Baumer
Passion for Sensors

Absolute encoders

PMG10P - CANopen®

Solid shaft ø11 mm with EURO flange B10 or housing foot B3 / CANopen® / 13 bit ST / 16 bit MT
Speed switch, number of pulses and switching speed freely programmable

Overview

- Interface CANopen®
- Magnetic sensing method
- Resolution: singleturn 13 bit, multiturn 16 bit
- Function display via LEDs
- Multiturn sensing with Energy Harvesting technology "MicroGen", without gear or battery
- Two-sided bearing system with hybrid bearings
- Special protection against corrosion CX (C5-M)

Picture similar

HUBNER
BERLIN
A Baumer Brand

microGen
Energy Harvesting

Technical data

Technical data - electrical ratings

Voltage supply	10...30 VDC
Short-circuit proof	Yes
Consumption w/o load	≤200 mA
Initializing time	≤ 500 ms after power on
Interface	CANopen®
Function	Multiturn
Transmission rate	10 … 1000 kBaud
Device adress	Rotary switches in bus connecting box
Steps per revolution	8192 / 13 bit
Number of revolutions	65536 / 16 bit
Additional outputs	Square-wave TTL/HTL,TTL/RS422
Sensing method	Magnetic
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Programming interface	RS485 (≤600 m)
Programmable parameters	Bus system: see bus features Additional output (number of pulses), switch-off and switch-on speeds
Diagnostic function	Position or parameter error
Status indicator	DUO-LED (bus connecting box) 4 LEDs in device back side
Approval	CE UL approval / E217823 EAC

Technical data - electrical ratings (speed switch)

Switching accuracy	± 2 % (or 1 Digit)
Switching outputs	1 output (Open collector, solid state relay on request)

Technical data - electrical ratings (speed switch)

Output switching capacity	30 VDC; ≤100 mA
Switching delay time	≤20 ms

Technical data - mechanical design

|	
Size (flange)	ø115 mm
Shaft type	ø11 mm solid shaft
Flange	EURO flange B10 Housing foot B3
Protection EN 60529	IP 66/IP 67
Operating speed	≤6000 rpm
Range of switching speed	ns (off) = ±2...6000 rpm, factory setting 6000 rpm
Operating torque typ.	10 Ncm
Rotor moment of inertia	1 kgcm²
Admitted shaft load	≤450 N axial ≤650 N radial
Material	Housing: aluminium alloy Shaft: stainless steel
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions CX (C5-M) according to ISO 12944-2
Operating temperature	-40...+85 °C
Relative humidity	95 % non-condensing
Resistance	IEC 60068-2-6 Vibration 30 g, 10-2000 Hz IEC 60068-2-27 Shock 400 g, 1 ms
Weight approx.	2.7 kg (depending on version)
Connection	Bus connecting box Terminal box incremental

Absolute encoders

PMG10P - CANopen®

Solid shaft ø11 mm with EURO flange B10 or housing foot B3 / CANopen® / 13 bit ST / 16 bit MT
Speed switch, number of pulses and switching speed freely programmable

Optional

- Integrated speed switch programmable
- Additional output incremental programmable

2021-10-13

PMG10P - CANopen®

Solid shaft ø11 mm with EURO flange B10 or housing foot B3 / CANopen® / 13 bit ST / 16 bit MT
Speed switch, number of pulses and switching speed freely programmable

