

# Absolute rotary encoder Functional Safety SIL2, SIL3

Series 582, 75, 88



**Safety  
Integrated**

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## CD\_582+FS – functional safety in standard industrial form factor



CDH 582+FS  
radial connection



CDV 582+FS  
axial connection

### Technology

- \_ Efficient design
- \_ Certified according to DIN EN 62061 (SIL) and 61508 (PL) by TÜV NRW
- \_ safety validated process data

Everything the application needs – reduce to the max.

CD\_582+FS are developed and certified according the two leading standards for devices providing integrated safety. Most application standards refer to these basic standards and thus CD\_582+FS fits into these applications.

CD582+FS provides safety evaluated process data as absolute position values for connected F-Hosts. The safety protected data channel completely supports the concept of integrated safety. Received and verified input data may be used in a functional safe applications without addl. plausibility check.

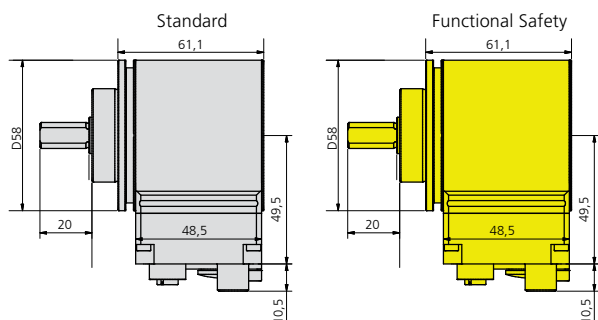


- \_ SIL2/PLd, cat3;
- \_ SIL3/PLe, cat4

- \_ architecture according category 4
- \_ "two encoders in one"

## Mechanics

- \_ Mounting space



- \_ Robust magnetic/optic multiturn rotary encoder CD\_582M+FS

- \_ rugged double magnetic multiturn rotary encoder CD\_582MM+FS

SIL 2 or SIL 3 – use the same mechanical and electrical features with precise the safety level your application needs.

CD\_58+FS was designed with category 4 architecture in focus. That means that you can replace existing solutions with two separate encoders on a common shaft by this one-piece-solution.

CD582+FS uses the same installation space as standard encoders in size 58mm would use. Installation situation can be used as before.

- \_ 13 bit resolution within one revolution (singleturn)
- \_ 16 bit revolutions (multiturn)
- Option, additional interfaces**
- \_ SSI (programmable)
- \_ INC (programmable)
- \_ SIN/COS (1024 steps per turn, non-programmable)

- \_ 13 bit resolution within one revolution (singleturn)
- \_ 16 bit revolutions (multiturn)
- Option, additional interfaces**
- \_ SSI (programmable)

Solid shaft

Blind shaft

Hollow shaft



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## C\_\_582 – the next generation: Standard form factor with so many possibilities

- \_ Solid shaft, clamping flange
- Slip-on hollow shaft up to 15 mm
- Hollow-through-shaft up to 15 mm

Safety integrated multiturn rotary encoders are available with solid shaft, blind shaft and hollow through shaft up to 15 mm. Plenty of available flange geometries adapt the encoders perfect into the specific application.

- \_ Shafts with form closure

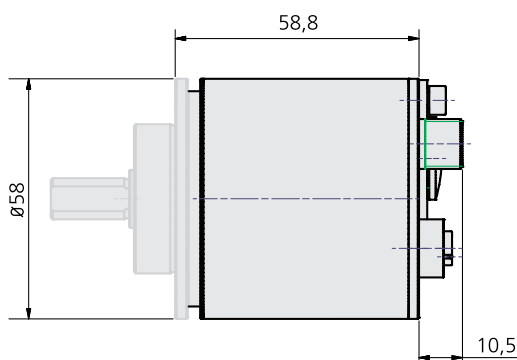
Solid shaft, blind shaft or hollow shafts are connected by form closure (keyway) to the driving shaft.



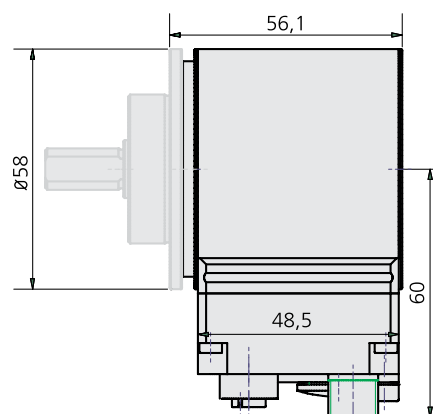
- \_ Connectors axial or radial

Mounting space is valuable. Do not let cabling interfere with other parts and components. For solid and slip-on shafts (blind shaft), you can choose between connectors axial (at the side opposite to the shaft) or radial (at the side of the encoder housing).

Connectors axial



Connectors radial



\_ protective bearing



CD\_582+FS can be equipped with a rugged bearing unit. This bearing unit handle big forces on the shaft. Application with driving chains or belts are possible.

## Interface

\_ Parameterizable gearbox

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

\_ Easy installation with open configuration options

TR absolute rotary encoders fulfill the standards of the respective user organizations for parameterization. Users can thus navigate the standard parameters without difficulty. The free configuration also offers easy access to all functions which are available in addition to the standard functions.

\_ Speed output with adjustable averaging

The time base for the speed evaluation can be freely set within a range of one millisecond to one second and can also be scaled in any units.

\_ Alarms and 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.

\_ Latest communication standards for Industry 4.0

The new C\_\_582 generation of industrial standard rotary encoders is rigorously equipped with state-of-the-art chip families.

\_ Reset switch

CD\_582+FS is equipped with a hardware reset switch. This resets the encoder to delivery state (factory settings) without the use of an engineering system or programming device.

# CD\_582+FS – PROFINET / PROFISafe

## PROFINET / PROFISafe



\_ Update time <1 ms (grey channel),  
<3 ms (safety channel)

Suitable for quick position control with less than 1 ms encoder actual value updating for the bus output.

\_ TCI implementation

TR-Electronic provides a manufacturer specific device tool that links into the TCI-Interface of Siemens engineering systems (e.g. TIA Portal)

\_ Legacy-Mode

CD\_582+FS behaves identically to successful series CD\_75 by setting up in legacy mode. Function blocks that are already in use in existing safety programmes may be re-used without big changes into new projects.

\_ Encoder Profile 4.2

CD\_582+FS EPN fulfils the Profinet Encoder Profile issued by Profibus-International user organisation for both, the grey and the secured data channel.

\_ 32 bit data words

Full resolution in a single telegram – the full bandwidth for position or speed value can be transmitted in a single data word with 32 bit payload.

\_ PROFINET with IRT

PROFINET version uses the most recent standards and technology with long term availability. It is compliant with the current standards of PI user organisation. Synchronisation to the bus clock (IRT) allows precise positioning of multiple axes.

\_ Shared device / grey and safe world

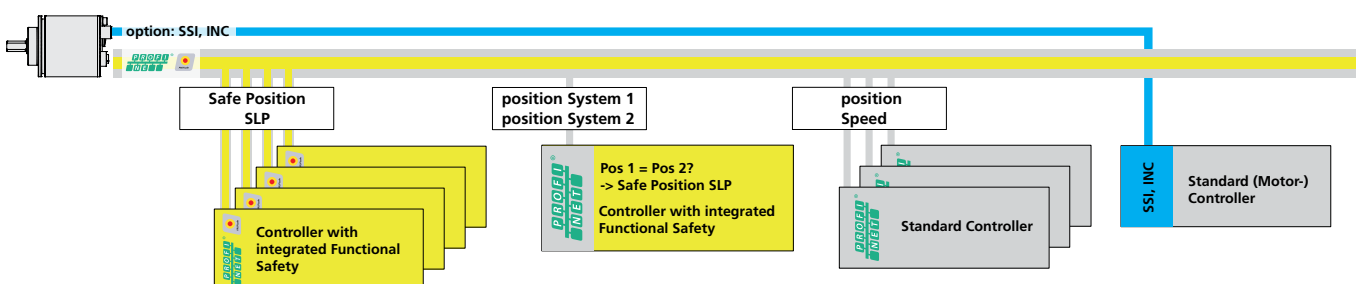
„Grey“ (non safe) position and speed values can be shared independently from one another. CD\_58+FS can provide values the same time to a high speed controller and a safety control system.

\_ Shared Device / up to 4 safety instances

Up to 4 safety controls can establish a secured communication channel to CD\_582+FS. No more need to hand over secured position values from one to the other safety control.

