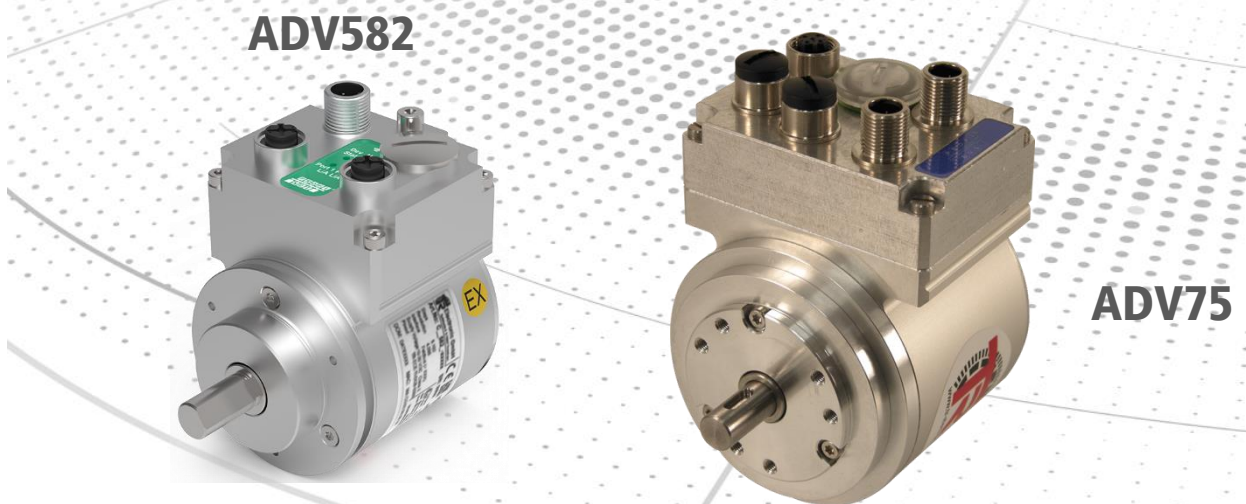
 Measuring systems  
AD\*582\* / AD\*75\*  
with Functional Safety,  
for use in potentially explosive  
atmospheres



Illustrations: exemplary examples

CE

 II 3G

 II 3D

Date of manufacture: DD.MM.YYYY

- [\\_ Basic safety instructions](#)
- [\\_ Intended use](#)
- [\\_ Product description](#)
- [\\_ Explosion protection characteristics](#)
- [\\_ Download: Technical documentation](#)



User Manual

---

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Author:	MÜJ

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### **Text**

*Cursive* or **bold** text represents the title of a document or is used for emphasis.  
`Courier`-text shows text which is visible on the display or screen as well as software menu-selections.  
" < > " refers to keys on your computer keyboard (e.g. <RETURN>).

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**Amendment-index**


<b>Amendment</b>	<b>Date</b>	<b>Index</b>
First edition	04/23/2013	03
Additional indications for the PROFINET variant	04/25/2013	04
PROFIBUS variant: Temperature range of 0...+40 °C to -20...+60 °C modified	02/17/2015	05
EU directives 2014/30/EU (EMC) and 2014/34/EU (ATEX) added	12/21/2015	06
The Declarations of conformity TR-ECE-KE-GB-0322 and TR-ECE-KE-GB-0326 are replaced by common declaration of conformity TR-ECE-KE-GB-0343	07/20/2016	07
Declaration of conformity updated	02/21/2018	08
ADH75: Loss of the dust certification, IP64 -> IP54	04/22/2020	09
- New Equipment protection: "increased safety", e - Declaration of conformity updated	08/17/2020	10
Updating the declaration of conformity	03/02/2022	11
- New: Series 582, Declaration of Conformity AD_582M(M) + FS02/FS03 - Various modifications: Device marking, Intended use, Special conditions, Potential equalization	05/20/2022	12
Change in chapter "Equipotential bonding conductor - Connection". - Cross-section must be at least 4 mm <sup>2</sup> .	12/05/2022	13
Updating the declarations of conformity	09/27/2023	14
Updating the declarations of conformity	09/09/2025	15

## 1 General


This -User manual contains all relevant explosion-safety information and includes the following topics:

- Basic safety instructions
- Intended use
- Product description
- Explosion protection characteristics
- Download: Technical documentation

Since the documentation has a modular structure, this -User manual represents a supplement to the other documentation such as for example product data sheets, dimensional drawings and leaflets etc.