Terminal assignment

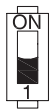### CANopen - View A *(see dimension)*
View inside bus connecting box CANopen®
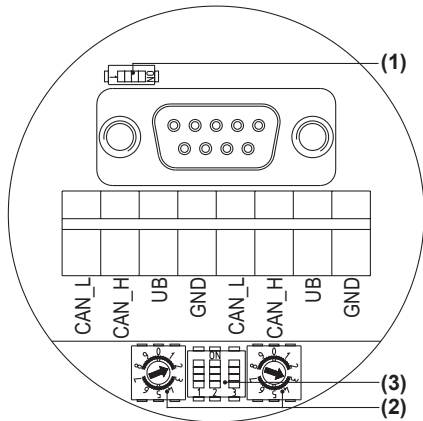
Terminals of the same significance are internally connected and identical in their functions. Max. load on the internal terminal connections UB-UB and GND-GND is 1 A each.
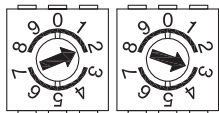
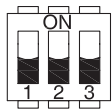### Terminating resistor (1)
ON = Last user
OFF = User x

User address (2)
Defined by rotary switch.
Example: User address 23
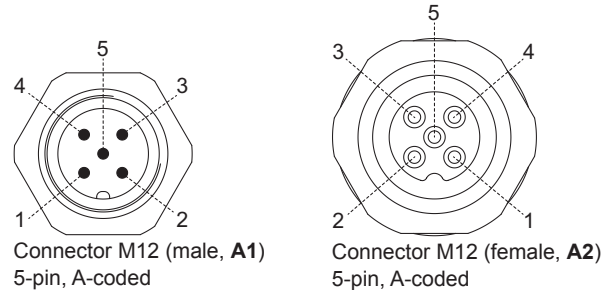

CANopen - Transmission rate (3)

Transmission rate	Setting DIP switches		
	1	2	3
10 kBaud	OFF	OFF	OFF
20 kBaud	OFF	OFF	ON
50 kBaud*	OFF	ON	OFF
125 kBaud	OFF	ON	ON
250 kBaud	ON	OFF	OFF
500 kBaud	ON	OFF	ON
800 kBaud	ON	ON	OFF
1000 kBaud	ON	ON	ON

* Factory setting

Terminal assignment

CANopen - View A1 and A2 *(see dimension)*
View into connector

Connector M12 (male, **A1**)
5-pin, A-coded

Connector M12 (female, **A2**)
5-pin, A-coded

Pin	Connection
1	GND
2	UB
3	GND
4	CAN_H
5	CAN_L

Terminals of the same significance are internally connected and identical in their functions. Max. load on the internal terminal connections GND-GND is 1 A each.

View B *(see dimension)*
Connecting terminal terminal box
Programming interface / speed switch /
additional output II (HTL, TTL)
* Assignment depends on encoder version
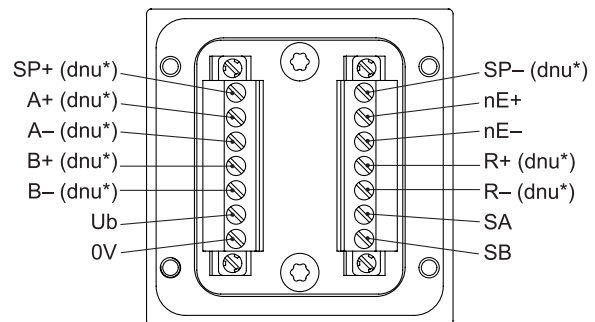
Terminal significance

CANopen®

Connection	Description
GND	Ground for UB
UB	Voltage supply 10...30 VDC
CAN_H	CAN Bus signal (dominant HIGH)
CAN_L	CAN Bus signal (dominant LOW)

Terminal significance

|	
Ub	Voltage supply
0V	Ground
A+	Output signal channel 1
A–	Output signal channel 1 inverted
B+	Output signal channel 2 (offset by 90° to channel 1)
B–	Output signal channel 2 inverted
R+	Zero pulse (reference signal)
R–	Zero pulse inverted
nE+	System OK+ / error output
nE–	System OK– / error output inverted
SP+	DSL_OUT1 / speed switch (open collector, solid state relay on request)
SP–	DSL_OUT2 / speed switch (0V, solid state relay on request)
SA	RS485+ / programming interface
SB	RS485– / programming interface
dnu	Do not use

