



Precision for your Design

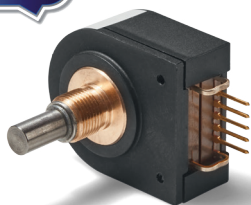


# PANEL ENCODERS

Optical and magnetic Encoders, potentiometric  
Setpoint Adjusters and Adjustment Knobs

# Optical Encoders with increased Torque

**NEW!**



## Optical encoder with increased torque, high resolution and life span

Durable panel encoder SPM in IP55 with up to 1024 ppr. and 18.7 mm housing depth

SPM encoders are equipped with contact pins in 2.54 mm pitch (for soldering or Molex plug, optional with lock mechanism) and with centring collar for the exact positioning in operating panels.

- 2 channels + index
- TTL or line driver output
- Sleeve bearing with shaft sealing
- Live span >100 mio. rev.
- Connection type: Pins or Molex plug, optional with lock mechanism
- Housing dimensions 30 x 35 mm
- Made in Germany
- Output: Incremental
- Up to 1024 pulses / 360°
- Protection: Up to IP55M/IP66S
- Ø shaft: 6.00 mm
- Housing depth: 18.7 mm
- 5 V supply voltage

## Compact optical encoder with increased torque

Space-saving panel encoder SPE in Ø22 mm housing with up to 360 ppr. and 11.73 mm housing depth

The sleeve bearing with special grease imparts increased torque to the SPE encoder. TTL interface or line driver is available for longer transmission distances. In addition, the integrated Molex plug enables convenient mounting.

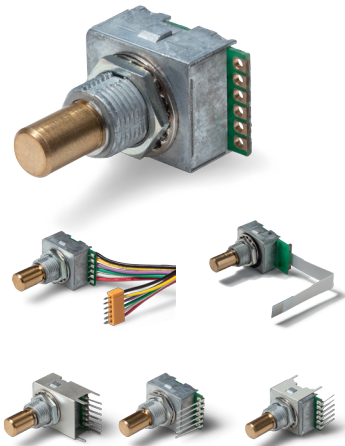


- 2 channels
- TTL or line driver output
- Sleeve bearing
- Connection type: Molex plug
- Output: Incremental
- Up to 360 pulses / 360°
- Protection: IP40
- Ø shaft: 3.17.6.35 mm
- Housing depth: 11.73 mm
- 5 V supply voltage

# Optical Encoders with Detent and Push Button

## Compact optical encoder with many connection options

Panel encoder MRS up to IP65 in diverse detents, torques and connection variants with only 8.5 mm housing depth

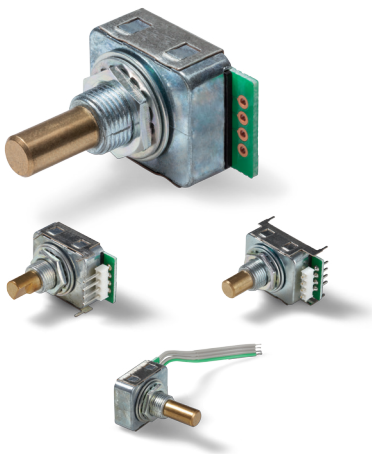


MRS encoders are equipped with an integrated (or optionally without) push button. There are 3 different audible and tactile detents available. Furthermore you can choose between two different torque styles. The small panel encoder (15 x 19 mm) surprises besides its quality and variety with its very powerful price structure. The fine-tuned components guarantee pleasant feel and long life span, even with increased environmental requirements.