The -User manual is included, but can also be ordered separately.

### 1.1 Scope

This -User manual applies exclusively to measuring systems with **Functional Safety** and with explosion protection housing of type **AD\*582\*-\*\*\*\*\*** or **AD\*75\*-\*\*\*\*\***:

- Gas  II 3G
- Dust  II 3D

The products are labelled with affixed nameplates and are components of a system.

The documentation listed in the safety manuals under the chapter "Other applicable documents" therefore applies together:

**AD\*582:** <https://www.tr-electronic.de/f/TR-ECE-BA-GB-0142>

**AD\*75:** <https://www.tr-electronic.de/f/TR-ECE-BA-GB-0107>

## 1.2 Relevant directives and standards

The explosion protection enclosure is developed, constructed and finished under compliance with the applicable European- or International standards and directives.

EU-Directive 2014/30/EU	Electromagnetic compatibility
EU-Directive 2014/34/EU	Equipment and protective systems intended for use in potentially explosive atmospheres
EN 61000-6-2	EMC: Interference immunity
EN 61000-6-3	EMC: Interference emission
EN 60079-0	Explosive atmospheres: General requirements
EN IEC 60079-7	Explosive atmospheres: Equipment protection by increased safety "e"
DIN EN 60079-14	Explosive atmospheres: Electrical installations design, selection and erection
EN 60079-15	Explosive atmospheres: Equipment protection by type of protection "n"
EN 60079-31	Explosive atmospheres: Equipment dust ignition protection by enclosure "t"
DIN EN 60529	Degrees of protection provided by enclosures (IP code)

### 1.3 Used abbreviations / Terms

AD*75	Explosion protection enclosure with integrated measuring system of the CD*75 series
AD*582	Explosion protection enclosure with integrated measuring system of the CD*585 series
EU	<b>E</b> uropean <b>U</b> nion
EMC	<b>E</b> lectro <b>m</b> agnetic <b>c</b> ompatib <b>l</b> ity
ESD	<b>E</b> lectro <b>S</b> tatic <b>D</b> ischarge
IEC	<b>I</b> nternational <b>E</b> lectro-technical <b>C</b> ommission
VDE	Association for Electrical, Electronic & Information Technologies

### 1.4 Product description

The aluminum explosion protection enclosure with built-in systems and integrated evaluation electronics serves the detection of changes in angle for fixed installations. The changes in angle are transmitted to the evaluation electronics via shaft.

Depending on the supported equipment category(ies), the explosion protection enclosures have the following types of protection

- <sup>1</sup> "n": non-sparking operating equipment (potential gas-explosive atmosphere) or
- <sup>2</sup> "e": increased safety (potential gas-explosive atmosphere) and / or
- "t": protection by the enclosure (potential dust-explosive atmosphere)

Through its manner of construction, the types of ignition protection and additional measures, the enclosures are suitable for the installation of non-ignitable built-in electronics such as the rotary measuring system.

The construction, as well as the interaction of the individual components and the housing with regards to their possibilities for use in potentially explosive areas, are tested by the company TR-Electronic GmbH and confirmed by identification with the ATEX nameplate.

<sup>1</sup> Labeling for devices until approx. 2020

<sup>2</sup> Labeling for devices from approx. 2021

## 2 Basic safety instructions

### 2.1 Symbol- and note definition



means that death or serious injury can occur if the required precautions are not met.

---



means that minor injuries can occur if the required precautions are not met.

---

---

**NOTICE**

means that damage to property can occur if the required precautions are not met.

---



indicates important information or features and application tips for the product used.

---

### 2.2 General dangers with the use of this product

The product, hereafter referred to as **equipment** is manufactured using the latest technology and according to recognized safety regulations. **Nevertheless, non-intended use can cause danger to life and limb of the user or third parties or cause damage to the equipment and other property!**

Only use the equipment for its intended use, with safety- and danger awareness and in compliance with the **Other applicable documents!**

The operator of an electrical system in a potentially explosive environment should keep the equipment in a proper condition, it should be properly operated and monitored and maintenance- as well as repairs are to be performed. This also includes inspection of the equipment for possible transport damage prior to commissioning.