CANopen® features

Bus protocol	CANopen®
Features	Device Class 2 CAN 2.0B
Device profile	CANopen® CiA DSP 406, V 3.0
Operating modes	■ Polling mode (asynch, via SDO)
	■ Cyclic mode (asynch-cyclic)
	■ Synch mode (synch-cyclic)
	■ Acyclic mode (synch-acyclic)
Diagnosis	The encoder supports the following error warnings:
	■ Position errror
Factory setting	User address 00

Output signals

Additional output II (HTL/TTL)
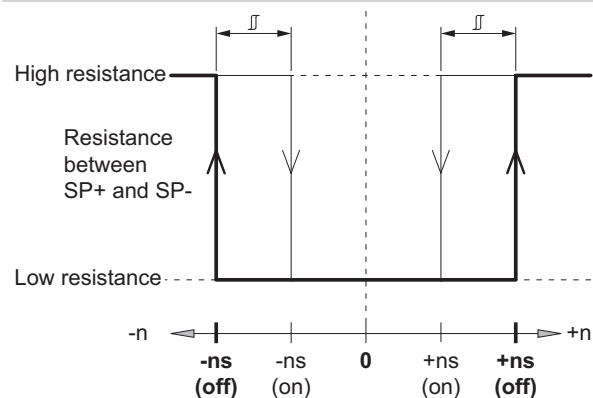At positive rotating direction *(see dimension)*
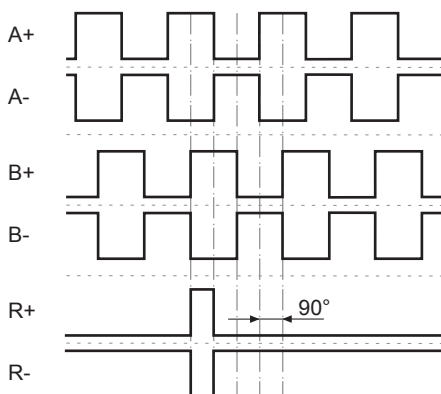
Trigger level

Incremental HTL/TTL

Electrically isolated:
The output TTL/HTL (Vin = Vout) at the additional output II is electrically isolated and requires a separate power supply.

Trigger level	TTL/RS422
High / Low	≥2.5 V / ≤0.5 V
Transmission length	≤550 m @ 100 kHz
Output frequency	≤600 kHz
Trigger level	**TTL/HTL (Vin = Vout)**
High / Low	≥2.5 V / ≤0.5 V (TTL) ≥Ub -3 V / ≤1.5 V (HTL)
Transmission length	≤550 m @ 100 kHz (TTL) ≤350 m @ 100 kHz (HTL)
Output frequency	≤600 kHz (TTL); ≤350 kHz (HTL)

