depending on application conditions, the dehumidifier should be checked at least yearly and renewed as necessary.
A spare dehumidifying bag is delivered with the unit.

Accessories

	Type	**Ordering No.**
• Protection class IP68, incl. assembly of connection cable	MGZIP68	P. MGZIP68
• Heating for MGIxP, DC 24V / 19.2 W	MGZH	00 65 978.001
• Supply cable 3 x 0.5 mm^2 (WILBAFLEX PUR orange)	-	04 60 703
• Profibus cable 2-wire, shielded	-	04 64 990
• Profibus plug, L2Bus / PG-B (for connection to Master)	-	15 00 202
• GSD-file inclusive documentation to MGxxP	MGZGSD	00 65 968.001
• Dehumidifier (2 bags, boxed)	ZWE.BEUT	00 29 201.003
• Silicone grease, tube at 60 g (for O-rings)	-	60 01 223

Notice:
Additional accessories see data sheet „Level- and Position Measurement" 24.210.0065976.001.

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