- With or without push button
- With 16, 24, 32 detents (even without)
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- 2 actuating torques
- 6 electrical connection options
- Output: Incremental
- 4, 6 or 8 pulses 360°
- Protection: Up to IP65
- Ø shaft: 6.00, 6.35 mm
- Housing depth: Only 8.5 mm
- 3.3 V, 5 V supply voltage

## Optical encoder with diverse torques and push button operating forces

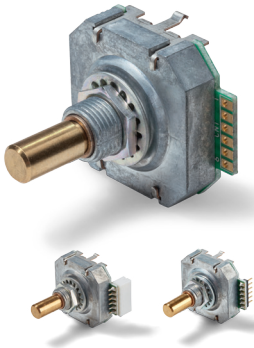
Manual encoder MRB with 2 detents, 4 torques and 3 push button operating forces



MRB encoders are equipped with an integrated (or optionally without) push button. There are 2 different audible and tactile detents available. The diverse selection of torque and push button styles characterizes this panel encoder. In addition, the powerful price structure of this encoder enables numerous applications.

- With or without push button
- With 16, 25 detents (or without)
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- 4 actuating torques
- 3 push button operating forces
- 4 electrical connection options
- Output: Incremental
- 16, 25 pulses 360°
- Protection: Up to IP55
- Ø shaft: 6.00 mm
- Housing depth: 8.9 mm
- 3.3 V, 5 V supply voltage

# Optical Encoders with Detent and Push Button

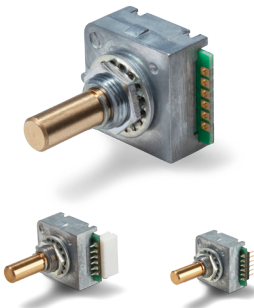


## Optimally adaptable optical encoder with high number of pulses and detents in compact housing

Panel encoder MRX50 up to IP65 with 50 detents / pulses

MRX50 is a unique panel encoder with very sensitive handling. Besides very high resolution, push button and detent in compact housing, this panel encoder can be adapted to almost any application: e.g. with other torque, connections or special shaft geometry.

- With or without push button
- With 50 detents
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- 2 actuating torques
- 3 electrical connection options
- Output: Incremental
- 50 pulses 360°
- Protection: Up to IP65
- Ø shaft: 6.00 mm
- Housing depth: 10 mm
- 3.3 V, 5 V supply voltage

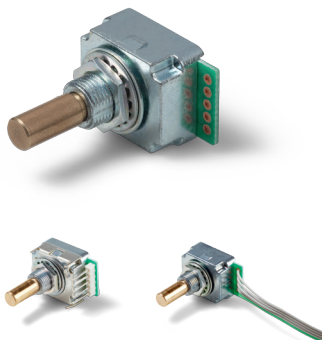


## Optical encoder with detent, push button and many connection options

Panel encoder MRX25 in IP65 with 25 detents and push button in compact housing

The panel encoder grants sensitive handling due to its pleasant detent with 25 audible and tactile clicks. In addition, the compact housing and the great number of different electrical connections enables numerous applications.

- With or without push button
- With 25 detents
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- 2 actuating torques
- 4 electrical connection options
- Output: Incremental
- 25 pulses 360°
- Protection: Up to IP65
- Ø shaft: 6.00 mm
- Housing depth: max. 10 mm
- 3.3 V, 5 V supply voltage



## Optical encoder with long push button travel and low power consumption

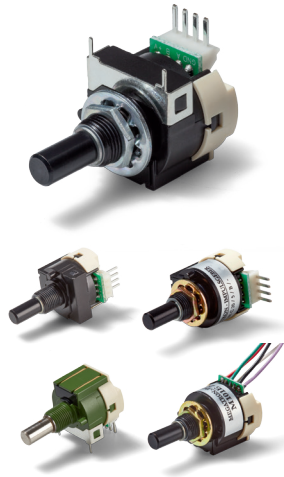
Panel encoder MRT in IP55 with push button, 25 detents and many connection options

The encoder enables sensitive handling due to its pleasant detent with 25 audible and tactile clicks. Its special features are the relatively long push button travel of 1.2 mm and only <10 mA current consumption.