\_ Direct readout of the two encoder channels by bus

For non secured applications, the two detection channels can be read out directly via PROFINET IO. With this technology, you can realize installations with high availability.



\_ PROFISAFE V2.6.1

\_ extended "F-Dest"-address

\_ Reintegration after passivation

\_ "On the fly" preset for adjustment during the process

\_ Neighborhood detection

\_ Fast Startup for quick system availability

\_ Media-Redundancy Protocol for highest reliability

\_ Bus synchronized

CD\_582M+FS implements the basic protocol (BP) and extended Protocol (XP) according to PROFIsafe standard V2.6.1.

Via TC-Integrated application, the user can choose „F-Dest-Addresses (PROFIsafe addressing) in range 1...65536 via software.

After a protocol failure, safety encoders enter a passive state. CD\_582+FS can be reintegrated into safety control mechanism without a global system restart.

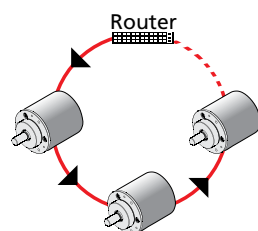
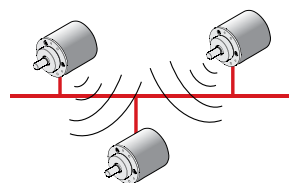
Preset values are transmitted via the real-time capable process image area. This means that absolute adjustments (also called "preset" or "offset adjustment") can be performed synchronously with the control cycle even while the system is in operation. No more axis stops necessary.

With neighborhood detection, you exchange devices without the use of an engineering tool. An encoder that is connected newly to the network can determine his position and function in the network by help of his physical neighbours and then requests the parameter data for this function from the master control.

The new CD\_582M+FS 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.\*

One ring for reliability. The PROFINET interface of the CD\_582M+FS 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.\*

Position detection of CD\_582M+FS can be synchronized with bus clock. Unwanted dead times and jitter can be reduced to a minimum for perfect position control.



\*CD\_582+FS EPN can be set up either for fast startup or media redundancy protocol.

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# CD\_582+FS – EtherNet/IP / CIP Safety

## EtherNet/IP / CIP Safety



### \_ SNCT Device Applet

Windows application for setting and saving the encoder parameters via Ethernet / IP. The user has the option of evaluating operating data, evaluating detailed diagnostic information and carrying out firmware updates.

### \_ CIP Encoder Device Profile 0x22

The CD\_582 + FS EIP encoders meet the established protocol standard for absolute encoders from ODVA.

### \_ 32 bit data words

Full resolution in a single telegram – the full bandwidth for position or speed value can be transmitted in a single data word with 32 bit payload.

### \_ Hybrid Device

The CD\_582 + FS EIP connects to the safety-related control as a safe device using the CIP safety protocol. At the same time, the encoder value can also be read via the non-safe channel, e.g. can be read out by further controls.

### \_ Direct readout of the two encoder channels by bus

For non secured applications, the two detection channels can be read out directly via Ethernet/IP. With this technology, you can realize installations with high availability.

### \_ The CIP Networks Library - Volume 7 CIP Safety, Ed. 2.16

CD\_582 + FS EIP complies with the current CIP safety standard version 2.16 and thus fits seamlessly into the latest safety architecture.

### \_ ACD: Address Collision Detection

CD\_582 + FS EIP recognizes duplicate network addresses and thus enables the user to quickly identify incorrect configurations during setup.

### \_ DHCP

Ethernet / IP uses mechanisms of TCP / IP for network communication, including DHCP, to distribute the network addresses when a system is started.

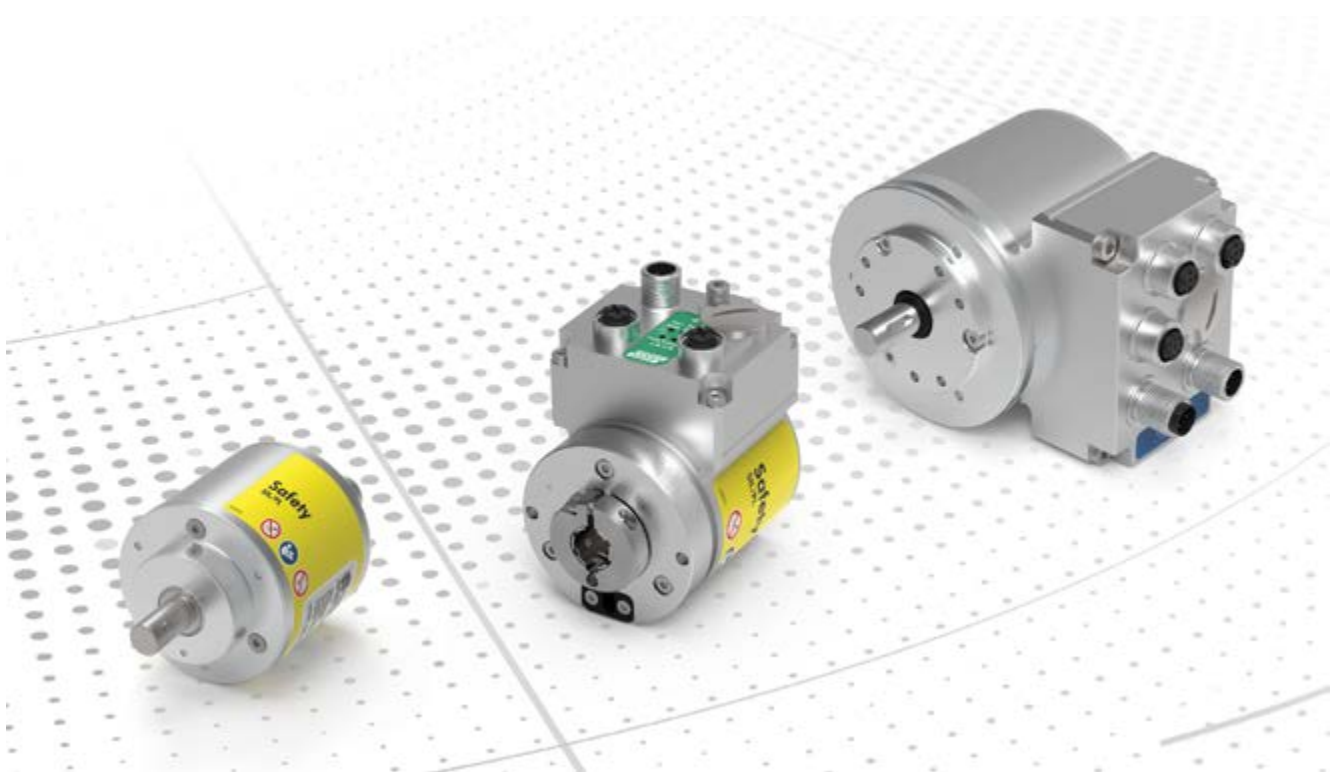
### \_ DLR: Device Level Ring

One ring for reliability. The Ethernet/IP interface of the CD\_582M+FS supports the innovative Device Level Ring Protocol DLR. Normally Ethernet/IP only supports a linear/tree structure. A redundant connection is not primarily provided as standard. DLR 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.





## Rotary Encoders- Functional Safety - SIL3 / PLe



### Functional safety up to SIL3 / PLe

Many applications in automation technology are subject to the highest safety requirements. By using SIL3/PLe-certified products you will achieve maximum safety in workplaces or environments that are shared by people and machines. Our absolute rotary encoders with SIL3 or PLe certification (safety rotary encoders) are available in size 75 mm (hollow shaft or solid shaft) and recently introduced size 58 mm (hollow, blind or solid shaft). Standard interfaces such as Double SSI, PROFIsafe via PROFIBUS, PROFIsafe via PROFINET or Open-









Safety via Powerlink or FSoE via EtherCAT guarantee optimal safety and precision. The ATEX-compliant housing variant offers additional protection in explosive atmospheres. No separate modules are necessary for reliable position output, and there is no need to separately program a safety module - you couldn't get a simpler or more cost-effective solution. With the newest series 582+FS, the most recent interface features are available in your secured application - by using same space as an ordinary 58mm Industrial Encoder.