Switching characteristics speed switch

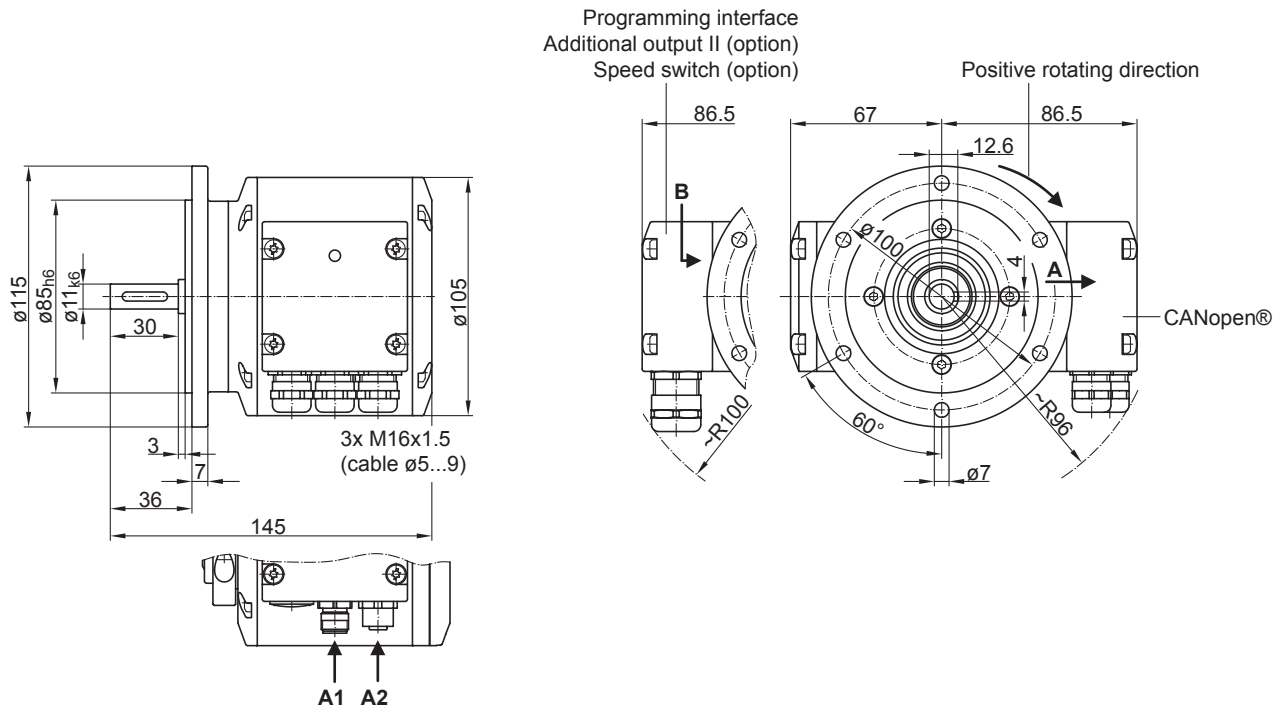| n	Speed
+ns (off)	Switch-off speed at shaft rotation in positive rotating direction *(see dimension)*.
-ns (off)	Switch-off speed at shaft rotation in negative rotating direction *(see dimension)*.
	Switching hysteresis ∬: 10...100 % (factory setting = 10 % min. 1 Digit)
+ns (on)	Switch-on speed at shaft rotation in positive rotating direction *(see dimension)*.
-ns (on)	Switch-on speed at shaft rotation in negative rotating direction *(see dimension)*.

PMG10P - CANopen®

Solid shaft ø11 mm with EURO flange B10 or housing foot B3 / CANopen® / 13 bit ST / 16 bit MT

Speed switch, number of pulses and switching speed freely programmable

Dimensions

Programming interface
Additional output II (option)
Speed switch (option)

Positive rotating direction

Version with Euro flange (B10)