- With or without push button
- With 25 detents (optional without)
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- 3 electrical connection options
- Output: Incremental
- 25 pulses 360°
- Protection: Up to IP55
- Ø shaft: 6.00 mm
- Housing depth: 11 mm
- 5 V supply voltage

## Optical encoder with or without detent / push button and many connection options

Panel encoder M101 with 20 ppr., push button and detent with powerful price structure



The encoder enables a wide range of applications, due to its compact dimensions, high-quality actuation haptics and different electrical connections.

- With or without push button
- Without or with 20 detents
- 2 channels
- TTL output
- Life span >2.5 mio. rev.
- 4 electrical connection options
- Output: Incremental
- Up to 128 pulses 360°
- Protection: IP40
- Ø shaft: 6.00 mm
- Housing depth: 20 mm
- 5 V supply voltage

## Handwheels with Detent

### High-quality and compact handwheel in IP64

Handwheel in Ø60 mm housing with very low installation depth and up to 100 pulses / clicks - compatible with MELDAS and FANUC specifications



The handwheels of the MHU series have a resolution of 100 (optionally 25) ppr. and enable very secure tactile handling due to the sensitive detent mechanism with 100 audible and tactile clicks. 4 different electrical output circuits grant the compatibility to many applications.

- With 100 detents
- 2 channels
- Line driver, voltage output
- Life span >1 mio. rev.
- Ø knob 46 mm
- In silver or black
- Output: Incremental
- 100 (optional 25) pulses 360°
- Protection: IP64
- Installation depth: 10 mm
- 5 V, 12 V, 4.5..13.2 V supply voltage

### Very high-quality and big handwheel

Premium Handwheel MHO with 100 pulses / clicks in massive construction



The MHO has a very high-quality appearance because of its massive knob (in Ø80 mm housing) with metal ring and metal crank. The handwheel can be operated very sensitively and precisely. At high operating speeds the knob supports trailing property and allows fast entry of large numerical setpoints.

- With 100 detents
- 2 channels
- Voltage output
- Life span >1 mio. rev.
- Ø knob 58 mm
- Output: Incremental
- 100 (optional 25) pulses 360°
- Protection: IP52
- Installation depth: 27 mm
- 5 V, 4.5..13.2 V supply voltage

# Potentiometers with mech. End Stop

MP21



Related series  
MP23 in metal  
housing and axial  
connections

## Ideally customizable setpoint adjuster

MP21 conductive plastic potentiometer in Ø22 mm housing with mech. stop, radial connections and many options

The MP21 series is used as set point adjuster with mechanical end stop. The potentiometer is the ideal product in many applications because of its adaptability and many options.

- Options: Tandem / multiple arrangement of up to 10 potentiometers, rear shaft, front shaft sealing (IP65), center tap, numerous shaft modifications
- Life span >10 million revolutions due to high-quality Comolded conductive plastic technology
- Measuring range: 320° with stop
- Output: Analog (ratiometric)
- Protection: Up to IP65
- Ø shaft: 6.00, 6.35 mm
- Ø housing: 22 mm
- Housing depth: 12 mm
- Connection type: Soldering lugs

## Miniature setpoint adjuster

MP11 conductive plastic potentiometer in Ø13 mm housing with mech. stop

The precision potentiometers MP11 with mechanical end stop in Ø13 mm miniature housing are ideally suited for applications with limited space.

- Options: Rear shaft, front shaft sealing (IP65), center tap
- Life span >5 million revolutions due to high-quality Comolded conductive plastic technology
- Metal housing
- Measuring range: 300° with stop
- Output: Analog (ratiometric)
- Protection: Up to IP65
- Ø shaft: 3.00, 3.175 mm
- Ø housing: 13 mm
- Housing depth: 10 mm
- Connection type: Soldering pins

RP19



Related series  
RP23 in metal  
housing and axial  
connections

## Setpoint adjuster with many options

RP19 wirewound potentiometer in Ø22 mm housing with mech. stop and radial connections

The potentiometer series RP19 with mechanical end stop is an all-rounder that can be adapted to a wide variety of applications.

