Absolute Baumer encoders

Absolute Baumer encoders are sensors that determine current degree of shaft displacement at any time (so-called absolute position).

Such devices are divided according to the principles of scanning into magnetic and optical.

Optical sensors are able to produce more accurate results, but they don't reliable in harsh conditions. The German company produces models with a solid, blind and through hollow shaft.

Magnetic sensors are more resistant to environmental influences, but less accurate. The models are available with a housing diameter from 28 to 58 mm. Devices are manufactured with both a solid and a hollow shaft.

Content.

www.eltra-trade.com info@eltra-trade.com +421 552 601 099

Compact high performance

All standard interfaces, either device-integrated or in modular bus cover.

With Baumer, you will always encounter the absolute encoder that is just right for your requirements – with conventional point-to-point interface or realtime Ethernet, with precise optical or robust magnetic sensing, from compact ø30 mm size on to large hollow shafts of ø50 mm. The products are optimized for maximum performance and hence ideal for demanding applications where they measurably contribute towards increased productivity.

Reliable quality and flexible supplies of any interface and product variant: This involves qualified and committed people, intelligent technologies and the latest production methods.

Sensing technologies

Optical or magnetic sensing
Optical encoders ensure ultimate precision and maximum magnetic field immunity in parallel.
They allow for resolutions up to 18 bits per turn at an accuracy as high as ±0.01°. Magnetic encoders of the *MAGRES* series are particularly robust and always provide reliable operation even under heavy shocks and vibrations or where there is dew and condensation.

Industrial encoders absolute
Size up to ø36 mm

Robust, precise magnetic sensing.
- Solid shaft and blind hollow shaft
- Compact designs for tight spaces
- Shock resistant up to 500 g
- Angular accuracy up to ±0.15°

CANopen
SAE J1939
SSI

MAGRES

Features	■ Solid shaft with flat mounting flange ■ Redundante sensing	■ Solid shaft with synchro flange	■ Solid shaft with synchro flange ■ E1 compliant design ■ Corrosion protection CX (C5-M) ■ ISO 13849 compliant firmware	■ Blind hollow shaft
Product family	EAM280	EAM360-SW	EAM360R-SW	EAM360-B

Interface				
- SSI	–	■	–	■
- Analog	■	–	■	–
- CANopen® / redundant	■ / ■	■ / –	■ / –	■ / –
- CANopen® Lift	–	■	–	■
- SAE J1939	–	–	■	–

Function principle	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn
Sensing method	Magnetic						
Size (housing)	ø28.6 mm	ø36 mm					
Voltage supply	10...30 VDC (CANopen®) 12...30 VDC (Analog) 5 VDC ±5 % (Analog)	4.5 ... 30 VDC (CANopen®, SAE J1939, SSI) 8 ... 30 VDC / 14 ... 30 VDC (Analog - type-specific)					
Shaft type							
- Solid shaft	ø6 mm	ø10 mm		ø10 mm		–	
- Blind hollow shaft	–	–		–		ø10...15 mm	
Connection							
- Flange connector M12	Radial	Radial		Radial		Radial	
- Cable	Radial	Radial (0.14 mm²)		Radial (0.5 mm²)		Radial (0.14 mm²)	
Steps per turn	4096/12 bits (Analog) 16384/14 bits (CANopen®)	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits
Number of turns	–	≤262144/18 bits	–	≤262144/18 bits	–	≤262144/18 bits	–
Absolute accuracy	±1.8°	Up to ±0.15°					
Operating temperature	-40...+85 °C						
Protection	IP 65, IP 67	IP 65, IP 67		IP 67		IP 65, IP 67	
Operating speed	≤800 rpm	≤6000 rpm					
Max. shaft load	≤25 N axial, ≤25 N radial	≤40 N axial, ≤80 N radial					
Options	Cable with DEUTSCH connector	Additional incremental signals (SSI, CANopen®) Corrosion protection CX (C5-M)		Cable with DEUTSCH connector		Additional incremental signals (SSI, CANopen®) Corrosion protection CX (C5-M)	

