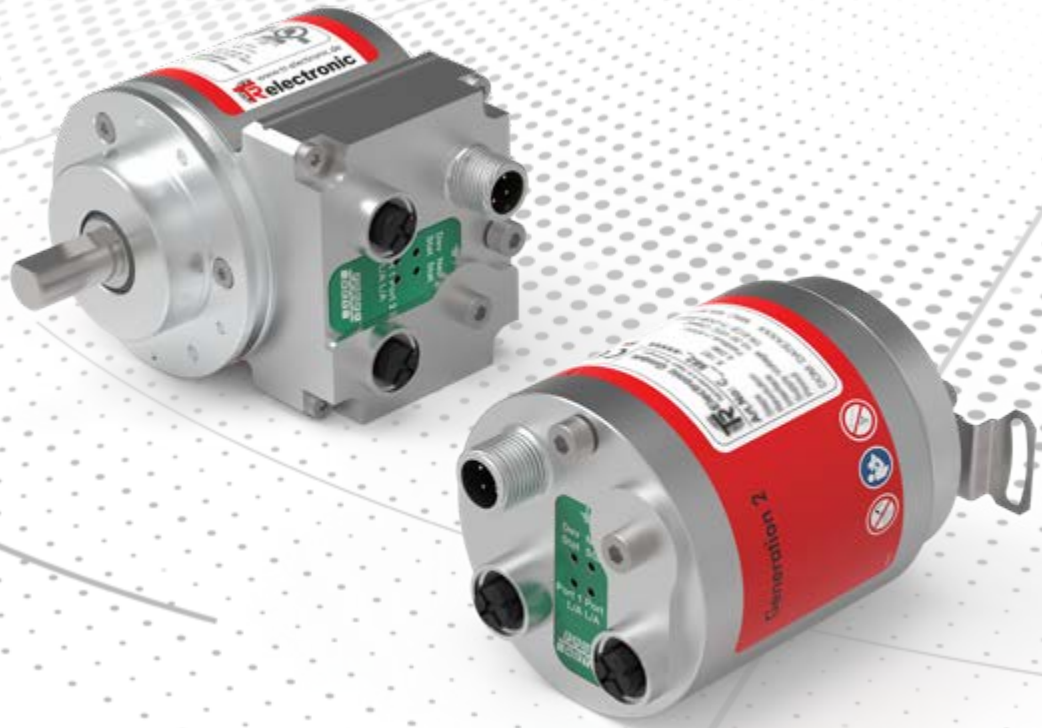
Absolute encoder 58 mm

C__582



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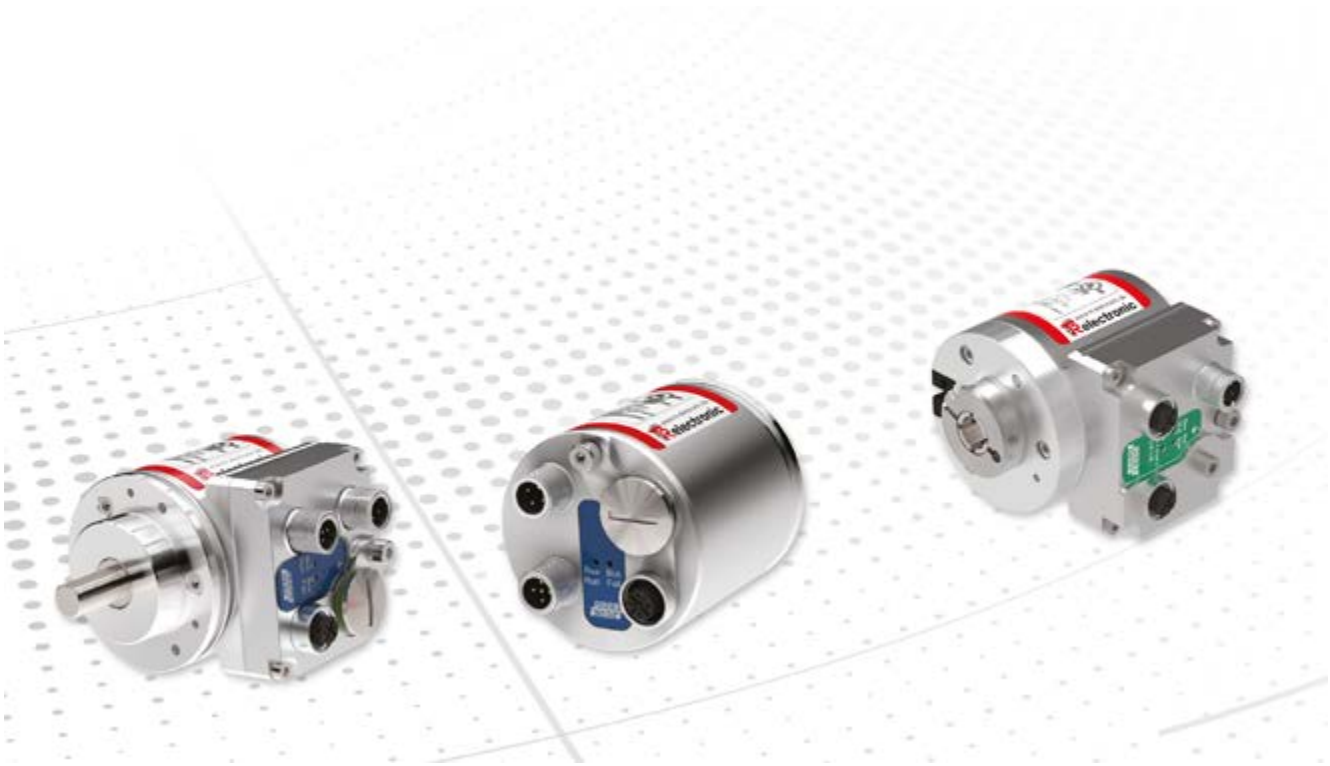
Absolute Rotary Encoders – Family C__582 - Housing 58 mm



58 mm housing for standard industrial applications

Encoders with size 58 mm have been established as the industrial standard for absolute and incremental encoders. With TR-Electronic, you get as a standard what is special with other manufacturers. Absolute encoders of Series 58 are modular. Your demands can be realized precisely and in most cases without any special development.