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## Optical detection (E)

Product	CDV582M+FS3 	CDH582M+FS3 	CDS582M+FS3 
Detection	Optical detection (E)	Optical detection (E)	Optical detection (E)
Single / multi	(M) Multi	(M) Multi	(M) Multi
Supply	10...30 VDC	10...30 VDC	10...30 VDC
Full resolution	<= 29 bit	<= 29 bit	<= 29 bit
Steps per turn	<= 8192	<= 8192	<= 8192
Number of turns	<= 65536	<= 65536	<= 65536
Properties	Fast optical main detection	Fast optical main detection	Fast optical main detection
Shaft diameters available	10, 12, 14 mm with keyway	10, 12, 14, 15 mm with partial keyway	10, 12, 14, 15 mm with partial keyway
Connectors	Connectors radial, axial	Connectors radial	Connectors radial, axial
Ambient temperature	-25...+75°C	-25...+75°C	-25...+75°C
Protection class	IP 65	IP 54	IP 65
ATEX zone			
Interface	 EtherNet/IP	 EtherNet/IP	 EtherNet/IP
Option, additional interfaces (on request)	<b>SSI</b> <b>INC</b> <b>SIN / COS</b>	<b>SSI</b> <b>INC</b> <b>SIN / COS</b>	<b>SSI</b> <b>INC</b> <b>SIN / COS</b>
Weblink	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>
QR-Code			

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## Magnetic detection (M)

Product	CDV582MM+FS3	CDH582MM+FS3	CDS582MM+FS3
			
Detection	Magnetic detection (M)	Magnetic detection (M)	Magnetic detection (M)
Single / multi	(M) Multi	(M) Multi	(M) Multi
Supply	10...30 VDC	10...30 VDC	10...30 VDC
Full resolution	<= 29 bit	<= 29 bit	<= 29 bit
Steps per turn	<= 8192	<= 8192	<= 8192
Number of turns	<= 65536	<= 65536	<= 65536
Properties	Dewfall proof	Dewfall proof	Dewfall proof
Shaft diameters available	10, 12, 14 mm with keyway	10, 12, 14, 15 mm with partial keyway	10, 12, 14, 15 mm with partial keyway
Connectors	Connectors radial, axial	Connectors radial	Connectors radial, axial
Ambient temperature	-10..+75°C	-10..+75°C	-10..+75°C
Protection class	IP 65	IP 54	IP 65
ATEX zone			
Interface	 EtherNet/IP	 EtherNet/IP	 EtherNet/IP
Option, additional interfaces (on request)	<b>SSI</b>	<b>SSI</b>	<b>SSI</b>
Weblink	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>
QR-Code			

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# Optical detection (E)

## Magnetic detection (M)

CDV75M	CDV75MM	CDH75M
		
Optical detection (E)	Magnetic detection (M)	Optical detection (E)
(M) Multi	(M) Multi	(M) Multi
11...27 VDC	11...27 VDC	11...27 VDC
28 bit	28 bit	28 bit
8192	8192	8192
32768	32768	32768
Fast optical main detection	Dewfall proof	Fast optical main detection
10mm with keyway	10mm with keyway	20mm with keyway
Connectors radial, cable glands radial (SSI)	Connectors radial, cable glands radial (SSI)	Connectors radial, cable glands radial (SSI)
-20...+70 °C	-40...+65°C	-20...+70 °C
IP 54	IP 65	IP 54
     	     	     
<b>INC</b>	<b>INC</b>	<b>INC</b>
<a href="http://www.tr-electronic.com/s/S007271">www.tr-electronic.com/s/S007271</a>	<a href="http://www.tr-electronic.com/s/S007271">www.tr-electronic.com/s/S007271</a>	<a href="http://www.tr-electronic.com/s/S007272">www.tr-electronic.com/s/S007272</a>
		

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## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
<b>CDV75M-SSI (E) Double detection, solid shaft, SSI</b>						
CDV75M-00001	8192	4096	10Keyway/19,5 ZB50	2 x cable gland		TTL Incr -20...70°C
<b>CDV75M-PB (E) Double detection, solid shaft, Profibus</b>						
CDV75M-00008	8192	32768	10Keyway/19,5 ZB50/D75 9XM4	Connector radial	5 x M12	SIN/COS -20°...70°C
<b>CDV75M-PN (E) Double detection, solid shaft, Profinet</b>						
CDV75M-00012	8192	32768	10Keyway/19,5 ZB50/D75 9XM4	Connector radial	4 x M12	TTL Incr -20°...70°C
CDV75M-00014	8192	32768	10Keyway/19,5 ZB50/D75 9XM4	Connector radial	4 x M12	
CDV75M-00018	8192	32768	10Keyway/19,5 ZB36	Connector radial	4 x M12	TTL Incr -20°...70°C IP65
CDV75M-00026	8192	32768	10Keyway/19,5 ZB50/D75 9XM4	Connector radial	4 x M12	Seawater-resistant
CDV75M-00020	8192	32768	10Keyway/19,5 ZB36	Connector radial	4 x M12	Stainless steel
<b>CDV75M-EPL (E) Double detection, solid shaft, Powerlink</b>						
CDV75M-00021	8192	32768	10Keyway/19,5 ZB36	Connector radial	4 x M12	
<b>CDV75M-PN (E) Double detection, solid shaft, EtherCAT</b>						
CDV75M-00054	8192	32768	10Keyway/19,5 ZB50	Connector radial	4 x M12	TTL Incr -25°...60°C
<b>CDV75M-PN (E) Double detection, both magnetic, solid shaft, EtherCAT</b>						
CDV75M-00056	8192	32768	10Keyway/19,5 ZB50 D75	Connector radial	4 x M12	-40°C...+65°C
<b>CDV75M-PN (M) Double detection, both magnetic, solid shaft, Profinet</b>						
CDV75M-00061	8192	32768	10Keyway/19,5 ZB36	Connector radial	4 x M12	-40°C...+65°C
<b>CDV75M-PN (E) Double detection, both magnetic, solid shaft, EtherCAT</b>						
CDV75M-00059	8192	32768	10Keyway/19,5 ZB36	Connector radial	4 x M12	-40°C...+65°C
<b>CDV75M-PN (M) Double detection, both magnetic, solid shaft, Profinet</b>						
CDV75M-00043	8192	32768	10Keyway/19,5 ZB50	Connector radial	4 x M12	-40°C...+65°C
<b>CDV75M-PN (M) Double detection, both magnetic, solid shaft, Powerlink</b>						
CDV75M-00065	8192	32768	10Keyway/19,5 ZB50 D75	Connector radial	4 x M12	-40°C...+65°C

For further product information simply enter the order number in the search field at [www.tr-electronic.com](http://www.tr-electronic.com). We will help you to select the most suitable products from the complete TR range. Please contact us ([info@tr-electronic.de](mailto:info@tr-electronic.de)).

## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
<b>CDH75M-SSI (E) Double detection, hollow shaft, SSI</b>						
CDH75M-00001	8192	4096	20H7/Keyway slot for pin D4	2 x cable gland		TTL Incr -20...70°C 2x KV
CDH75M-00024	8192	4096	14H7/Keyway slot for pin D4	2 x cable gland		
<b>CDH75M-PB (E) Double detection, hollow shaft, Profibus</b>						
CDH75M-00008	8192	32768	20H7/Keyway slot for pin D4	Connector radial	5 x M12	TTL Incr -20°...70°C
<b>CDH75M-PN (E) Double detection, hollow shaft, Profinet</b>						
CDH75M-00013	8192	32768	20H7/Keyway slot for pin D4	Connector radial	4 x M12	TTL Incr -20°...70°C
CDH75M-00019	8192	32768	20H7/Keyway slot for pin D4	Connector radial	4 x M12	Seawater-resistant
CDH75M-00046	8192	32768	20H7/Keyway ZB46	Connector radial	5 x M12	TTL Incr -20°...70°C
<b>CDH75M-EPL (E) Double detection, hollow shaft, Powerlink</b>						
CDH75M-00026	8192	32768	20H7/Keyway slot for pin D4	Connector radial	4 x M12	
<b>CDH75M-PN (E) Double detection, hollow shaft, EtherCAT</b>						
CDH75M-00041	8192	32768	12H7/Keyway slot for pin D4	Connector radial	4 x M12	TTL Incr -25°...60°C
<b>CDH582 hollow shaft, magnetic/magnetic, SIL3, PROFINET</b>						
CDH582M-00017	8192	65536	12H7 Hollowshaft, keyway	Connector radial	3 x M12	
CDH582M-00018	8192	65536	14H7 Hollowshaft, keyway	Connector radial	3 x M12	
<b>CDS582 blind shaft, magnetic/magnetic, SIL3, PROFINET</b>						
CDS582M-00043	8192	65536	12H7 Blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00047	8192	65536	15H7 Blind shaft, keyway	Connector radial	3 x M12	
<b>CDV582 solid shaft, magnetic/magnetic, SIL3, PROFINET</b>						
CDV582M-00111	8192	65536	10mm, keyway, 19,5	Connector radial	3 x M12	bearing module
CDV582M-00061	8192	65536	10mm, keyway, 19,5	Connector radial	3 x M12	
CDV582M-00066	8192	65536	12mm, keyway, 19,5	Connector axial	3 x M12	