Robust, precise magnetic sensing.
- Solid shaft and blind hollow shaft
- Compact designs for tight spaces
- Shock resistant up to 500 g
- Angular accuracy up to ±0.15°

Learn more:
www.baumer.com/absolute

MAGRES

| Features	■ Blind hollow shaft
	■ E1 compliant design
	■ Corrosion protection CX (C5-M)
	■ ISO 13849 compliant firmware
Product family	EAM360R-B

Interface	
- SSI	
- Analog	■
- CANopen® / redundant	■ / –
- CANopen® Lift	–
- SAE J1939	■

Function principle	Multiturn	Singleturn
Sensing method	Magnetic	
Size (housing)	ø36 mm	
Voltage supply	4.5...30 VDC (CANopen®, SAE J1939, SSI) 8...30 VDC / 14...30 VDC (Analog - type-specific)	

Shaft type		
- Blind hollow shaft	ø10...15 mm	
Connection		
- Flange connector M12	Radial	
- Cable	Radial (0.5 mm²)	
Steps per turn	≤65536/16 bits	≤65536/16 bits
Number of turns	≤262144/18 bits	–
Absolute accuracy	Up to ±0.15°	
Operating temperature	-40...+85 °C	
Protection	IP 67	
Operating speed	≤6000 rpm	
Max. shaft load	≤40 N axial, ≤80 N radial	
Options	Cable with DEUTSCH connector	

MAGRES – Robust precision

The latest generation of our absolute encoders *MAGRES* is based on an innovative, patent-pending magnetic singleturn and multiturn sensing method with proven but even further improved robustness and longevity.

Thanks to optimally harmonized components and supreme, sophisticated signal processing, these encoders operate with a precision that previously only optical encoders could achieve.

Position deviation — 0° · Position · 360°
- Baumer
- Others
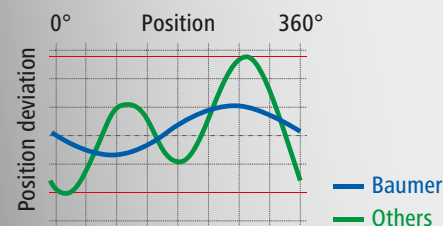
R-Series for extreme applications

Your benefits
- CX (C5-M) corrosion protection for high durability in outdoor use
- E1 compliant design for high electromagnetic compatibility when used in vehicles
- ISO 13849 compliant firmware for use in safety functions up to PLd
- Robust strand cross-section 0.5 mm² for cable with DEUTSCH connector

Our qualified and experienced experts would be glad to support you in the design of your safety-relevant application and its certification by the notified body.

Industrial encoders absolute
Size ø58 mm

Robust, precise magnetic sensing.
- Solid shaft and blind hollow shaft
- Compact designs for tight spaces
- Shock resistant up to 500 g
- Angular accuracy up to ±0.15°

PROFI NET®

SSI

SAE J1939

CANopen

MAGRES

Features	■ Solid shaft with clamping or synchro flange	■ Solid shaft with clamping or synchro flange ■ E1 compliant design ■ Corrosion protection CX (C5-M) ■ ISO 13849 compliant firmware	■ Blind hollow shaft	■ Blind hollow shaft ■ E1 compliant design ■ Corrosion protection CX (C5-M) ■ ISO 13849 compliant firmware
Product family	EAM580-S	EAM580R-S	EAM580-B	EAM580R-B

Interface				
- SSI	■	–	■	–
- Analog	–	■	–	■
- CANopen® / redundant	■ / –	■ / ■	■ / –	■ / ■
- CANopen® Lift	■	–	■	–
- SAE J1939 / Profinet	– / ■	■ / –	– / ■	■ / –
- EtherCAT / EtherNet/IP	■ / ■	– / –	■ / ■	– / –

Function principle	Multiturn	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn
Sensing method	Magnetic							
Size (housing)	ø58 mm							
Voltage supply	4.5 … 30 VDC (CANopen®, SAE J1939, SSI), 8 … 30 VDC / 14 … 30 VDC (Analog - type-specific), 10 … 30 VDC (Ethernet)							