_Industrial standard size 58 mm
_Cost optimized by different resolution ranges
_Compatible with a vast number of control systems
_Shaft-, flange - and assembly versions
_Same mechanics - plenty of interfaces
_Compact Connector System - perfect for machines produced in series
_Can be adaptedto singular applications via parametrization done by user
_Available with customer-specific connector systems
_UL approval
_salt water-resistant

Magnet detection (M)

Product	CMV582*	CMS582
		
Shaft types	Solid shaft	Blind shaft
Scanning	Magnet detection 13 bit	Magnet detection 13 bit
Supply	10…30 V dc	10…30 V dc
Number of steps / revolution*	8.192	8.192
Steps per turn	256,000	256,000
Precision	± 0,5°	± 0,5°
Shaft diameters available	6, 8, 10, 12, 14, 1/4", 3/8", 1/2"	8, 10, 12, 14, 15, 1/4", 3/8", 1/2"
Connectors*	Connector axial or radial	Connector axial or radial
Ambient temperature	-20...+75°C, option -40...+85°C	-20...+75°C, option -40...+85°C
Protection class	IP65, option IP67	IP65, option IP67
ATEX-zone	option 2/22	option 2/22
Interface*	SSI, ASI, Analog, Parallel, DRIVE-CLiQ, PROFIBUS, CANopen, INTERBUS, PROFINET, EtherCAT, EtherCAT P, EtherNet/IP, ETHERNET POWERLINK, IO-Link	SSI, ASI, Analog, Parallel, DRIVE-CLiQ, PROFIBUS, CANopen, INTERBUS, PROFINET, EtherCAT, EtherCAT P, EtherNet/IP, ETHERNET POWERLINK, IO-Link
Option, additional interfaces (on request)	SSI	SSI
Weblink	www.tr-electronic.com/s/S013306	www.tr-electronic.com/s/S013307
QR-Code		

*Please enquire about availability for specific combinations

Can't find the right variant? Please contact us (info@tr-electronic.de)

Optical 15 bit (E)

Product	CEV582	CEH582	CES582	
				
Shaft types	Solid shaft	Hollow shaft	Blind shaft	
Scanning	Optical 15 bit	Optical 15 bit	Optical 15 bit	
Supply	10…30 V dc	10…30 V dc	10…30 V dc	
Number of steps / revolution*	32,768	32,768	32,768	
Steps per turn	256,000	256,000	256,000	
Precision	± 0,02°	± 0,02°	± 0,02°	
Shaft diameters available	6, 8, 10, 12, 14, 1/4", 3/8", 1/2"	8, 10, 12, 14, 15, 1/4", 3/8", 1/2"	8, 10, 12, 14, 15, 1/4", 3/8", 1/2"	
Connectors*	Connector axial or radial	radial	Connector axial or radial	
Ambient temperature	-20...+75°C, option -40...+85°C	-20...+75°C, option -40...+85°C	-20...+75°C, option -40...+85°C	
Protection class	IP65, option IP67	IP54	IP65, option IP67	
ATEX-zone	option 2/22	option 2/22	option 2/22	
Interface*	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link	
option, additional interfaces* (on request)	**SSI** **INC**	**SSI** **INC**	**SSI** **INC**	
Weblink	www.tr-electronic.com/s/S013308	www.tr-electronic.com/s/S013312	www.tr-electronic.com/s/S013313	
QR-Code				

*Please enquire about availability for specific combinations

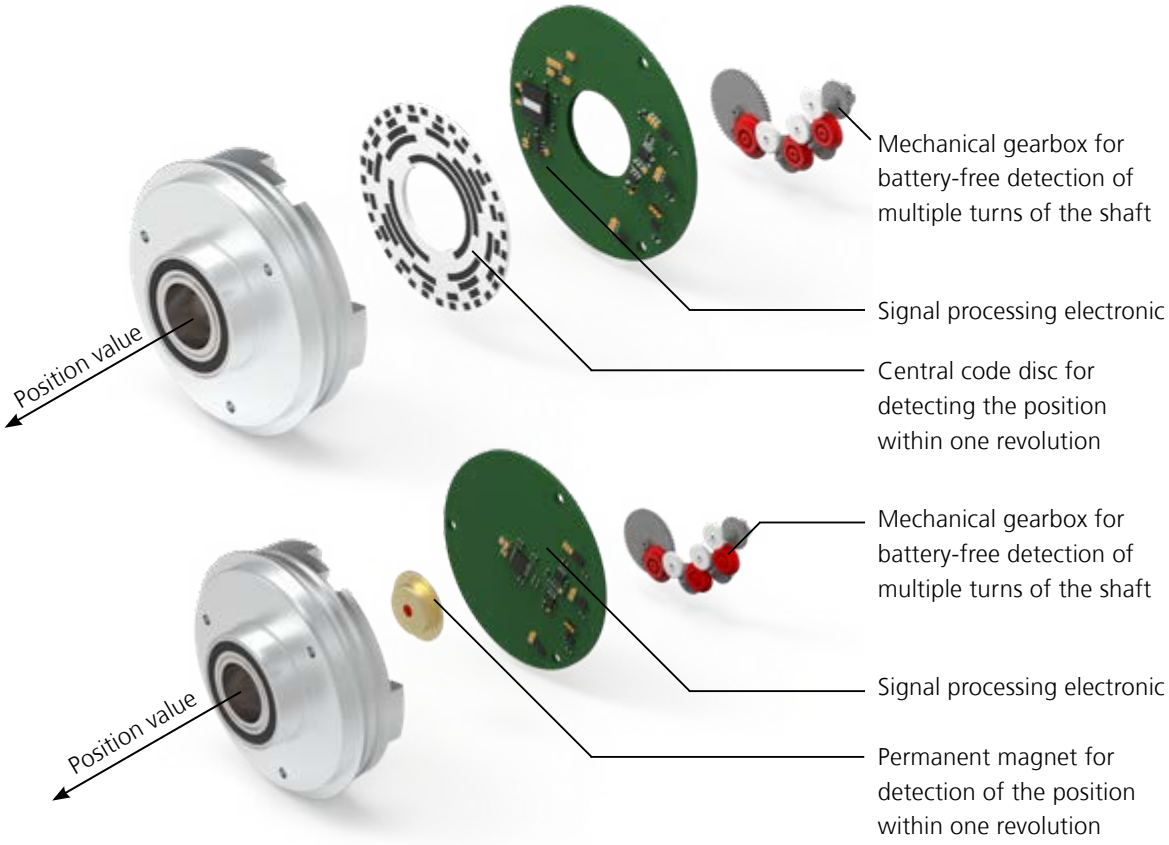
Optical 18 bit (O)