Power connections may not be connected or disconnected with the power engaged. In general, wiring work, as well as opening and closing electrical connections, may only be carried out in a de-energized state.

The equipment may not be used in case of defects, as a basic principle it may not be opened and dust deposits > 5 mm must be removed.

## 2.3 Intended use

The equipment is a fixed-installation device for use in the Ex-Zone 2 (potentially gas-explosive areas, II 3 G, device protection level Gc) and/or 22 (areas with combustible dust II 3 D, device protection level Dc).


The assembly is to be made exclusive by the specifications of the Safety Manual.


The electrical data provided on the nameplates for the device and ATEX, as well as the device category, explosion group, temperature (class) etc. for the place of use are to be observed.

The operating temperature range of the equipment, the maximum values for power consumption, speed and IP protection class are device-specific and must be taken from the "Technical data related to the order number", see chapter Download on page 23.

Some of the equipment is supplied without mating connectors. In this case, the mating connectors selected by the operator must have an EU declaration of conformity in accordance with the ATEX Directive 2014/34/EU.

The selected cable must generally be suitable for the potentially explosive area used and the ambient conditions. For this purpose, the instructions in EN 60079-14 must be observed.

The chosen components must be selected and operated in accordance with the requirements specified in this  user manual and in accordance with the manufacturer's specifications. No new ignition sources may be created.

According to the ATEX directive, the equipment with the mating connector/cable forms an ATEX-compliant assembly. Conformity must therefore be proven separately for the complete assembly after installation. This is given if the operator follows the specifications in this  user manual and those of the component manufacturer.

See chapter " Special conditions for safe use, marking "X" " on page 15.

### **Intended use also includes:**

---

- observation of all instructions contained in the **Other Applicable Documents**,
- observation of the nameplates and possible prohibition- or instruction labels,
- observation of the supplementary documentation e.g. the accompanying product sheet, connector assignments etc.,
- operating of the equipment within the limits indicated in the technical data.

## 2.4 Non-intended use

---

***Risk of death, bodily injury or damage resulting from non-intended use of the equipment!***

**⚠ WARNING**

- The following uses are especially prohibited:
  - In environments with explosive atmospheres whose zones (device categories) are not listed on the nameplate
  - for medical aims
  - commissioning of the equipment if the nameplates are no longer readable or are completely missing.


**NOTICE**

## 2.5 Warranty and liability

The "General terms and conditions" ("Allgemeine Geschäftsbedingungen") of the company TR-Electronic GmbH apply in general. This will be available to the operator with the contract confirmation or –conclusion at the latest. Warranty- or liability claims with regards to personal- and property damage are excluded, if they are the result of one or more of the following causes:

- Non-intended use of the equipment.
- Improper assembly, installation, commissioning, maintenance or dismantling of the equipment.
- Improperly executed work on the equipment by unqualified personnel.
- Operating of the equipment in the presence of technical defects.
- The performance of unauthorized mechanical or electrical modifications of the equipment.
- The performance of unauthorized repairs
- Catastrophic incidents caused by external forces or acts of God.

## 2.6 Organizational measures

- The other applicable documents must always be kept within reach in the equipment's operating location.
- In addition to the other applicable documents, the generally applicable legal regulations and other mandatory directives for work safety, accident prevention and environmental conservation are to be observed and conveyed.
- The applicable national-, site- and system-specific provisions and requirements are to be observed and conveyed.
- The operator has the obligation to point out any special operational features and requirements to the personnel.
- Before starting work, the personnel responsible for work on or with the equipment must have read and understood the -User manual, in particular the chapter on "Basic safety instructions".
- The nameplates and possible affixed prohibition- or instruction labels must be kept in a readable condition.
- Do not perform any mechanical or electrical modifications to the equipment, except those which are specifically described in the other applicable documents.
- Repairs may only be performed by the manufacturer, or by a person or body who carries the manufacturer's authorization.

### 2.7 Personnel selection and -qualification; basic obligations

#### 2.7.1 Electrical installations design, device selection and erection

The project development of electrical systems, the selection of the devices and the installation in potentially explosive atmospheres may only be performed by persons whose training includes instruction in various types of ignition and installation techniques, applicable regulations and prescriptions as well as general principles of the Zone-classification. The persons must have the relevant competence for the type of work to be performed.