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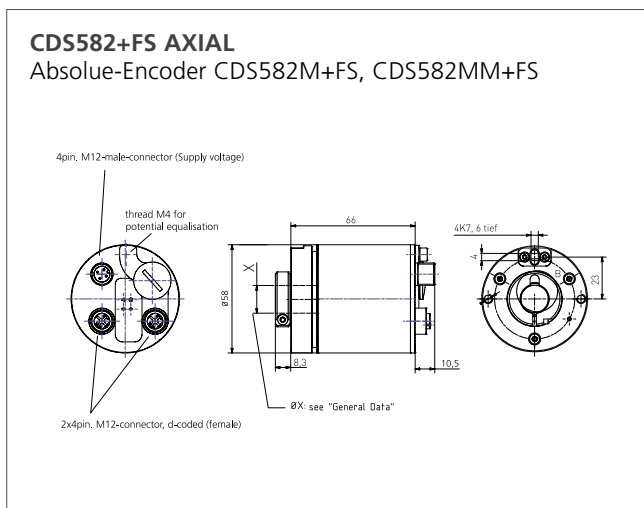
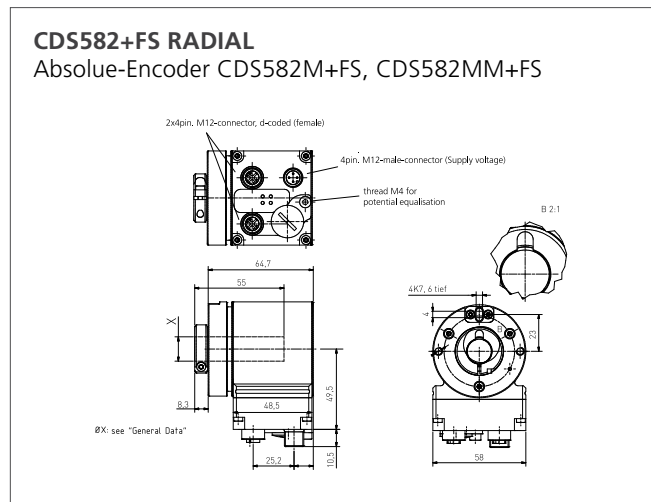
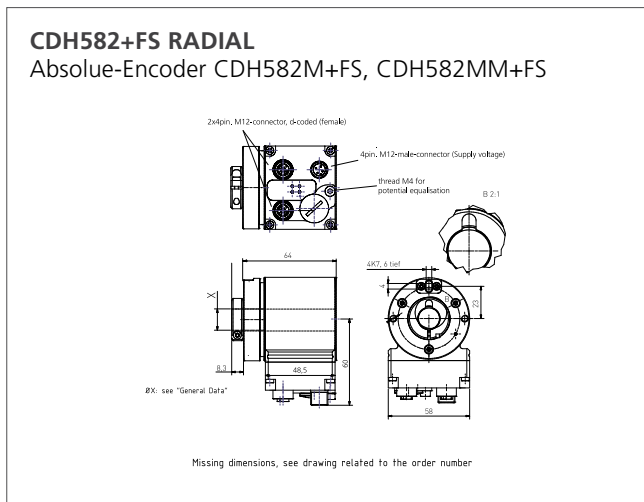
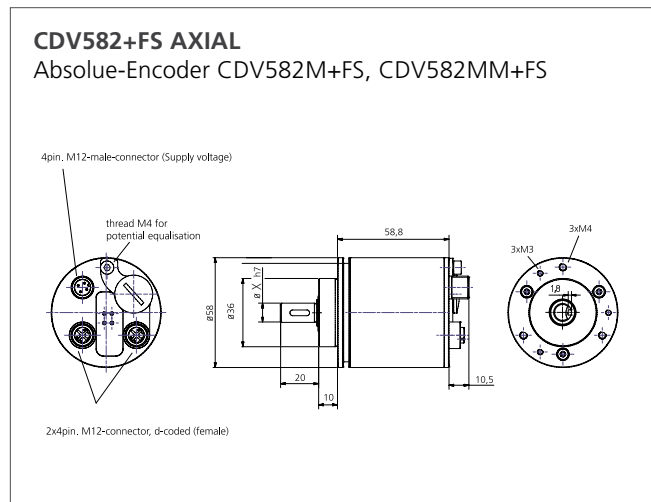
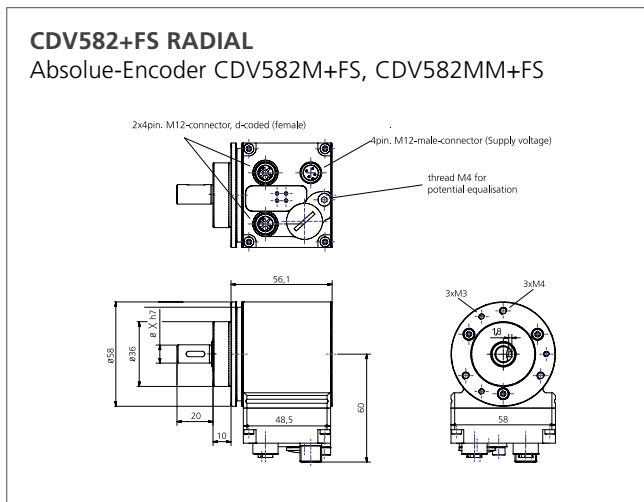
## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
<b>CDH582 hollow shaft, optisch/magnetic, SIL3, PROFINET</b>						
CDH582M-00011	8192	65536	10H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00012	8192	65536	12H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00013	8192	65536	14H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00014	8192	65536	15H7 hollow shaft, keyway	Connector radial	3 x M12	
<b>CDS582 blind shaft, optic/magnetic, SIL3, PROFINET</b>						
CDS582M-00039	8192	65536	15H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00035	8192	65536	12H7 blind shaft, keyway	Connector radial	3 x M12	
<b>CDV582 solid shaft, optic/magnetic, SIL3, PROFINET</b>						
CDV582M-00049	8192	65536	10mm, blind shaft, 19,5	Connector radial	3 x M12	
CDV582M-00050	8192	65536	10mm, blind shaft, 19,5	Connector axial	3 x M12	
CDV582M-00051	8192	65536	10mm, blind shaft, 19,5	Connector radial	3 x M12	
CDV582M-00057	8192	65536	14mm, blind shaft, 19,5	Connector radial	3 x M12	
CDV582M-00109	8192	65536	10mm, blind shaft, 19,5	Connector radial	3 x M12	bearing module
CDV582M-00110	8192	65536	10mm, blind shaft, 19,5	Connector radial	3 x M12	bearing module
CDV582M-00129	8192	65536	10mm, blind shaft, 19,5	Connector radial	3 x M12	