	COV582	COH582	COS582
			
	Solid shaft	Hollow shaft	Blind shaft
	Optical 18 bit	Optical 18 bit	Optical 18 bit
	10…30 V dc	10…30 V dc	10…30 V dc
	262,144	262,144	262,144
	256,000	256,000	256,000
	± 0,01°	± 0,01°	± 0,01°
	6, 8, 10, 12, 14, 1/4" ", 3/8", 1/2"	8, 10, 12, 14, 15, 1/4", 3/8", 1/2"	8, 10, 12, 14, 15, 1/4", 3/8", 1/2"
	Connector axial or radial	radial	Connector axial or radial
	-20...+75°C, option -40...+85°C	-20...+75°C, option -40...+85°C	-20...+75°C, option -40...+85°C
	IP65, option IP67	IP54	IP65, option IP67
	option 2/22	option 2/22	option 2/22
	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link	SSI, INTERBUS, ASI, PROFINET, Analog, EtherCAT, Parallel, EtherCAT P, DRIVE-CLiQ, EtherNet/IP, PROFIBUS, ETHERNET POWERLINK, CANopen, IO-Link
	SSI INC	**SSI INC**	**SSI INC**
	www.tr-electronic.com/s/S013314	www.tr-electronic.com/s/S013315	www.tr-electronic.com/s/S013316

*Please enquire about availability for specific combinations

Can't find the right variant? Please contact us (info@tr-electronic.de)

Optical – magnetic detection



Shaft type

Solid shaft

Blind shaft

Hollow shaft

Connectors

connector radial

connector axial

Designation key

C			582			
	M				magnet detection up to 13 bit	Up to 13 bit within the revolution. Inexpensive and robust!
	E				optical up to 15 bit	Up to 15 bit within the revolution. For fast and synchronous acquisition of position values.
	O				optical up to 18 bit	Up to 18 bit within the revolution. For fast and synchronous acquisition of position values with high linearity.
		V			solid shaft	The shaft of the system / machine is usually connected to the shaft with a coupling connected to the encoder. The permissible bearing forces must be used for the connection of the encoder must be taken into account.
		S			blind shaft	The shaft of the system/machine penetrates the encoder. The dead weight of the rotary encoder is usually carried by the shaft, the rotary encoder is fitted with a torque support or groove / pin connection secured against rotation.
		H			hollow shaft	The shaft of the system/machine completely penetrates the encoder. The encoder's dead weight is usually borne by the shaft. The encoder is secured against rotation with a torque arm or groove/pin connection.
		K			couplings	Positive transmission of rotary movements to the encoder. Combines the precision of the solid shaft with the installation space of a blind shaft. Can be implemented with a minimum of components with appropriate machining of the application-side shaft.
		W			wire	With the cable pull principle, a linear movement is converted into a rotary movement. The measuring cable is pulled off a drum by the application mechanism and pulled back by a spring assembly. The winding drum is axially coupled to a rotary encoder.
				S	singleturn	The detection measures absolutely within one revolution. The determined measured value is repeated in each revolution of the encoder.
				M	multiturn	The detection of the encoder measures the position of the encoder both within the revolution and over several revolutions. The measured value is unique (within the frame-work of the number of revolutions specified for the respective scanning). Independently of this, the measured value output can be scaled electronically ("gear function").
					radial connection	The connector sits at the side of the encoder (90° angle to the shaft orientation).
					axial connection	The connector sits on the opposite side of the encoder relative to the shaft. Available only with blind- and solid shaft.

Features – interface C__582

Features	Output position / speed	
	Device Level Ring (DLR)	
	Distributed Clocks	
	Encoderprofile	
	Fast Start-Up (FSU)	
	Free digital input/output	
	Free process data mapping	
	Industry 4.0 + IIoT-Pionier	
	Intelligent diagnostics	
	Cable via screw terminals/can be connected by customers themselves	
	Cable outlet	
	M12 plug technology	
	Media Redundancy Protocol, MRP	
	Parameterizable gearbox	
	Preset "on the fly"	
	Remote Teach-in	
	Reset-button	
	Current or voltage output (switchable)	
	Synchronous to application	
	Teach-in	
	Universal Motion Control Interface	
Additional interfaces	Magnet detection (M)	Option: +SSI
	Optical detection (E)	Option: +INK
		Option: +SSI or +INK
	High-resolution optical scanning (O)	Option: +INK
		Option: +SSI or +INK

	interface													
	Analog	***ASI***	CANopen	DRIVE-CLiQ	EtherNet/IP	EtherCAT	InterBus	IO-Link	***Parallel***	ETHERNET POWERLINK	PROFIBUS M12	PROFIBUS Cable gland	PROFINET	***SSI***
	x	x	x		x	x		x		x	x	x	x	x
					x									
						x								
			x		x	x					x	x	x	
													x	
								x	x					x
			x			x				x			x	
								x						
								x						
												x		
									x					x
	x	x	x	x	x	x		x		x	x		x	x
													x	
	x	x	x		x	x	x	x	x	x	x	x	x	x
					x	x		x		x	x	x	x	
	x													
													x	
	x													
										x				
	x													
				x										
	x	x	x		x	x	x	x	x	x	x	x	x	
														x
	x	x	x		x	x	x	x	x	x	x	x	x	
														x
	x	x	x		x	x	x	x	x	x	x	x	x	

Glossary – Family C__582

Features

_Output position / speed

Absolute rotary encoders can transmit both position and speed values. Depending on the interface, the output must be configured accordingly.

_Device Level Ring, DLR

A ring makes the network safe. Similar to MRP with PROFINET, DLR provides higher availability to machines and plants with Ethernet/IP. With one additional connection from the last encoder in a branch back to the switch, connection is closed to a ring with much higher reliability. Break in signal transmission is detected at once and bypassed. A single cable break this does not lead to failure of all nodes behind the break in a branch.

_Distributed Clocks

For precise position and path control of moving axes, all sensors and actors involved must be synchonized. With EtherCAT, this is achieved by distributed clocks. The smallest possible cycle time in C__582 is 100 µs.