The personnel must regularly undergo corresponding further training or courses.

For definitions on the knowledge, expertise and competence of the "responsible persons", "manual workers" and "planners", the IEC 60079-14 or DIN EN 60079-14 standards are to be additionally consulted [suppliers e.g. Beuth Verlag GmbH, VDE-Verlag GmbH].

#### 2.7.2 Inspection, maintenance and repair

The inspection, maintenance and repair of electrical systems in potentially explosive environments may only be performed by experienced personnel who have also gained knowledge on the various types of ignition and installation procedures, the requirements of the IEC / DIN EN 60079-17 standard, relevant national provisions and company regulations for the system as well as on the general principles of the Zone-classification during their training.

Personnel are to undergo appropriate further training or instruction regularly. Proof of the relevant experience and completed training must be available.

For definitions on the knowledge, expertise and competence of the "responsible persons", "expert person with leadership functions" and the "performing personnel", the IEC 60079-17 or DIN EN 60079-17 standards are to be additionally consulted [suppliers e.g. Beuth Verlag (publishers) GmbH, VDE-Verlag GmbH].

### 2.8 First commissioning / Commissioning

Prior to the first commissioning the equipment is to be checked regarding its suitability in the respective zone according to its labeling. The explosion protection-relevant characteristic data, such as the explosion group and temperature class of the hazardous substances, must be evaluated with those on the nameplate. The values indicated on the nameplates are not to be exceeded. With use of the equipment in areas which are potentially explosive because of dust, a deposit of dust on the top-side which is more than 5 mm thick is not permissible. Here the installation of an additional covering may be required in circumstances where the deposit of dust cannot be reliably avoided.

The operational safety of the equipment and the correct functional arrangement of the equipment inside the plant must be checked before commissioning. It may only be used in a clean and undamaged condition.

---

## 2.9 Assembly, installation and dismantling

With installation and operation of the explosion protective equipment, one should consider protection against hazardous environmental influences which limit the intended use of the equipment. This could be protection against aggressive fluids or weather protection for example. During installation, the IEC 60079-14 and DIN EN 60079-14 as well as other national standards and regulations applicable at the installation site are to be adhered to.

The information on the nameplates must be complied with.

The coupling required for the mechanical connection of the shaft to the drive for the solid shaft type must, on the one hand, comply with the given specifications according to the device-specific product data sheet and, in addition, meet the requirements of the defined explosion protection characteristics, starting on page 16. The manufacturer's instructions for installation and operation must be observed.

The supply cable with mating connector or the connecting cable to the equipment must be laid in the hazardous area in such a way that it is protected against damage and is mechanically fail-safe. In the case of connection lines without mating connectors, the individual wires must not be damaged. The maximum connection data on the nameplate must be observed.

The notes in chapter "Special conditions for safe use, marking "X" " on page 15 must be observed.

Metallic housings in potentially explosive atmospheres must be connected to the potential equalization system, see chapter "Equipotential bonding conductor - Connection" on page 18.

Wiring work, opening and closing of electrical connections may only be performed with the power switched off.

### 2.10 Inspection, maintenance and repair

The operator of an electrical system in a potentially explosive environment must keep the equipment in an good condition, operate it properly, monitor it and maintenance and repair work must be performed, also see IEC 60079-17 and DIN EN 60079-17 in this respect.

Maintenance work and defect repairs may only be performed by trained professionals. Before the maintenance or repair, the specified safety precautions are to be observed. The warning notes on the equipment and in the other applicable documents are to be adhered to!

The applicable laws and directives are complied with before recommissioning.

---



- The equipment does not require any maintenance by the operator. Nevertheless, inspections must be performed at regular intervals:
    - Visual inspection
      - of the enclosure for damages
      - of the supply lines for external damages
      - for dust deposits
    - Checking of the connection plug for a tight fit
  
  - In case of damages, the equipment is to be taken out of service immediately and to be repaired by the manufacturer!
-

## 2.11 Special conditions for safe use, marking "X"

The "X" symbol in the labeling of the equipment is used to indicate special application conditions:

The equipment's installation location and -manner are generally to be selected in such a way that it is protected from external mechanical influences and in a way that no function limitations can result. To ensure this, additional design measures may have to be taken.