Programming interface
Additional output II (option)
Speed switch (option)
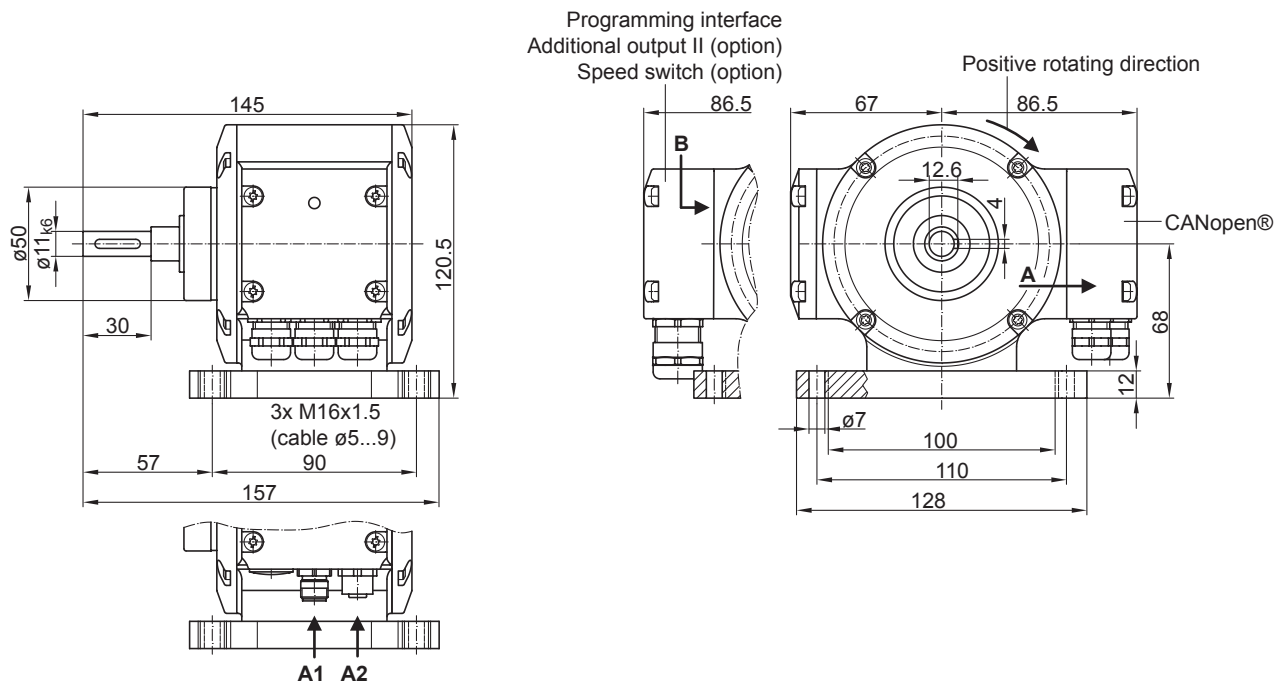
Positive rotating direction

Version with housing foot (B3)

PMG10P - CANopen®

Solid shaft ø11 mm with EURO flange B10 or housing foot B3 / CANopen® / 13 bit ST / 16 bit MT
Speed switch, number of pulses and switching speed freely programmable

Ordering reference

	PMG10P	#	- S	H	#	. 1	#	C6	3	.	#	0	0	#	A
Product															
Absolute encoder	PMG10P														
Digital speed switch															
With[1]		D													
Without		-													
Shaft type															
Solid shaft			S												
Flange (Solid shaft)															
EURO flange B10, hybrid bearings				H											
Protection class															
IP 66 and IP 67, optimized for dusty, abrassive environment					D										
IP 66 and IP 67, optimized for oily, wet environment					L										
Solid shaft															
Ø11 mm, featherkey 4 mm						1									
Connection															
Bus connecting box with 3 cable glands M16, radial + terminal box with 1 cable gland M20, radial							F								
Bus connecting box with 2 connectors M12, radial + terminal box with 1 cable gland M20, radial							Z								
Supply voltage (field bus)															
10...30 VDC, CANopen (DS 406)								C6							
Resolution singleturn position															
13 Bit									3						
Resolution multiturn position															
No multiturn signal										0					
16 Bit										6					
Resolution speed															
No speed signal											0				
Resolution supplement I															
No additional output I												0			
Resolution supplement II															
No additional output II													0		
1024 ppr TTL/HTL push-pull (Vin=Vout), 6 channels, electrically isolated[2]													5		
1024 ppr TTL (RS422), 6 channels[2]													6		
Operating temperature															
-40...+85 °C															A

(1) Switching speed 6000 rpm / factory setting, programmable
(2) Factory setting, programmable

Accessories

Mounting accessories

	Spring disk coupling K 35 (shaft ø6...12 mm)
	Spring disk coupling K 50 (shaft ø11...16 mm)
	Spring disk coupling K 60 (shaft ø11...22 mm)

Connectors and cables

11191145	Programming cable for the HMG10P/PMG10P bus interfaces series

Programming accessories

11190106	Z-PA.SDL.1 - WLAN-Adapter