_Encoderprofile

Communication between controller and complex participants such as rotary encoders is supported by so-called profiles in fieldbus and Industrial Ethernet systems. Conventions for the transmission of the measured values as well as for the parameterization of the rotary encoder are defined by the controller. These profiles are maintained and standardized by the user- and standardization organisations.
Examples are:
PROFIBUS, PROFINET: PNO Encoder-Profile, KL 1/2, KL3/4 (“Profibus-Nutzer-Organisation“ PNO)
EtherCAT, CANopen: CiA DS 406 (Can in Automation CiA)
Ethernet/IP: CIP Position Sensor (0x23) (ODVA)

_Fast Start-Up, FSU

C__582 PROFINET starts faster than any other bus rotary encoder. Once configured a stable, valid absolute position value is available in the PROFINET control just a few instants after restoration of supply. System startup is greatly accelerated and modular machine concepts in particular (with periodically decoupled modules) benefit directly from this technology.*

*C__582 EPN can either be configured for Fast Startup or for MRP.

_Free digital input/output

Depending on the interface, different options are available concerning digital inputs and outputs.

_Free process data mapping

For EtherCAT, the transmitted telegram can be freely designed to meet the programmers needs.
Choose free from current reading position, speed, warnings, alarms, software-cams … what is needed for your process / your control architecture.

_Industry 4.0 + IIoT-Pionier

The new C__582 generation of industrial standard rotary encoders is rigorously equipped with state-of-the-art chip families.

_Intelligent diagnostics

How's about my machine? To know that at any time is one of the core aspects of industry 4.0.
Be it capacity utilisation or upcoming services: C__582 provides all necessary alarms and diagnostic messages for long term machine and plant surveillance.

_Cable via screw terminals / can be connected by customers themselves

Devices with a Profibus interface are also available with a fieldbus-hood. The bus line is attached to screw terminals by the customer directly on site.

_Connectors

Pigtail

_M12 plug-in technology

Standard connector with M12 thread.

_Media Redundancy Protocol, MRP

One ring for reliability. The PROFINET interface of the C__582 supports the innovative Media Redundancy Protocol MRP. Normally PROFINET only supports a linear/tree structure. A redundant connection is not primarily provided as standard. MRP significantly increases availability with one simple device! Branches are connected to a ring with an additional line from the last node to the next switch. The appropriately configured nodes detect this.
One of the nodes now disconnects this ring, by "ignoring" the second connection. If a connection fails (due to cable breakage or failure of a node), the nodes detect this and attempt to find another way to the rest of the system. The previously opened connection is now closed and all nodes are reconnected to the network.*

*C__582 EPN can either be configured for Fast Startup or for MRP.

Glossary – Family C__582

Features

_Parameterizable gearbox

Fractional gearbox parameters (numerator/denominator) for almost any reproduction of gearbox factors.
Also for exact detection of closed rotary axes.

_Preset "on the fly"

Preset values are transmitted via the real-time capable process image area. This means that absolute adjustments (also called "preset" or "offset adjustment") can be performed synchronously with the control cycle even while the system is in operation. No more axis stops necessary.

_Remote teach-in

If the interface offers a teach-in process this usually takes place with a button on the device. In the case of devices with "remote teach-in", this function is available on the connection plug and can therefore also be triggered if the rotary encoder is not accessible when mounted.

_Reset-button

Easy operation as standard:
Profinet absolute encoders have an additional reset button for resetting the address and the device name.

_Current or voltage output (switchable)

Absolute rotary encoders with an analog interface provide the position or speed value as a current or as a voltage signal.
Depending on the specific encoder, this is a factory-setting or can be changed by the user via software or teach-in.

_Synchronisation of the sensor system to the bus clock

Position detection and signal output is synchronized on the clock of the bus connected to the encoder. Position control of several axes are precisely synchronized. This option is supported (e.g.) by PROFINET (isochronous application - isochronous real time IRT) or Ethernet Powerlink.

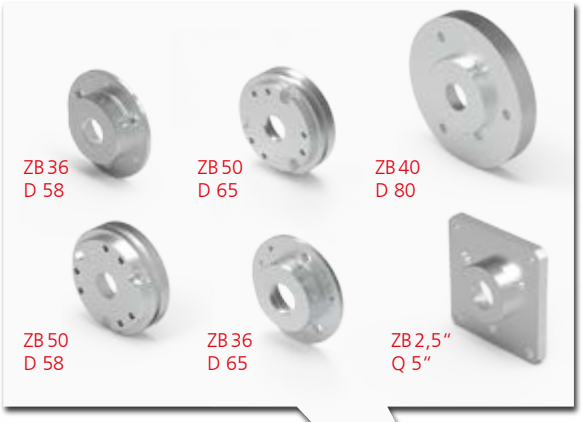
_Teach-in

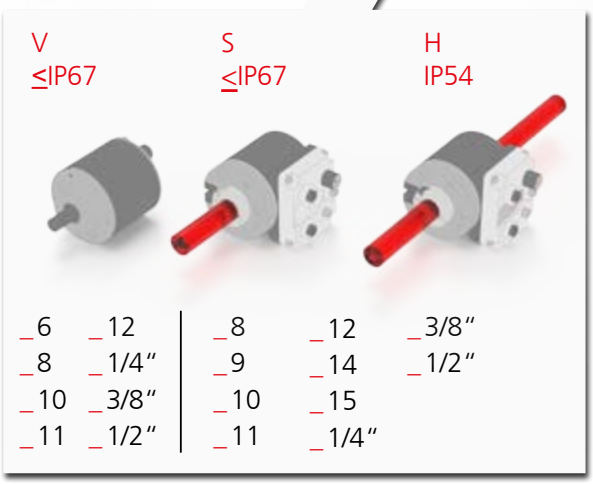
The output signal of the rotary encoder can be scaled to the desired output range. A very simple way to determine the scaling parameters is “teach-in”. To do this, the mechanics is moved to the lower end of the movement range. The limit position is saved. Then, the mechanics is moved to the upper end of the range and the upper limit position is saved. The analogue interface converts the the desired movement range to the maximum output range (4 … 20 mA, -10 … +10V). No parameterization software with the appropriate hardware is required for a teach-in. For this procedure, the machine has to be capable to reach the lower and upper end of the range to be measured.

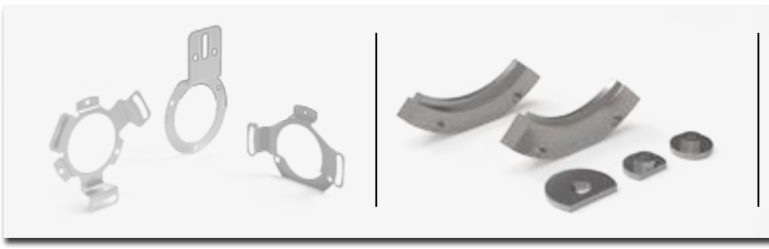
_Universal Motion Control Interface

DRIVE-CLiQ is the open system interface for position sensors for the SINAMICS© drive family from Siemens AG for motion control. This fast absolute encoder interface connects the converter centrally installed in the switch cabinet to the rotary encoders and position sensors directly on the respective axes.