Shaft type				
- Solid shaft	ø6 mm, ø10 mm		–	
- Blind hollow shaft	–		ø10…15 mm	

Connection				
- Flange connector M12	Radial	Radial	Radial	Radial
- Flange connector M23	Radial	–	Radial	–
- Cable	Radial (0.14 mm²)	Radial (0.5 mm²)	Radial (0.14 mm²)	Radial (0.5 mm²)
Steps per turn	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits	≤65536/16 bits
Number of turns	≤262144/18 bits	–	≤262144/18 bits	–	≤262144/18 bits	–	≤262144/18 bits	–
Absolute accuracy	Up to ±0.15°			
Operating temperature	-40…+85 °C			
Protection	IP 65, IP 67	IP 67	IP 65, IP 67	IP 67
Operating speed	≤6000 rpm			
Max. shaft load	≤40 N axial, ≤80 N radial			
Options	Additional incremental signals (SSI, CANopen®) Corrosion protection CX (C5-M)	Cable with DEUTSCH connector	Additional incremental signals (SSI, CANopen®) Corrosion protection CX (C5-M)	Cable with DEUTSCH connector

Robust magnetic sensing.
Integrated interface and modular bus covers.
- Solid shaft
- Operating temperature down to -40 °C
- Hermetically sealed, compliance up to IP 69K
- Stainless steel design

Learn more:
www.baumer.com/absolute

MAGRES hermetic

Features	■ Solid shaft with clamping flange ■ Multiturn ■ Hermetically sealed ■ Integrated interfaces	■ Solid shaft with clamping flange ■ Multiturn ■ Hermetically sealed ■ Modular bus cover
Product family	BMMV 58 - hermetic	BMMV 58 - hermetic

Interface		
- SSI	■	–
- CANopen®	■	■
- DeviceNet	–	■ 1)
- Profibus-DP	■	■
- SAE J1939 / Profinet	– / –	■ / ■
- EtherCAT / EtherNet/IP	– / –	■ / ■
- Powerlink	–	■ 1)

Function principle	Multiturn	
Sensing method	Magnetic	
Size (housing)	ø58 mm	
Voltage supply	10...30 VDC	
Shaft type		
- Solid shaft	ø10 mm	
Connection	Flange connector M12	
Steps per turn	≤4096/12 bits ≤8192/13 bits (Profibus)	≤4096/12 bits
Number of turns	≤65536/16 bits (Profibus) ≤262 144/18 bits	≤65536/16 bits ≤262 144/18 bits (CANopen®)
Absolute accuracy	±1°	
Operating temperature	-40...+85 °C	
Protection	IP 68, IP 69 K	
Operating speed	≤6000 rpm	
Max. shaft load	≤120 N axial, ≤280 N radial	

1) on request

Industrial encoders absolute
Size ø58 mm

Precise optical sensing.
- Resolution up to 18 bits per revolution
- High accuracy up to ±0.01°
- Operating temperature up to -40 °C
- LED status indicators

ETHERNET POWERLINK • PROFIBUS®
EtherCAT® • PROFINET®
CANopen • EtherNet/IP™
SAE J1939 • DeviceNet™

Features	■ Solid shaft with clamping or synchro flange		■ Blind hollow or through hollow shaft		■ Solid shaft with clamping or synchro flange		■ Blind hollow or through hollow shaft	
Product family	EAL580-SC	EAL580-SV	EAL580-B	EAL580-T	EAL580-SC	EAL580-SV	EAL580-B	EAL580-T

Interface	Up to 18 bits singleturn resolution				Up to 13 bits singleturn resolution			
- EtherCAT	■	■	■	■	■	■	■	■
- EtherNet/IP	■	■	■	■	■	■	■	■
- Profinet	■	■	■	■	■	■	■	■