To avoid electrostatic charges on plastic parts such as the nameplate and plastic housing, high flow speeds of dusts must be excluded when using the equipment in dust explosion hazardous areas and cleaning is only permitted with a damp cleaning rag.

Misappropriations of the equipment as support tread plank, stirrup etc. are prohibited.

### **Type with connectors / requirements - mating connector**


- The selected mating connector must meet the minimum requirements according to the "Explosion protection characteristics", declared from page 16, for gas and dust. The associated EU declaration of conformity must meet the requirements of the ATEX Directive 2014/34/EU and contain the corresponding ATEX marking. The associated certificate and operating instructions of the manufacturer must be observed.
- At least the same IP protection class as the equipment
- The temperature resistance must be 10 °C higher than the specified working temperature of the equipment.
- EMC shield connection
- Number of poles: according to enclosed pin assignment
- All mating connectors must be secured against accidental disconnection through the use of a screw locking device.
- In order to guarantee the IP protection class, unused plug connections must be provided with mating plugs.

### **Requirements - cables**

- Basically, the electrical installations design, selection and erection of electrical plants shall comply with EN 60079-14.
- The cables used shall be suitable for permanent installation and the material used shall be selected in such a way as to comply with local requirements concerning working conditions.
- The cable must be covered with a thermoplastic, duraplastic or elastomeric material. It must be circular and compact. Any embedding or coats must be extruded. Filling agents, if present, must not be hygroscopic; or
- mineralized metal coated with sealing
- The temperature resistance must be 10 °C higher than the specified working temperature of the equipment.
- Unused connection plugs must be provided with mating connectors which are appropriately licensed for the applicable device category. All mating connectors must be secured against accidental disconnection through the use of a screw locking device.

### 3 Explosion protection characteristics

#### 3.1 Ex-labeling, Gas

	II	3G	Ex	ec nAc	II	C	T4 T5 T6	Gc	X	
										Special conditions
										Device protection level (IEC/CENELEC)
										Temperature class (IEC/CENELEC)
										Explosion group (IEC/CENELEC)
										Group (IEC/CENELEC)
										Ignition protection type (IEC/CENELEC)
										Labeling (IEC/CENELEC)
										Device category (ATEX)
										Device group (ATEX)
										Ex-labeling (ATEX)

**Device group**..... **II**: on the surface applications

**Device category**..... **3G**: Zone 2  
adequate safety with normal operation

**Ignition protection type** ..... **nAc**: (until approx. 2020) non-sparking equipment  
Ex-Atmosphere cannot be ignited by heat or electric spark under normal conditions  
**ec**: (from approx. 2021) increased safety  
additional measures during normal operation to prevent ignition of the Ex-Atmosphere by temperature and sparks

**Group**..... **II**: potentially gas-explosive areas

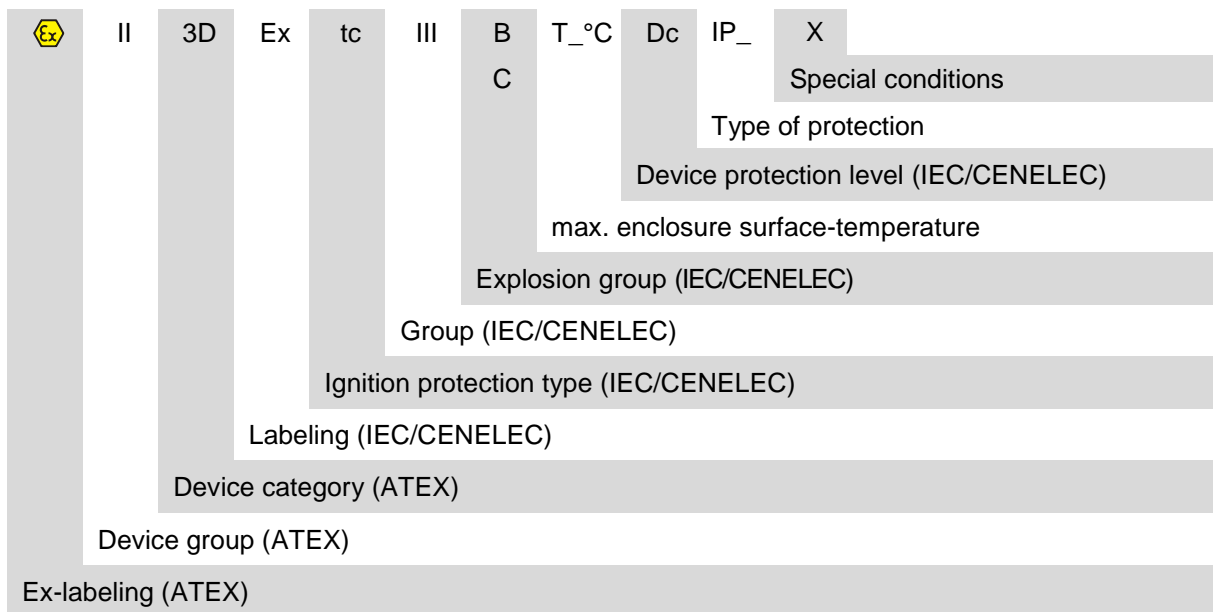
**Explosion group**..... **C**: typical gas: Hydrogen, acetylene