- Compact sensor with low installation depth
- Options e.g. tandem or multi ganged, rear shaft, center tap and much more
- On request with significant torque  $4 \pm 1$  Ncm
- Measuring range: 320° with stop
- Output: Analog (ratiometric)
- Protection: Up to IP65
- Ø shaft: 6.00, 6.35 mm
- Ø Housing: 22 mm
- Housing depth: 12 mm
- Connection type: Soldering lugs



## Economical and ideally customizable multiturn setpoint adjuster with many options

AL17/19 multiturn wirewound potentiometer in Ø22 mm housing

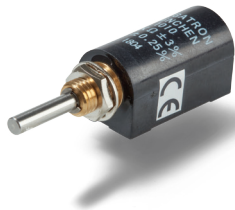
The AL17/19 series is used as a low-cost, precise multiturn setpoint adjuster.

- Rotation angle 1,2,3,4,5,6,7, 10-turn
- Options e. g. tandem or multi ganged version, shaft seal (IP65), slipping clutch, reinforced bearing, rear shaft, integrated plug, center tap and much more
- On request with significant torque
- Measuring range: 360°..3600°
- Output: Analog (ratiometric)
- Protection: Up to IP65
- Ø shaft: 6.00, 6.35 mm
- Ø housing: 22 mm
- Housing depth: 19 mm
- Connection type: Plug, soldering lugs

## Economical miniature multiturn setpoint adjuster

AL9 multiturn wirewound potentiometer in Ø13 mm housing

The AL9 series is used as a low-cost and precise setpoint adjuster. It is ideal for applications with limited space.



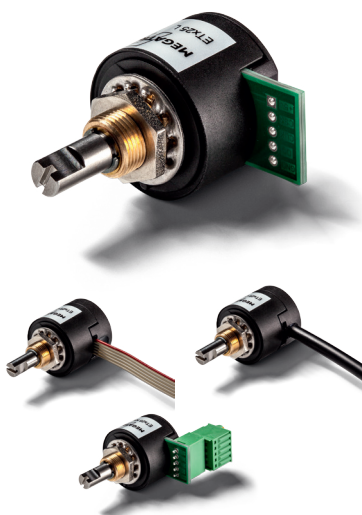
- Rotation angle 3, 5, 10-turn
- Options: Front shaft sealing (IP65), soldering lugs or pins
- Measuring range: 360°..3600°
- Output: Analog (ratiometric)
- Protection: Up to IP65
- Ø shaft: 3.175 mm
- Ø housing: 13 mm
- Housing depth: 25.5 mm
- Connection type: Soldering lugs, soldering pins

# Magnetic Encoder

## Ultra durable manual adjuster with analog signal, mech. stop and increased torque

Hall effect absolute encoder ETAM25 in Ø25 mm housing

The ETAM is the right one, if a robust and durable manual adjuster with very long life span is required. The contactless measuring principle and the sleeve bearing ensure >100 million shaft revolutions.



- With mech. stop 320°, 270°, 180°, 90°
- Optional center detent
- Life span >100 mio. rev.
- Voltage output 0..5 V, 0..10 V
- Connection type: Solder pads, plug, ribbon cable, round cable
- Output: Analog
- Protection: Up to IP66
- Ø shaft: 6.00 mm
- Ø housing: 25 mm
- Housing depth: 18.8 mm

# Potentiometers with adjustment Knob



## High-resolution manual adjuster with 3 digits indication in optional IP65 version

Completely pre-assembled set MD22 - ready to install for the front panel

These manual adjusters are delivered ready to install. They consist of a multiturn potentiometer series AL17 and the adjustment knob with optional IP65 design. The potentiometer is available in 3, 5 or 10-turn version.