C__582

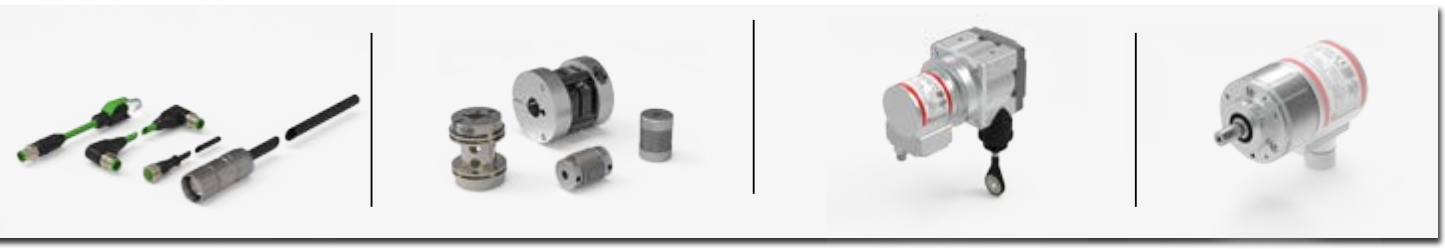

ZB 36
D 58
ZB 50
D 65
ZB 40
D 80
ZB 50
D 58
ZB 36
D 65
ZB 2,5“
Q 5“


V
≤IP67
S
≤IP67
H
IP54
_6 _12
_8 _1/4“
_10 _3/8“
_11 _1/2“
_8 _12 _3/8“
_9 _14 _1/2“
_10 _15
_11 _1/4“



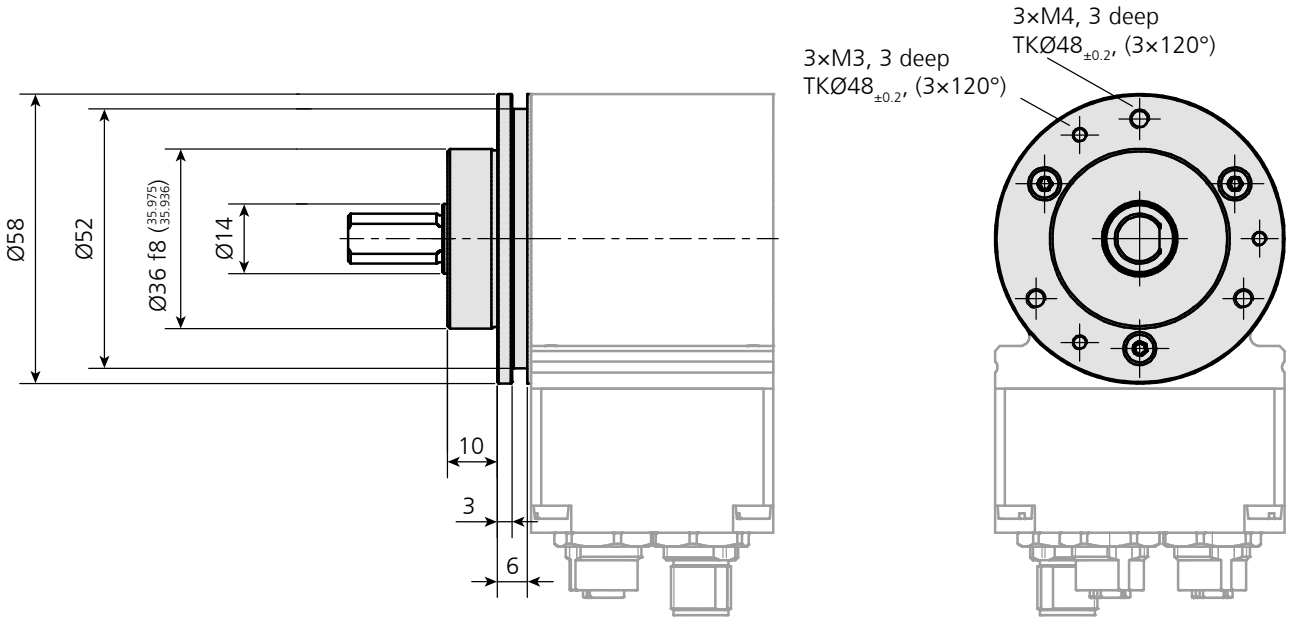
PROFINET
EtherNet/IP
EtherCAT
ETHERNET POWERLINK
PROFIBUS
IO-Link
DRIVE-CLiQ
CANopen
ASI RS485
Analog

PROFINET
EtherNet/IP
EtherCAT
ETHERNET POWERLINK
PROFIBUS
IO-Link
EtherCAT P
DRIVE-CLiQ
PROFIBUS KV
CANopen
ASI RS485
Analog
Parallel
INTERBUS
+ INC
+ SSI
SSI
+ INC

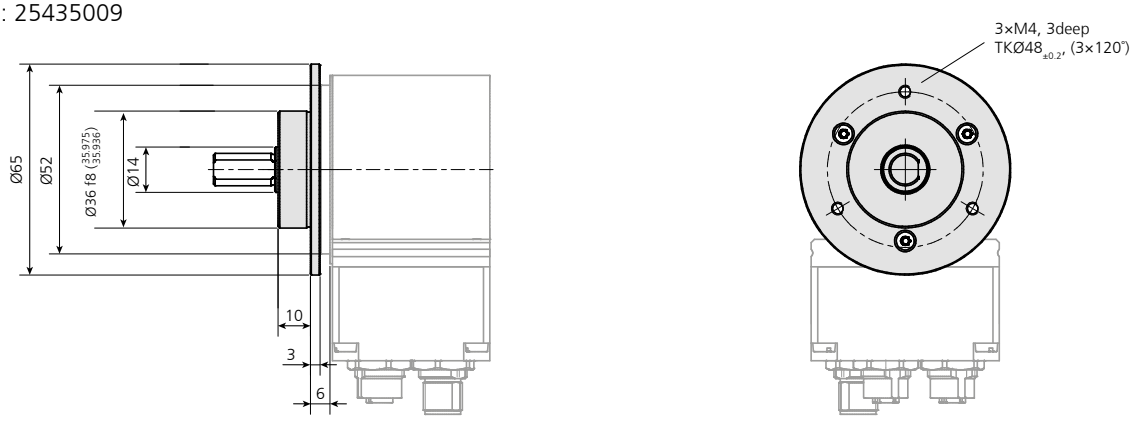


Flanges

standard flange ZB36, diameter D58, drilling pattern 3×M3 + 3×M4, other drill patterns available,
order code: 25435005



