Absolute Baumer encoders

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

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

- Industrial encoders absolute
  - Size up to ø36 mm
  - Size ø58 mm
  - Large hollow shaft
Industrial encoders absolute

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°

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

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
- Blind hollow shaft
- ø10...15 mm

Connection
- Flange connector M12
- 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

Number of turns
- ≤262144/18 bits
- ≤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

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°

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.

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

Features
- Solid shaft with clamping or synchro flange
- Solid shaft with clamping or synchro flange
- Blind hollow shaft
- Blind hollow shaft
- E1 compliant design
- E1 compliant design
- ISO 13849 compliant firmware
- ISO 13849 compliant firmware
- 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°

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
- Flange connector M23
- Cable
- Steps per turn
- Number of turns
- Absolute accuracy
- Operating temperature
- Protection
- Operating speed
- Max. shaft load
- Options

Options
- Additional incremental signals (SSI, CANopen®)
- Corrosion protection CX (CS-M)
- Cable with DEUTSCH connector
- Additional incremental signals (SSI, CANopen®)
- Corrosion protection CX (CS-M)
- Cable with DEUTSCH connector

www.baumer.com  Industrial encoders absolute
www.eltra-trade.com  info@eltra-trade.com  +421 552 601 099
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

**MAGRES hermetic**

<table>
<thead>
<tr>
<th>Features</th>
<th>BMMV 58 - hermetic</th>
<th>BMMV 58 - hermetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid shaft with clamping flange</td>
<td></td>
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</tr>
<tr>
<td>Multiturn</td>
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<tr>
<td>Hermetically sealed</td>
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<tr>
<td>Integrated interfaces</td>
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<tr>
<td>Solid shaft with clamping flange</td>
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<tr>
<td>Multiturn</td>
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<tr>
<td>Hermetically sealed</td>
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<tr>
<td>Modular bus cover</td>
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</tr>
</tbody>
</table>

**Product family**
- BMMV 58 - hermetic
- BMMV 58 - hermetic

**Interface**
- SSI
- CANopen®
- DeviceNet
- Profibus-DP
- SAE J1939 / Profinet
- EtherCAT / EtherNet/IP
- Powerlink

**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)

**Number of turns**
- ≤65536/16 bits (Profibus)
- ≤262 144/18 bits

**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

Learn more:
www.baumer.com/absolute

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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

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

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
<table>
<thead>
<tr>
<th>Clamping flange</th>
<th>Synchro flange</th>
<th>Blind hollow shaft</th>
<th>Through hollow shaft</th>
<th>Clamping flange</th>
<th>Synchro flange</th>
<th>Blind hollow shaft</th>
<th>Through hollow shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid shaft</td>
<td>Ø10 mm</td>
<td>Ø6 mm</td>
<td>–</td>
<td>–</td>
<td>Ø10 mm</td>
<td>Ø6 mm</td>
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<tr>
<td>Blind hollow shaft</td>
<td>–</td>
<td>–</td>
<td>Ø10...15 mm</td>
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<td>Ø10...15 mm</td>
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<tr>
<td>Through hollow shaft</td>
<td>–</td>
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<td>–</td>
<td>Ø10...14 mm</td>
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</tr>
</tbody>
</table>

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
≤65,536/16 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
### Industrial encoders absolute

**Size Ø58 mm**

**HighRes – up to 18 bits singleturn resolution**

Learn more: [www.baumer.com/absolute](http://www.baumer.com/absolute)

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#### Features

- Solid shaft with clamping flange
- Solid shaft with synchro flange
- Blind hollow shaft
- Through hollow shaft

#### Interface

<table>
<thead>
<tr>
<th>Interface</th>
<th>Product family - up to 18 bits singleturn resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>- SSI / SSI + incremental</td>
<td>GM2W</td>
</tr>
<tr>
<td>- Parallel</td>
<td>GXP1W</td>
</tr>
<tr>
<td>- CANopen®</td>
<td>GXP5W</td>
</tr>
<tr>
<td>- DeviceNet</td>
<td>GXP8W</td>
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</table>