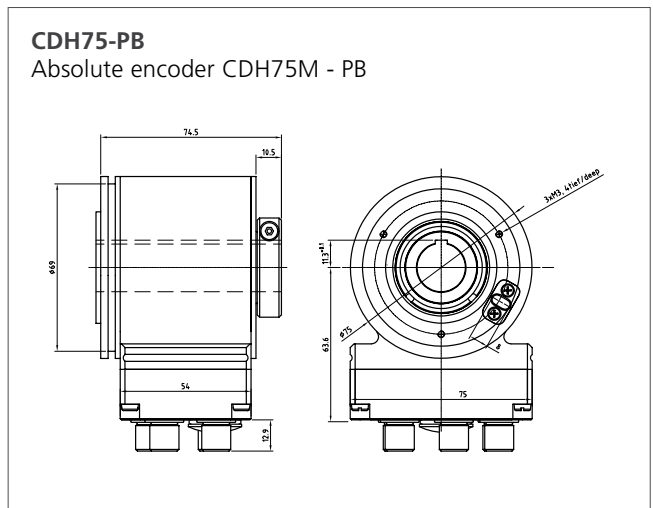
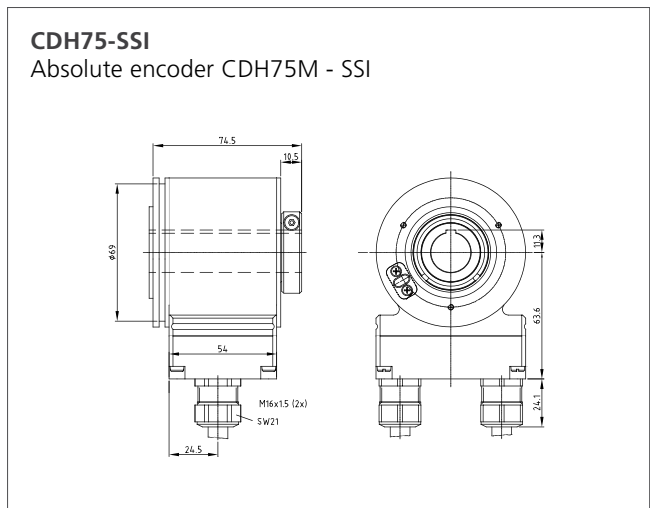
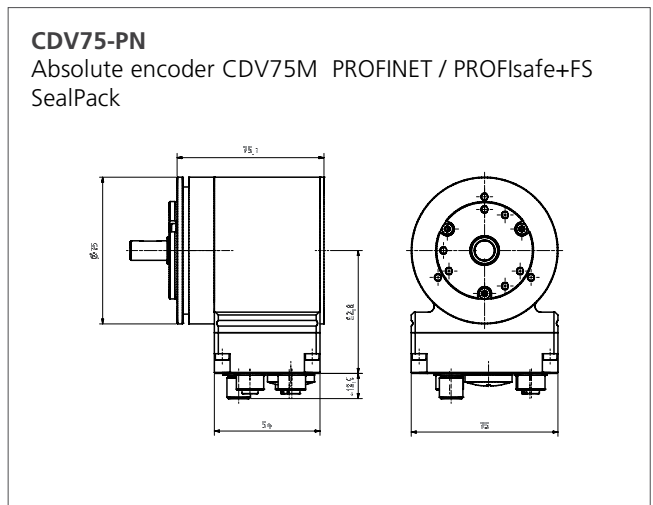
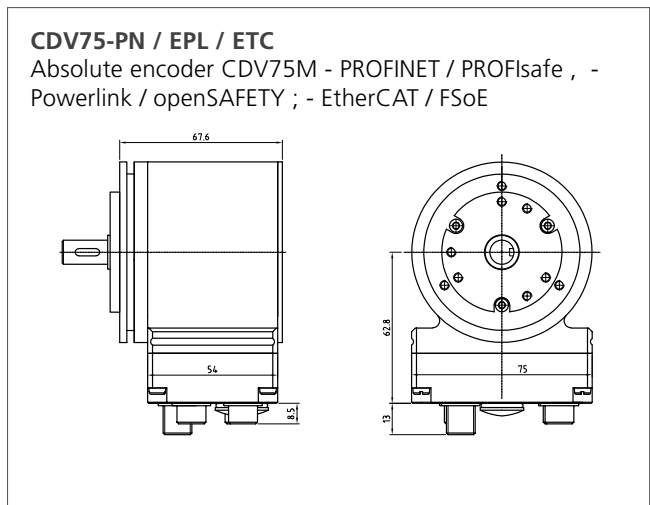
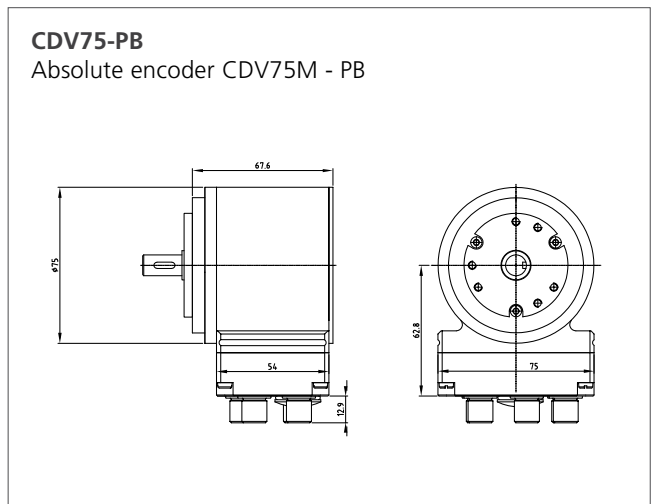
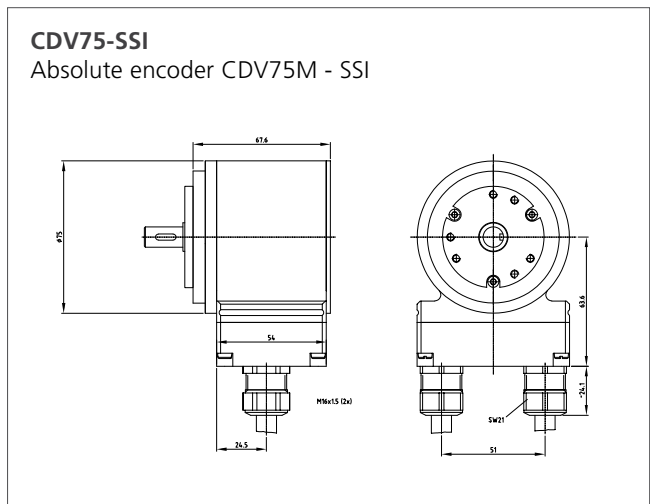
For further product information simply enter the order number in the search field at [www.tr-electronic.com](http://www.tr-electronic.com).



# Dimensional Drawings



# Dimensional Drawings

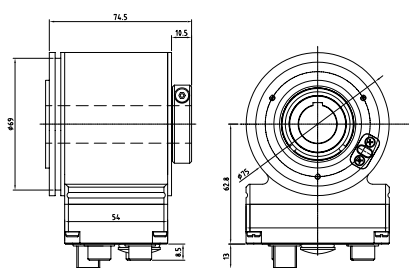


Illustrations are schematic diagrams. Binding dimension drawings and CAD data for specific order numbers at [www.tr-electronic.com](http://www.tr-electronic.com) or on request.

# Dimensional Drawings

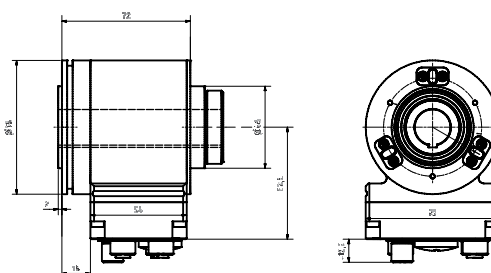
## CDH75-PN / EPL / ETC

Absolute encoder CDH75M - PROFINET / PROFIsafe , - Powerlink / openSAFETY, - EtherCAT / FSoE