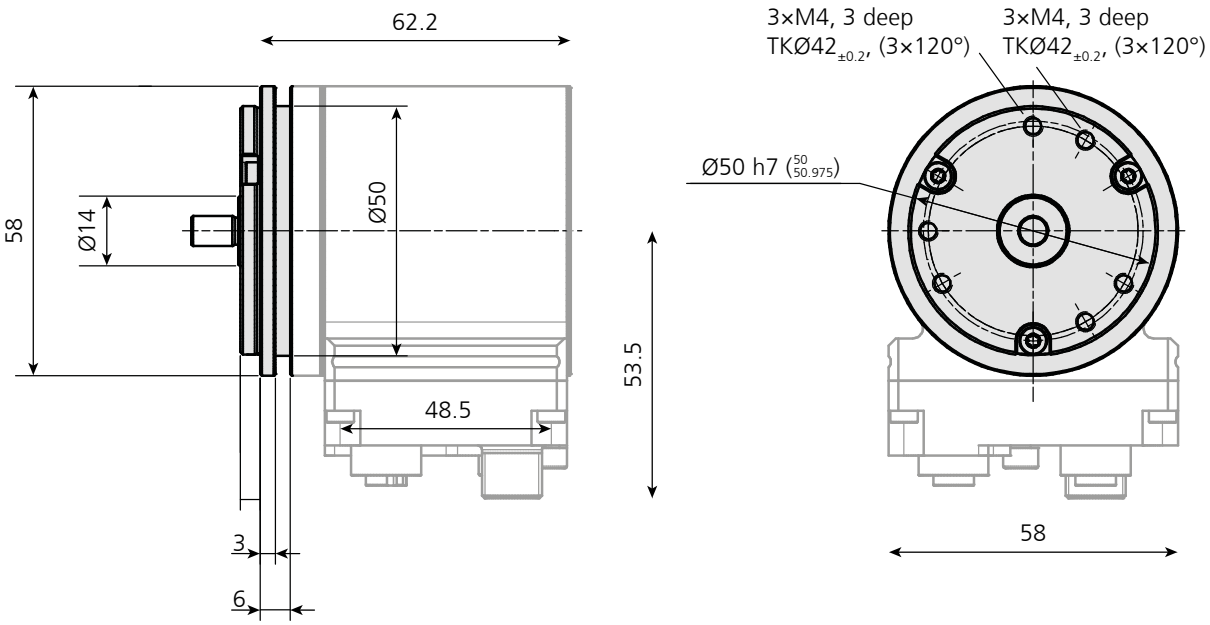
flange ZB36, diameter D65, drilling pattern 3×M4, other drill patterns available,
order code: 25435009



Illustrations are schematic diagrams. Binding dimension drawings and CAD data
for specific order numbers at www.tr-electronic.com or on request.

Flanges

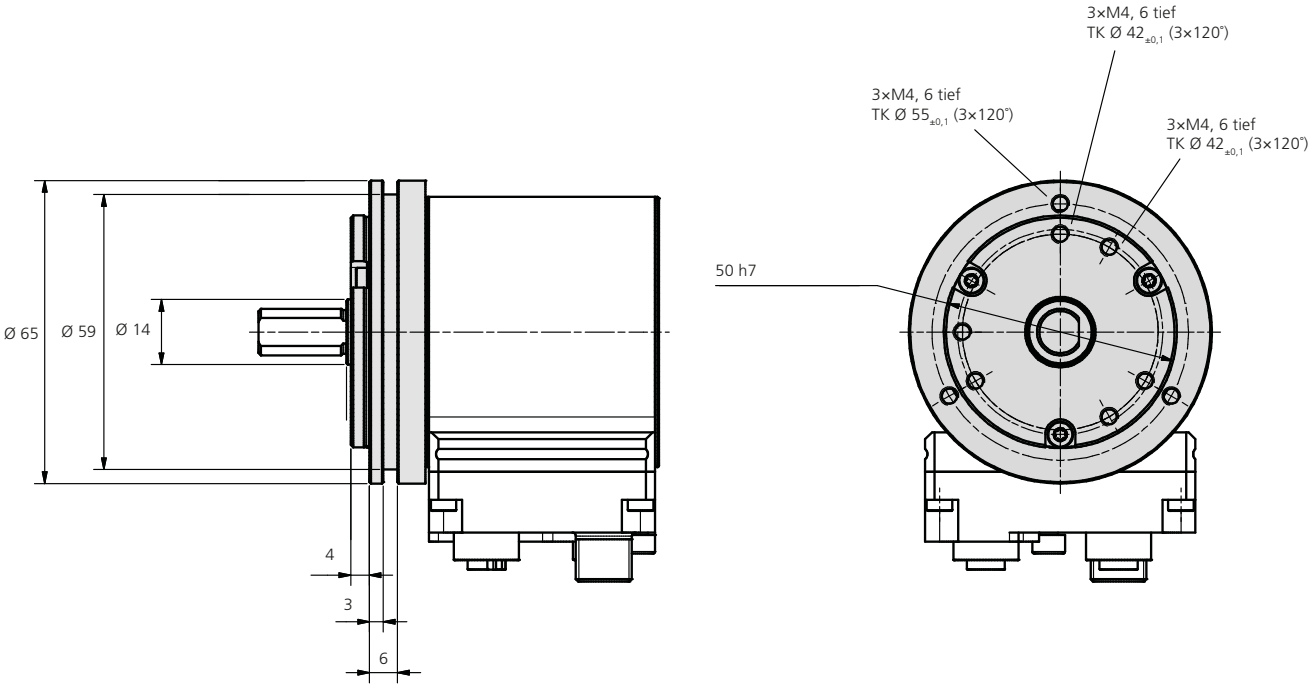
standard flange ZB50, diameter D58, drilling pattern 6×M4, other drill patterns available,
order code: 25435072