**Temperature class**..... **T<sub>4</sub>**: max. enclosure surface-temperature:  
T4: ≤ 135 °C  
T5: ≤ 100 °C  
T6: ≤ 85 °C  
see nameplate

**Device protection level** ..... **Gc**: Zone 2  
Sufficient safety during normal operation

**Special conditions**..... **X**: see chapter 2.11 on page 15

### 3.2 Ex-labeling, Dust



- Device group**..... **II**: on the surface applications
- Device category**..... **3D**: Zone 22  
adequate safety with normal operation
- Ignition protection type** ..... **tc**: Protection by enclosure  
with adherence to the type of protection and within the  
surface temperature limits, Ex-atmosphere cannot be  
ignited
- Group**..... **III**: potentially dust-explosive areas
- Explosion group** (see nameplate)..... Type of dust
  - B**: ..... non-conductive dust
  - C**: ..... conductive dust
- Temperature**..... **T\_°C**: max. enclosure surface-temperature in °C  
see nameplate
- Device protection level** ..... **Dc**: Zone 22  
Sufficient safety during normal operation
- 3 Protection class** ..... **IP\_**: Degrees of protection provided by enclosures  
according to DIN EN 60529  
see nameplate
- Special conditions**..... **X**: see chapter 2.11 on page 15

<sup>3</sup> Observe instructions for safe use, see chapter 2.11 on page 15

### 4 4 Enclosure materials

#### Aluminum design

Enclosure material..... Al Mg Si 0.5 F22

Flange material..... EN AW-AlCu6BiPb

**Shaft, stainless steel** ..... WN 1.4305, corrosion resistant

### 5 Equipotential bonding conductor - Connection

- All **metal housings** of electrical equipment and **other conductive parts** must be connected to the **equipotential bonding system**.
- The discharge can take place via
  - **external ground terminal** or
  - secured, **metallic contact** with **construction parts**, which are connected to the **potential equalization**
- The cross-section of the compensating conductor must be at least 4 mm<sup>2</sup>
- The connecting parts must be effectively protected against **corrosion** (e.g. intermediate piece made of steel for contacts made of light metal)
- The **contact pressure** must be maintained permanently (no loosening or twisting!)

The position of the connection is dependent on the type series and is indicated therefore in the custom-designed dimension drawings, see chapter Download on page 23.

## 6 EU declaration of conformities

### 6.1 AD\_75



#### EC / EU Declaration of Conformity

The Rotative Measuring System Series **ADx75M SIL3 with Explosion Protection Enclosure**

Type: ADV75M, ADH75M  
Order-No.: ADV75M-xxxxx, ADH75M-xxxxx

was developed, designed and manufactured to comply with the EU-Directives

Electromagnetic Compatibility (EMC)	<b>2014/30/EU</b>	(L 96/79)
Machinery Directive	<b>2006/42/EC</b>	(L 157/24)
Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)	<b>2014/34/EU</b>	(L 96/309)
Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)	<b>2011/65/EU</b>	(L 174/88)

under the sole responsibility of

**TR Electronic GmbH**  
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Tel.: +49 7425/228-0  
Fax: +49 7425/228-33  
Germany