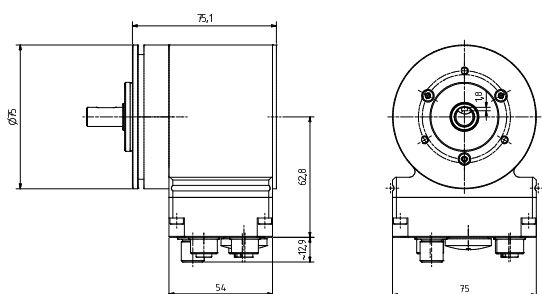
## CDH75-PN

Absolute encoder CDH75M PROFINET / PROFIsafe+FS SealPack



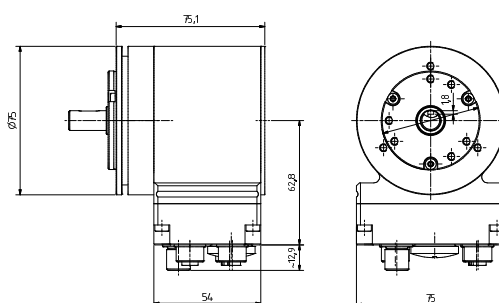
## Seal Pack

Sample CDV75



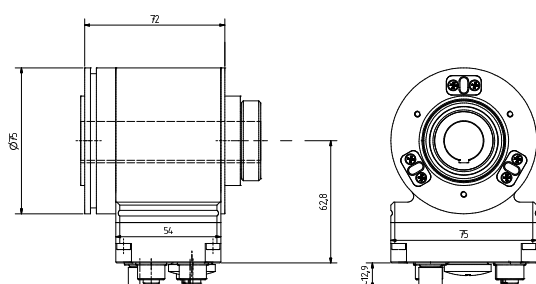
## Stainless Steel

Sample CDV75

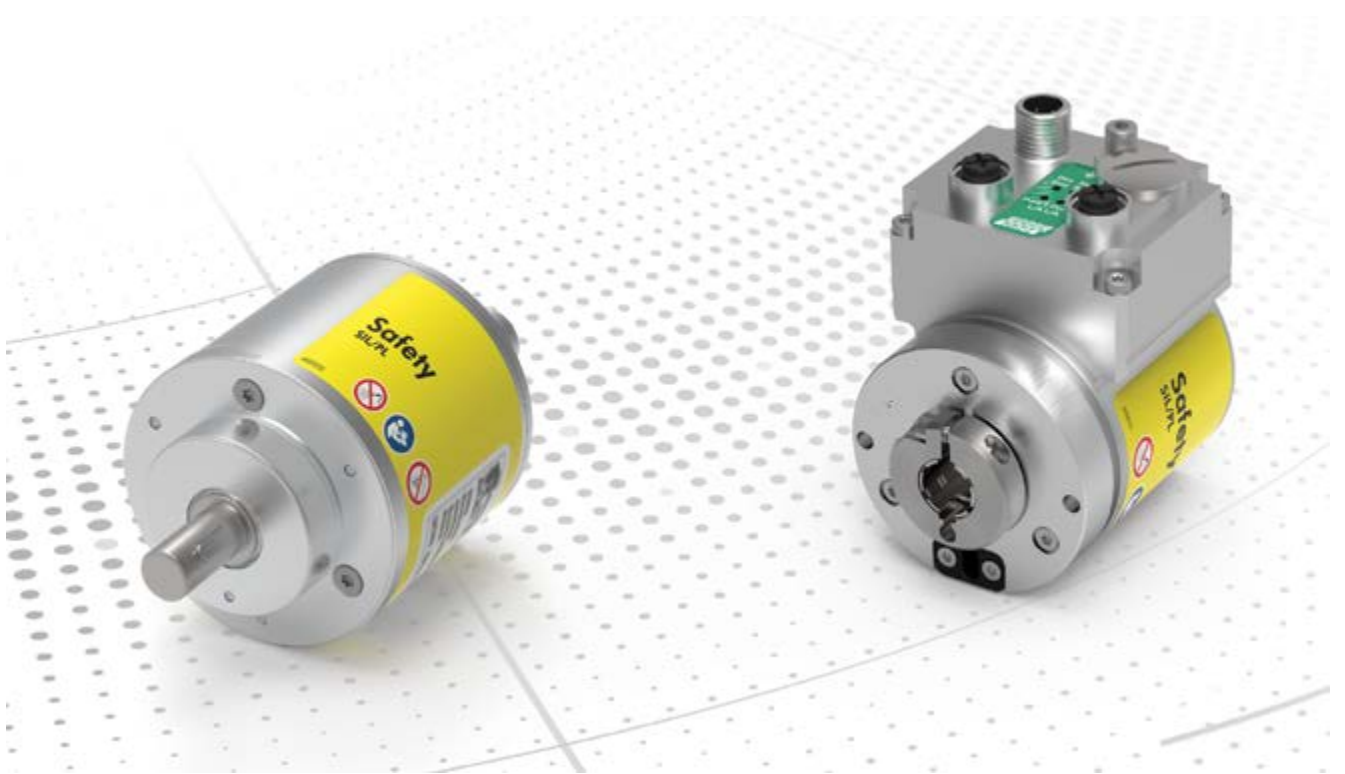


## Seawater-resistant Aluminum

Sample CDH75



## Rotary Encoders- Functional Safety - SIL2 / PLd



### Functional safety up to SIL2 / PLd

Safety functions that mainly ensure the safety of the machine itself are mostly specified with SIL2 resp. PLd. For these applications, TR-Electronic provides an optimized absolute rotary encoder system. With a compact size of 58 mm, these real multiturn devices can be fitted with solid, blind or hollow shaft - all three equipped with the form closure required for safety applications realized by groove and parallel key. Blind and hollow shafts are available for shaft diameters up to 15 mm. Position reading value is transmitted via the

secured protocol part directly into a safety certified control and can be used directly as "safe position" (SLP) for safety calculations.

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### Contents

Products.....	21
Suggested Products.....	23
Dimensional Drawings.....	26

## Optical detection (E)

<b>Product</b>	CDV582M+FS2 	CDH582M+FS2 	CDS582M+FS2 
<b>Detection</b>	Optical detection (E)	Optical detection (E)	Optical detection (E)
<b>Single / multi</b>	(M) Multi	(M) Multi	(M) Multi
<b>Supply</b>	10...30 VDC	10...30 VDC	10...30 VDC
<b>Full resolution</b>	<= 29 bit	<= 29 bit	<= 29 bit
<b>Steps per turn</b>	<= 8192	<= 8192	<= 8192
<b>Number of turns</b>	<= 65536	<= 65536	<= 65536
<b>Properties</b>	Fast optical main detection	Fast optical main detection	Fast optical main detection
<b>Shaft diameters available</b>	10, 12, 14 mm with keyway	10, 12, 14, 15 mm with partial keyway	10, 12, 14, 15 mm with partial keyway
<b>Connectors</b>	Connectors radial, axial	Connectors radial	Connectors radial, axial
<b>Ambient temperature</b>	-25...+75°C	-25...+75°C	-25...+75°C
<b>Protection class</b>	IP 65	IP 54	IP 65
<b>ATEX zone</b>			
<b>Interface</b>	 EtherNet/IP	 EtherNet/IP	 EtherNet/IP
<b>Option, additional interfaces (on request)</b>	<b>SSI</b> <b>INC</b>  <b>SIN / COS</b>	<b>SSI</b> <b>INC</b>  <b>SIN / COS</b>	<b>SSI</b> <b>INC</b>  <b>SIN / COS</b>
<b>Weblink</b>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>
<b>QR-Code</b>			

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

## Magnetic detection (M)

Product	CDV582MM+FS2	CDH582MM+FS2	CDS582MM+FS2
			
Detection	Magnetic detection (M)	Magnetic detection (M)	Magnetic detection (M)
Single / multi	(M) Multi	(M) Multi	(M) Multi
Supply	10...30 VDC	10...30 VDC	10...30 VDC
Full resolution	<= 29 bit	<= 29 bit	<= 29 bit
Steps per turn	<= 8192	<= 8192	<= 8192
Number of turns	<= 65536	<= 65536	<= 65536
Properties	Dewfall proof	Dewfall proof	Dewfall proof
Shaft diameters available	10, 12, 14 mm with keyway	10, 12, 14, 15 mm with partial keyway	10, 12, 14, 15 mm with partial keyway
Connectors	Connectors radial, axial	Connectors radial	Connectors radial, axial
Ambient temperature	-10...+75°C	-10...+75°C	-10...+75°C
Protection class	IP 65	IP 54	IP 65
ATEX zone			
Interacew	 EtherNet/IP	 EtherNet/IP	 EtherNet/IP
Option, additional interfaces (on request)	<b>SSI</b>	<b>SSI</b>	<b>SSI</b>
Weblink	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>	<a href="http://www.tr-electronic.com/s/S018153">www.tr-electronic.com/s/S018153</a>
QR-Code			

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

## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
------------	----------------	-------	----------------	--------------------	----------------	--------

### CDH582 hollow shaft, magnetic/magnetic, SIL2, PROFINET

CDH582M-00006	8192	65536	10H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00007	8192	65536	12H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00008	8192	65536	14H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00009	8192	65536	15H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00010	8192	65536	8H7 hollow shaft, keyway	Connector radial	3 x M12	

### CDS582 blind shaft, magnetic/magnetic, SIL2, PROFINET

CDS582M-00009	8192	65536	10H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00010	8192	65536	10H7 blind shaft, keyway	Connector axial	3 x M12	
CDS582M-00011	8192	65536	12H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00012	8192	65536	12H7 blind shaft, keyway	Connector axial	3 x M12	
CDS582M-00013	8192	65536	14H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00014	8192	65536	14H7 blind shaft, keyway	Connector axial	3 x M12	
CDS582M-00015	8192	65536	15H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00016	8192	65536	15H7 blind shaft, keyway	Connector axial	3 x M12	
CDS582M-00067	8192	65536	8H7 blind shaft, keyway	Connector radial	3 x M12	
CDS582M-00068	8192	65536	8H7 blind shaft, keyway	Connector axial	3 x M12	

For further product information simply enter the order number in the search field at [www.tr-electronic.com](http://www.tr-electronic.com).

## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
------------	----------------	-------	----------------	--------------------	----------------	--------

### CDV582 solid shaft, magnetic/magnetic, SIL2, PROFINET

CDV582M-00104	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00115	8192	65536	10mm with keyway, 19,5	Connector radial	3 x M12	with bearing module
CDV582M-00013	8192	65536	10mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00014	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00015	8192	65536	10mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00016	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00017	8192	65536	12mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00018	8192	65536	12mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00019	8192	65536	12mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00020	8192	65536	12mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00021	8192	65536	14mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00022	8192	65536	14mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00023	8192	65536	14mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00024	8192	65536	14mm with keyway, 19,5	Connector axial	3 x M12	

### CDH582 hollow shaft, optic/magnetic, SIL2, PROFINET

CDH582M-00001	8192	65536	10H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00002	8192	65536	12H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00003	8192	65536	14H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00004	8192	65536	15H7 hollow shaft, keyway	Connector radial	3 x M12	
CDH582M-00005	8192	65536	8H7 hollow shaft, keyway	Connector radial	3 x M12	

For further product information simply enter the order number in the search field at [www.tr-electronic.com](http://www.tr-electronic.com).

We will help you to select the most suitable products from the complete TR range. Please contact us ([info@tr-electronic.de](mailto:info@tr-electronic.de)).



## Suggested Products

Order code	Steps per turn	Turns	Shaft / Flange	Connector position	Connector type	Remark
------------	----------------	-------	----------------	--------------------	----------------	--------

### CDS582 blind shaft, optic/magnetic, SIL2, PROFINET

CDS582M-00001	8192	65536	10H7 blind shaft, keyway	connector radial	3 x M12	
CDS582M-00002	8192	65536	10H7 blind shaft, keyway	connector axial	3 x M12	
CDS582M-00003	8192	65536	12H7 blind shaft, keyway	connector radial	3 x M12	
CDS582M-00004	8192	65536	12H7 blind shaft, keyway	connector axial	3 x M12	
CDS582M-00005	8192	65536	14H7 blind shaft, keyway	connector radial	3 x M12	
CDS582M-00006	8192	65536	14H7 blind shaft, keyway	connector axial	3 x M12	
CDS582M-00007	8192	65536	15H7 blind shaft, keyway	connector radial	3 x M12	
CDS582M-00008	8192	65536	15H7 blind shaft, keyway	connector axial	3 x M12	

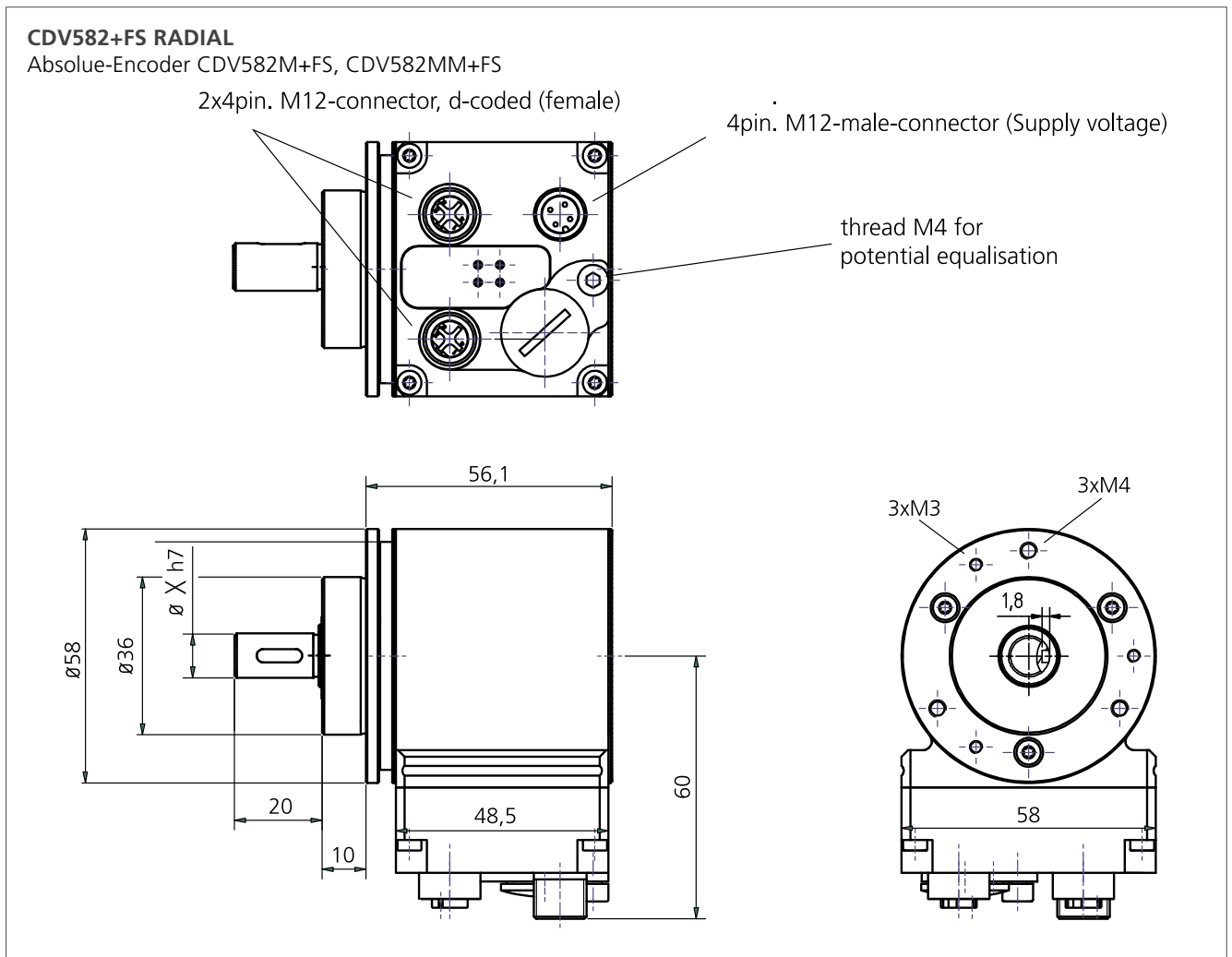
### CDV582 solid shaft, optic/magnetic, SIL2, PROFINET

CDV582M-00001	8192	65536	10mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00002	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00003	8192	65536	10mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00004	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00005	8192	65536	12mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00006	8192	65536	12mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00007	8192	65536	12mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00008	8192	65536	12mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00009	8192	65536	14mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00010	8192	65536	14mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00011	8192	65536	14mm with keyway, 19,5	Connector radial	3 x M12	
CDV582M-00012	8192	65536	14mm with keyway, 19,5	Connector axial	3 x M12	
CDV582M-00098	8192	65536	10mm with keyway, 19,5	Connector axial	3 x M12	

For further product information simply enter the order number in the search field at [www.tr-electronic.com](http://www.tr-electronic.com).

We will help you to select the most suitable products from the complete TR range. Please contact us ([info@tr-electronic.de](mailto:info@tr-electronic.de)).