Function principle	Multiturn / Singleturn							
Sensing method	Optical							
Size (housing)	ø58 mm							
Voltage supply	10...30 VDC							
Flange	Clamping flange	Synchro flange	Blind hollow shaft	Through hollow shaft	Clamping flange	Synchro flange	Blind hollow shaft	Through hollow shaft
Shaft type								
- Solid shaft	ø10 mm	ø6 mm	–	–	ø10 mm	ø6 mm	–	–
- Blind hollow shaft	–	–	ø10...15 mm	–	–	–	ø10...15 mm	–
- Through hollow shaft	–	–	–	ø10...14 mm	–	–	–	ø10...14 mm
Connection	Flange connector M12, M23, M27, D-SUB or cable (depending on product and variant)							
Steps per turn	≤262 144/18 bits				≤8192/13 bits			
Number of turns	≤8192/13 bits		≤8192/13 bits		≤65536/16 bits		≤65536/16 bits	
Absolute accuracy	±0.01°				±0,025°			
Protection	IP 54, IP 65, IP 67							
Operating temperature	-40...+85 °C (depending on product and variant)							
Operating speed	≤6000 rpm							
Max. shaft load	≤20 N axial, ≤40 N radial				–			
Options	Preset / reset button							

HighRes – up to 18 bits singleturn resolution

Learn more:
www.baumer.com/absolute

Features	■ Solid shaft with clamping flange	■ Solid shaft with synchro flange	■ Blind hollow shaft	■ Through hollow shaft
Interface[1]	Product family - up to 18 bits singleturn resolution			
- SSI / SSI + incremental	GBM2W | GBA2W	GBM2W | GBA2W	GBM2S | GBA2S	GBM2H | GBA2H

Interface	Product family - up to 13 bits singleturn resolution			
- SSI / SSI + incremental	GM400 | GA240	GM401 | GA241	GXM2S | GXA2S	G0M2H | G0A2H
- Parallel	GXP1W | GA240	GXP1W | GA241	– | –	– | –
- CANopen®	GXP5W | GXU5W	GXP5W | GXU5W	GXP5S | –	G0P5H | –
- DeviceNet	GXP8W | –	GXP8W | –	– | –	– | –

Function principle	Multiturn | Singleturn	Multiturn | Singleturn	Multiturn | Singleturn	Multiturn | Singleturn
Sensing method	Optical			
Size (housing)	ø58 mm			
Voltage supply	10...30 VDC			
Shaft type				
- Solid shaft	ø10 mm	ø6 mm	–	–
- Blind hollow shaft	–	–	ø10...15 mm	–
- Through hollow shaft	–	–	–	ø10...14 mm
Connection	Flange connector M12, M23, D-SUB or cable (depending on product and variant)			
Steps per turn	≤262 144/18 bits resp. ≤8192/13 bits			
Number of turns	≤65536/16 bits | –	≤65536/16 bits | –	≤65536/16 bits | –	≤65536/16 bits | –
Absolute accuracy	±0.01° (singleturn 18 bits), ±0.025° (singleturn 13 bits)			
Protection	IP 54, IP 65		IP 54 (IP 65 optional)	IP 54
Operating temperature	-40...+85 °C (depending on product and variant)			
Operating speed	≤6000 rpm			
Max. shaft load	≤20 N axial, ≤40 N radial		–	
Options	Stainless steel / offshore design			

1) BISS C, CANopen®, RS485, Modbus on request

Industrial encoders absolute
Size ø58 mm

Precise optical sensing.
Modular bus cover.
- High resolution up to 18 bits per revolution
- High accuracy ±0.01°
- Operating temperature down to -40 °C
- Additional incremental signals

CANopen
DeviceNet
PROFIBUS®
ETHERNET **POWERLINK**
SAE J1939

HighRes – up to 18 bits singleturn resolution

Features	■ Solid shaft with clamping flange		■ Solid shaft with synchro flange		■ Blind hollow shaft		■ Through hollow shaft	
Product family - up to 18 bits singleturn resolution								
Interface	GBMMW	GBAMW	GBMMW	GBAMW	GBMMS	GBAMS	GBMMH	GBAMH
- CANopen®	■		■		■		■	
- DeviceNet	■		■		■		■	
- Profibus-DP	■		■		■		■	
- SAE J1939	■		■		■		–	
- Powerlink	■		■		■		–	