- 000...999 digits indication
- Soldering lugs or clamp connection
- With many options
- Measuring range: 360°..3600°
- Output: Analog (ratiometric)



## High-resolution manual adjuster with 3 digits indication and locking mechanism

Completely pre-assembled set MD32 - ready to install for the front panel

These manual adjusters are delivered ready to install. They consist of a multiturn potentiometer series AL17 and the adjustment knob with locking mechanism. The potentiometer is available in 3, 5 or 10-turn version.

- 000...999 digits indication
- Knob with locking mechanism
- Soldering lugs or clamp connection
- With many options
- Measuring range: 360°..3600°
- Output: Analog (ratiometric)



## High-resolution manual adjuster with 3 digits indication and locking mechanism

Completely pre-assembled set MCD17 - ready to install for the front panel

These manual adjusters are delivered ready to install. They consist of a multiturn potentiometer series AL17 and the adjustment knob with locking mechanism. The potentiometer is available in 3, 5 or 10-turn version.

- 000...999 digits indication
- Knob with locking mechanism
- Soldering lugs or clamp connection
- With many options
- Measuring range: 360°..3600°
- Output: Analog (ratiometric)



## Adjustment Knobs with Digits



### Adjustment knob DAT in Ø24 mm housing with 3 digits indication (to 10 rev.) and locking mechanism

For 6.00, 6.35 mm shafts  
Housing depth 36 mm



### Adjustment knob MCD in Ø30,5 mm housing with 3 digits indication (to 10 rev.) and locking mechanism

For 3.00 to 6.35 mm shafts  
Housing depth 31.5 mm (with knob)



### Adjustment knob MCF in Ø27 mm housing with 3 digits indication (to 10 rev.) and locking mechanism

For 3.00 to 6.55 mm shafts  
Housing depth 31.5 mm (with knob)



### Adjustment knob DCD with 3 to 4 digits indication for 10 to 100 revolutions and locking mechanism

For 3.00 to 6.35 mm shafts  
Housing 26 x 44 mm

DCD  
with 4 digits

# Adjustment Knobs with cardan coupling



**Miniature adjustment knob MF with 50th graduation, revolution counter (to 10 rev.), locking mechanism and cardan coupling**

For 3.00, 4.00 mm shafts  
Housing 18.5 x 15 mm



**Adjustment knob NKK in Ø46 mm housing with 100th graduation, revolution counter (3 to 20 rev.), locking mechanism and cardan coupling**

For 6.00, 6.35 mm shafts  
Housing depth 25 mm (with knob)



**Adjustment knob SKK in Ø22 mm housing with 50th graduation, revolution counter (to 20 rev.), locking mechanism and cardan coupling**

For 3.00 to 6.35 mm shafts  
Housing depth 25 mm (with knob)

# Adjustment Knobs

IMT



**Adjustment knob IMT in Ø22 mm housing with 50th graduation, revolution counter (to 20 rev.) and locking mechanism**

For 3.00 to 6.35 mm shafts  
Housing depth 25 mm (with knob)

Related series IMU  
with 100th graduation



**Adjustment knob MKT in Ø31 mm housing with 100th graduation, revolution counter (3 to 10 rev.) and locking mechanism**

For 3.00 to 6.35 mm shafts  
Housing depth 27 mm (with knob)



**Adjustment knob SKT in Ø26 mm housing with 50th graduation, revolution counter (to 10 rev.) and locking mechanism**

For 3.00 to 6.35 mm shafts  
Housing depth 27 mm (with knob)

MEGATRON Elektronik GmbH & Co. KG is a leading German supplier of precision sensors, industrial joysticks, small plastic parts and electronic housings. Founded in 1960, MEGATRON is an owner-run company based in Putzbrunn near Munich, Germany. It develops, produces and markets its own products as well as those of its longstanding international partners all over the world. MEGATRON works closely with OEM customers to develop individual and economical product solutions. A wide selection of immediately available stock items completes the portfolio.

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