## Dimensional Drawings

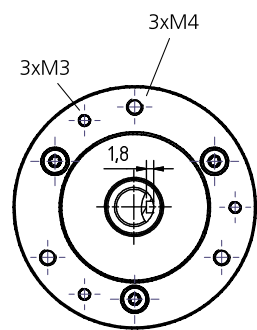
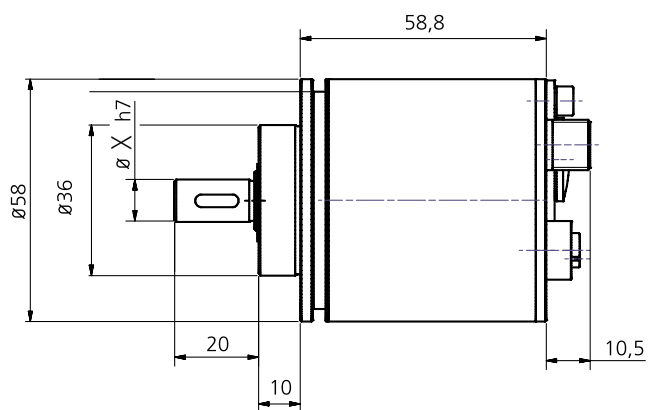
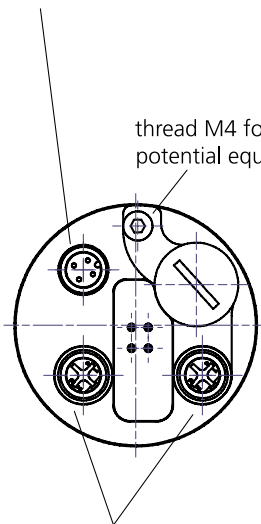


# Dimensional Drawings

## CDV582+FS AXIAL

Absolute-Encoder CDV582M+FS, CDV582MM+FS

4pin. M12-male-connector (Supply voltage)



2x4pin. M12-connector, d-coded (female)

## Dimensional Drawings

### CDH582+FS RADIAL

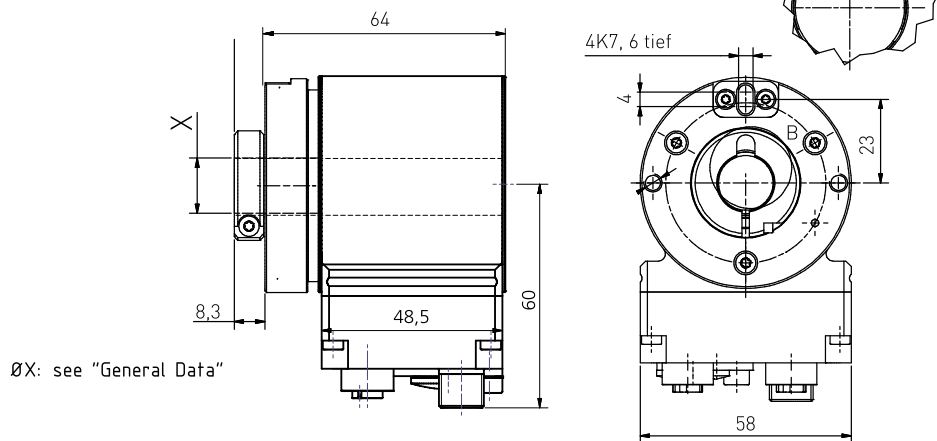
Absolute-Encoder CDH582M+FS, CDH582MM+FS

2x4pin. M12-connector, d-coded (female)

4pin. M12-male-connector (Supply voltage)

thread M4 for  
potential equalisation

B 2:1



Missing dimensions, see drawing related to the order number

# Dimensional Drawings

## CDS582+FS RADIAL

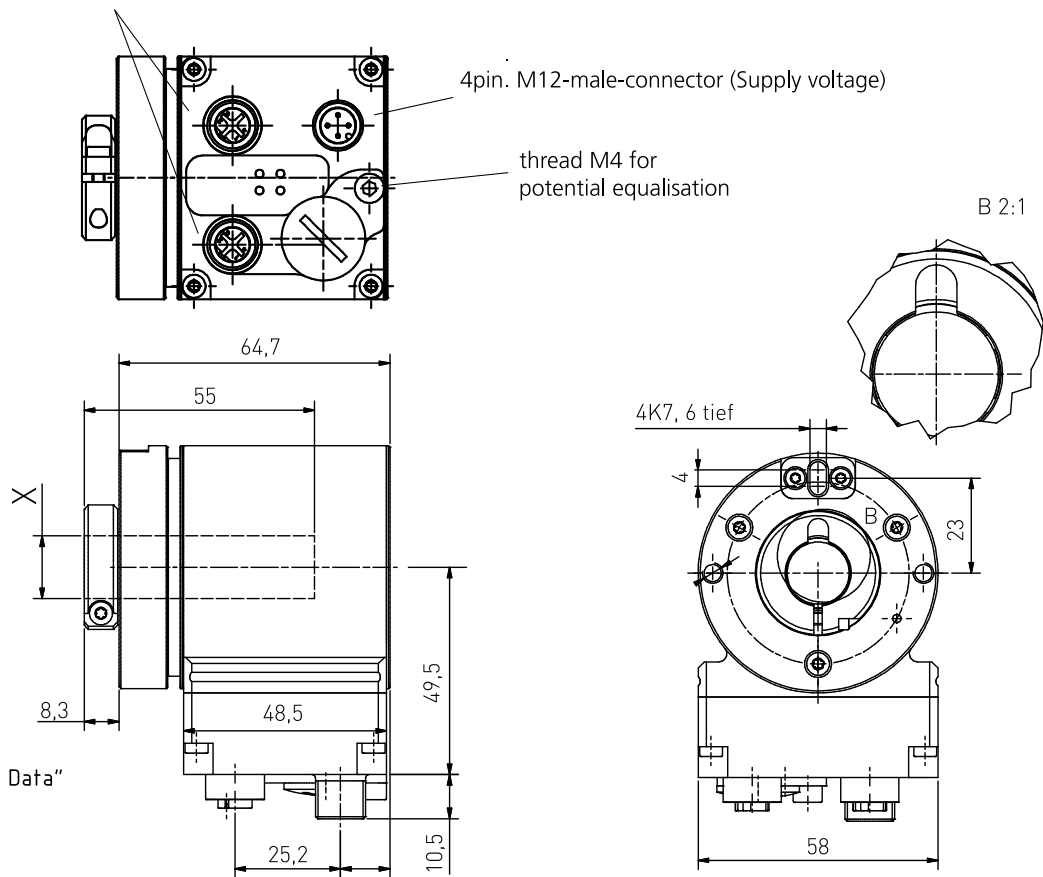
Absolute-Encoder CDS582M+FS, CDS582MM+FS

2x4pin. M12-connector, d-coded (female)

4pin. M12-male-connector (Supply voltage)

thread M4 for potential equalisation

B 2:1



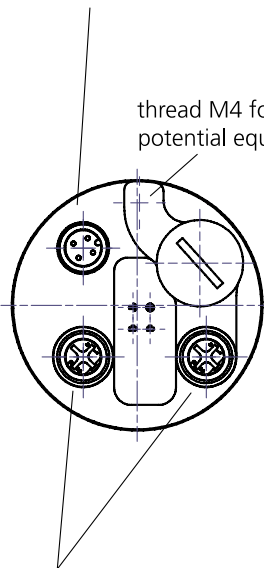
ØX: see "General Data"

## Dimensional Drawings

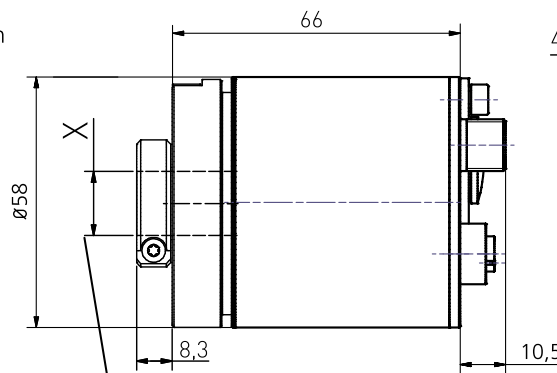
### CDS582+FS AXIAL

Absolute-Encoder CDS582M+FS, CDS582MM+FS

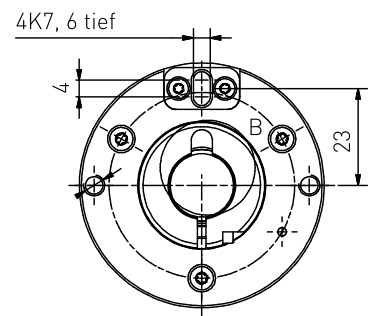
4pin. M12-male-connector (Supply voltage)



2x4pin. M12-connector, d-coded (female)



ØX: see "General Data"



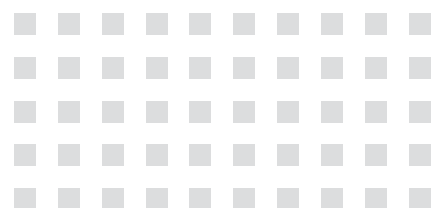


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Subject to technology and design modifications.

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