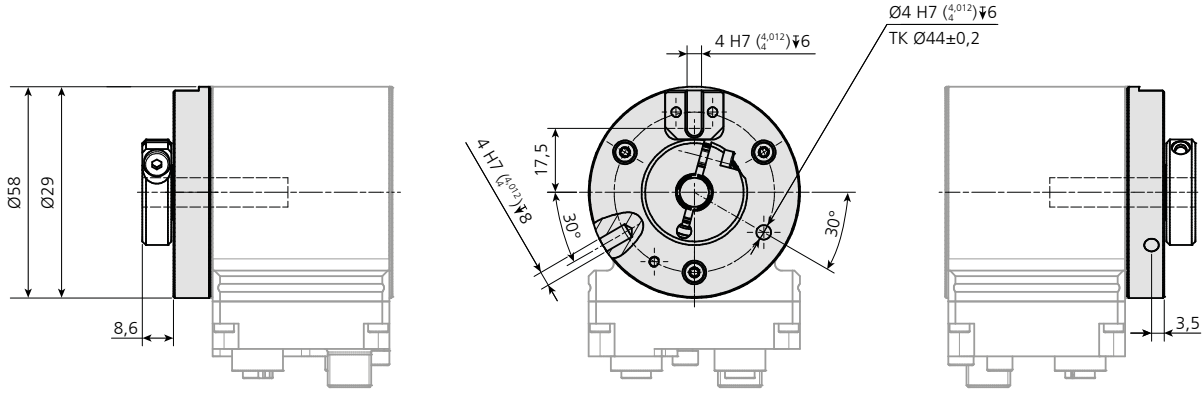
Illustrations are schematic diagrams. Binding dimension drawings and CAD data
for specific order numbers at www.tr-electronic.com or on request.

Flanges

flange ZB50, diameter D65, drilling pattern 3×M4 + 6×M4,
order code: 25435034



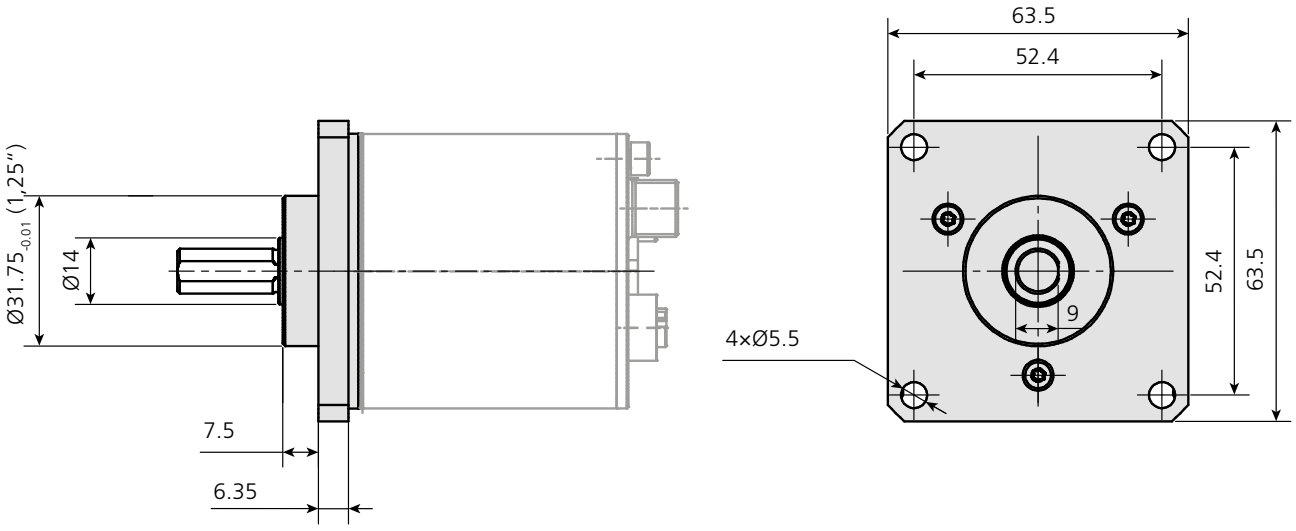
flange with slot nut, drilling pattern 1×M3 + 3× Ø 4, other drill patterns available,
order code: 25435007

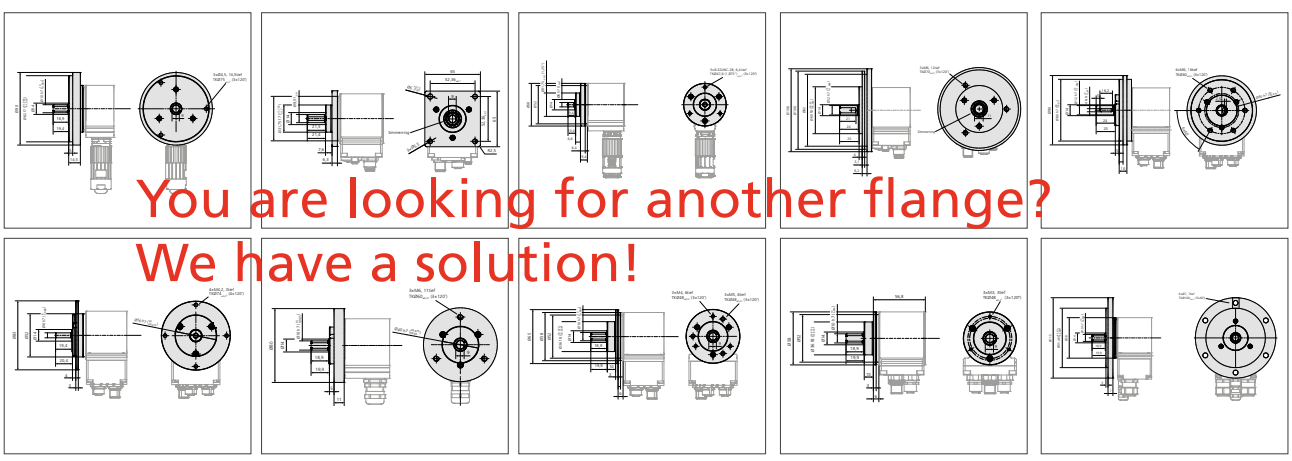


Illustrations are schematic diagrams. Binding dimension drawings and CAD data for specific order numbers at www.tr-electronic.com or on request.