	Product family - up to 13 bits singleturn resolution							
Interface	GXMMW	GXAMW	GXMMW	GXAMW	GXMMS	GXAMS	G0MMH	G0AMH
- CANopen®	■		■		■		■	
- DeviceNet	■		■		■		■	
- Profibus-DP	■		■		■		■	
- SAE J1939	■		■		■		–	
- Powerlink	■		■		■		–	

Function principle	Multiturn	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn	Multiturn	Singleturn
Sensing method	Optical							
Size (housing)	ø58 mm							
Voltage supply	10...30 VDC							
Shaft type								
- Solid shaft	ø10 mm		ø6 mm		–		–	
- Blind hollow shaft	–		–		ø12...14 mm		–	
- Through hollow shaft	–		–		–		ø12...14 mm	
Connection	Flange connector M12 or cable (depending on product and variant)							
Steps per turn	≤262 144/18 bits resp. ≤8192/13 bits							
Number of turns	≤65536/16 bits	–	≤65536/16 bits	–	≤65536/16 bits	–	≤65536/16 bits	–
Absolute accuracy	±0.01° (singleturn 18 bits), ±0.025° (singleturn 13 bits)							
Protection	IP 54, IP 65						IP 54	
Operating temperature	≤6000 rpm							
Operating speed	-25...+85 °C							
Max. shaft load	≤20 N axial, ≤40 N radial				–		–	
Options	Incremental signals, Stainless steel design, Operating temperature -40...+85 °C, Rotary switch bus address / baud rate						Protection IP 69K Stainless steel design Operating temperature -40 °C	

Precise optical sensing.
SSI / fieldbus interface.
- Shallow installation depth
- Easy installation
- Wide rage of accessories

Learn more:
www.baumer.com/absolute

Features	■ Through hollow shaft up to ø25.4 mm ■ Integrated interface SSI	■ Through hollow shaft up to ø50.8 mm ■ Integrated interface SSI	■ Through hollow shaft up to ø25.4 mm ■ Modular bus cover	■ Through hollow shaft up to ø50.8 mm ■ Modular bus cover
Product family	G1M2H	G2M2H	G1MMH	G2MMH

Interface				
- SSI	■	■	–	–
- CANopen®	–	–	■	■
- DeviceNet	–	–	■	■
- Profibus-DP	–	–	■	■

Function principle	Multiturn			
Sensing method	Optical			
Size (housing)	ø90 mm	ø116 mm	ø90 mm	ø116 mm
Voltage supply	10...30 VDC			
Shaft type				
- Through hollow shaft	ø25.4 mm	ø50.8 mm	ø25.4 mm	ø50.8 mm
Connection				
- Bus cover	–		M12 or cable gland (depending on product and variant)	
- Flange connector M23	Radial		–	
Steps per turn	≤8192/13 bits			
Number of turns	≤4096/12 bits		≤65 536/16 bits	
Absolute accuracy	±0.025°			
Operating temperature	-25...+85 °C			
Protection	IP 54			
Operating speed	≤3800 U/min	≤2000 U/min	≤3800 U/min	≤2000 U/min
Operating temperature	–		Steps per turn Number of turns Rotational direction Preset	
Options	Operating temperature -40...+85 °C Protection IP 65 Additional incremental signals (ATD 4S A4)		Operating temperature -40...+85 °C Protection IP 6	

Eltra Trade s.r.o. supplies full range of _Baumer_ products with the best prices and delivery terms.

We supply:

➤ _Baumer Absolute encoders_

➤ _Baumer Incremental encoders_

➤ _Baumer Tachogenerators and Resolvers_

➤ _Baumer Capacitive Sensors_

➤ _Baumer Inductive Sensors_

➤ _other Baumer products_

To find out stock ability and delivery time to your region, please contact our manager.

✉ info@eltra-trade.com