#### Function principle

<table>
<thead>
<tr>
<th>Multiturn</th>
<th>Singleturn</th>
<th>Multiturn</th>
<th>Singleturn</th>
<th>Multiturn</th>
<th>Singleturn</th>
<th>Multiturn</th>
<th>Singleturn</th>
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</thead>
<tbody>
<tr>
<td>Optical</td>
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</tr>
</tbody>
</table>

#### Sensing method

- Optical

#### Size (housing)

- Ø58 mm

#### Voltage supply

- 10...30 VDC

#### Shaft type

- Solid shaft Ø10 mm Ø6 mm
- Blind hollow shaft
- Through hollow shaft

#### 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

<table>
<thead>
<tr>
<th>≤65536/16 bits</th>
<th>≤65536/16 bits</th>
<th>≤65536/16 bits</th>
<th>≤65536/16 bits</th>
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<tbody>
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</tbody>
</table>

#### 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

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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

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

<table>
<thead>
<tr>
<th>Interface</th>
<th>GBMMW</th>
<th>GBAMW</th>
<th>GBMMW</th>
<th>GBAMW</th>
<th>GBMMS</th>
<th>GBAMS</th>
<th>GBMMH</th>
<th>GBAMH</th>
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<tbody>
<tr>
<td>CANopen®</td>
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<tr>
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<tr>
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<td>✓</td>
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<tr>
<td>SAE J1939</td>
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<tr>
<td>Powerlink</td>
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</tbody>
</table>

Product family - up to 13 bits singleturn resolution

<table>
<thead>
<tr>
<th>Interface</th>
<th>GXMMW</th>
<th>GXAMW</th>
<th>GXMMW</th>
<th>GXAMW</th>
<th>GXMMS</th>
<th>GXAMS</th>
<th>G0MMH</th>
<th>G0AMH</th>
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<tbody>
<tr>
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<tr>
<td>DeviceNet</td>
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<tr>
<td>Profibus-DP</td>
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<tr>
<td>SAE J1939</td>
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</tbody>
</table>

Function principle

- 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
- Through hollow shaft

Connection

Flange connector M12 or cable (depending on product and variant)

Steps per turn

≤262144/18 bits resp. ≤8192/13 bits

Number of turns

≤65536/16 bits

Absolute accuracy

±0.01° (singleturn 18 bits), ±0.025° (singleturn 13 bits)

Protection

IP 54, IP 65

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
# Industrial encoders absolute

## Large hollow shaft

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

## Features

<table>
<thead>
<tr>
<th>Features</th>
<th>Through hollow shaft up to ø25.4 mm</th>
<th>Through hollow shaft up to ø50.8 mm</th>
<th>Through hollow shaft up to ø25.4 mm</th>
<th>Through hollow shaft up to ø50.8 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Integrated interface SSI</td>
<td>Integrated interface SSI</td>
<td>Modular bus cover</td>
<td>Modular bus cover</td>
</tr>
</tbody>
</table>

## Product family

- G1M2H
- G2M2H
- G1MMH
- G2MMH

## Interface

<table>
<thead>
<tr>
<th>- SSI</th>
<th>- CANopen®</th>
<th>- DeviceNet</th>
<th>- Profibus-DP</th>
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</thead>
<tbody>
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</tr>
</tbody>
</table>

## Function principle

- Multiturn

## Sensing method

- Optical

## Size (housing)

<table>
<thead>
<tr>
<th>ø90 mm</th>
<th>ø116 mm</th>
<th>ø90 mm</th>
<th>ø116 mm</th>
</tr>
</thead>
</table>

## Voltage supply

- 10...30 VDC

## Shaft type

- Through hollow shaft
  - 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
- ≤4096/12 bits

## Number of turns

- ≤65536/16 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)

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Learn more: [www.baumer.com/absolute](http://www.baumer.com/absolute)

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- **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.

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