Flanges

flange ZB31,75 (2,5“), square Q 63.5, drilling pattern 4× Ø 5.5,
order code: 25435012

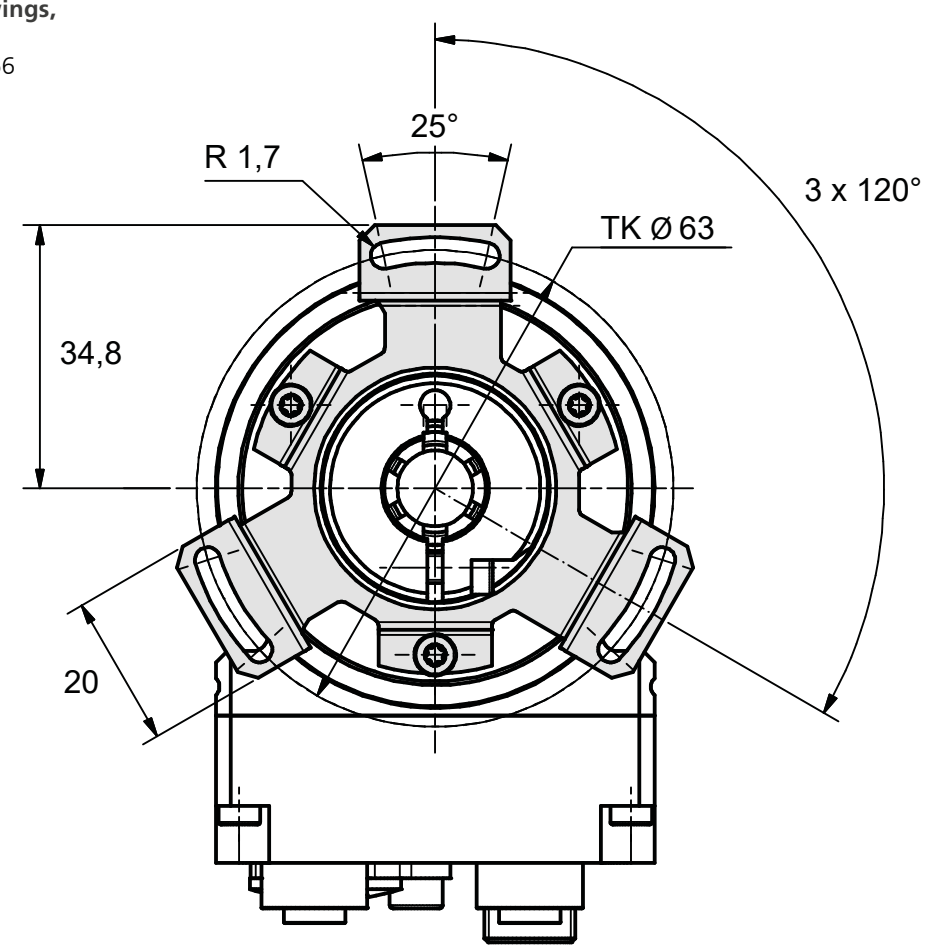




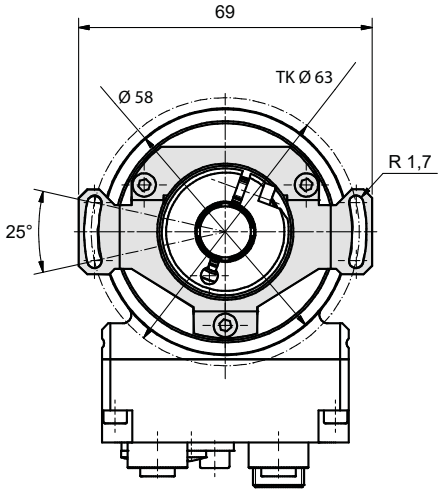
Illustrations are schematic diagrams. Binding dimension drawings and CAD data for specific order numbers at www.tr-electronic.com or on request.

Torque Support

torque support 3 wings,
pitch circle 63 mm,
order code: 49295066

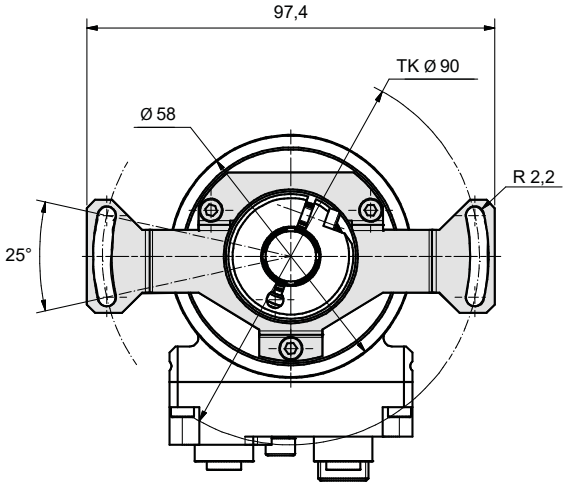


torque support 2 wings,
pitch circle 63 mm,
order code: 49295020

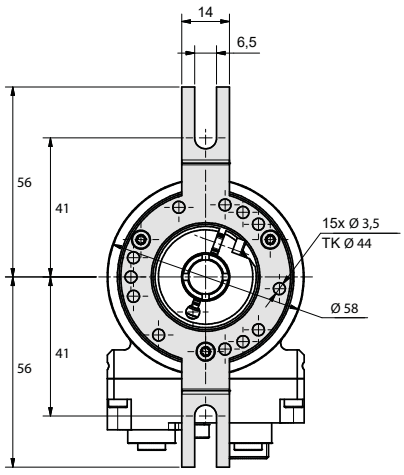


Illustrations are schematic diagrams. Binding dimension drawings and CAD data for specific order numbers at www.tr-electronic.com or on request.

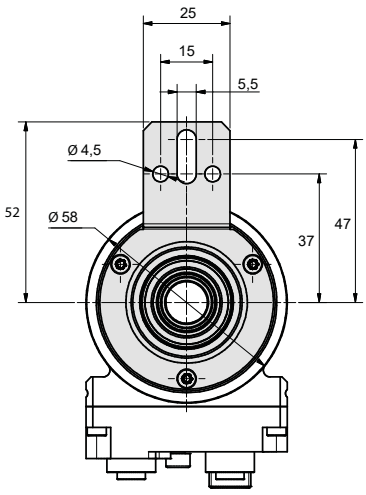
torque support 2 wings,
pitch circle 90 mm,
order code: 49295047



torque support 2 wings,
pitch circle 82 mm to 112 mm,
order code: 49295028



torque support 1 wings,
pitch circle 74 mm to 94 mm,
order code: 49295032



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