The following harmonized standards were applied:

EN 61000-6-2:2005/AC:2005 with increased test standards: DIN EN 61326-3-1:2018	Generic standards - Electromagnetic compatibility, Immunity (Industrial environments)
EN 61000-6-3:2007/A1:2011	Generic standards - Electromagnetic compatibility, Emissions (Commercial environments)
EN 61800-5-2:2007	Adjustable speed electrical power drive systems Safety requirements - Functional
EN ISO 13849-1:2015	Safety of machinery - Safety-related parts of control systems General principles for design
EN 60204-1:2018 (in extracts)	Safety of machinery - Electrical equipment of machines General requirements
EN IEC 62061:2021	Safety of machinery - Functional safety of safety-related control systems
EN ISO 20607:2019	Safety of machinery - Instruction handbook - General drafting principles
EN IEC 60079-0:2018	Explosive atmospheres Part 0: Equipment - General requirements
EN IEC 60079-7:2015/A1:2018	Explosive atmospheres Part 7: Equipment protection by increased safety "e"
EN 60079-15:2010	Explosive atmospheres Part 15: Equipment protection by type of protection "n"
EN 60079-31:2014	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances



**Other applied standards:**

DIN EN 61508 Part 1-7: 2011	Functional safety of electrical/electronic/programmable electronic safety-related systems
DIN EN IEC 60079-14:2021	Explosive atmospheres Part 14: Electrical installations design, selection and erection
DIN EN 60529: 2014	Degrees of protection provided by enclosures (IP code)

The products are marked additionally with the following characteristics on the ATEX name plate:



The EC type examination and certification according to the EC machinery directive as Logic Unit For Safety Functions was carried out by the notified body:

**NB0035, TÜV Rheinland Industrie Service GmbH,**  
Alboinstr. 56,  
12103 Berlin  
Certificate-No.: 01/205/5518.00/16

**Authorized to compile the technical file:**

TR Electronic GmbH, Eglshalde 6, 78647 Trossingen, Germany

Trossingen, 09/22/2023

Mr. Klaus Tessari, CEO

## 6.2 AD\_582



### EC / EU Declaration of Conformity

The Rotative Measuring Systems **AD\_582M(M) + FS02, AD\_582M(M) + FS03**

Type: ADV582M, ADS582M, ADH582M  
 Order-No.: ADV582M-xxxxx, ADS582M-xxxxx, ADH582M-xxxxx

was developed, designed and manufactured to comply with the EU-Directives

Electromagnetic Compatibility (EMC)	<b>2014/30/EU</b> (L 96/79)
Machinery Directive	<b>2006/42/EC</b> (L 157/24)
Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX)	<b>2014/34/EU</b> (L 96/309)
Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)	<b>2011/65/EU</b> (L 174/88)

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EN 61000-6-3:2007/A1:2011	Generic standards - Electromagnetic compatibility, Emissions (Commercial environments)
EN 61800-5-2:2007	Adjustable speed electrical power drive systems Safety requirements - Functional
EN ISO 13849-1:2023	Safety of machinery - Safety-related parts of control systems General principles for design
EN 60204-1:2018 (in extracts)	Safety of machinery - Electrical equipment of machines General requirements
EN IEC 62061:2021	Safety of machinery - Functional safety of safety-related control systems
EN ISO 20607:2019	Safety of machinery - Instruction handbook - General drafting principles
EN IEC 60079-0:2018	Explosive atmospheres Part 0: Equipment - General requirements
EN IEC 60079-7:2015/A1:2018	Explosive atmospheres Part 7: Equipment protection by increased safety "e"
EN 60079-31:2014	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances



### Other applied standards:

DIN EN 61508 Part 1-7:2011	Functional safety of electrical/electronic/programmable electronic safety-related systems
DIN EN 61800-5-2:2017-11	Adjustable speed electrical power drive systems Safety requirements - Functional
DIN EN IEC 61800-5-3:2024-09	Adjustable speed electrical power drive systems Safety requirements – Functional, electrical and environmental requirements
DIN EN IEC 60079-14:2021	Explosive atmospheres Part 14: Electrical installations design, selection and erection
DIN EN 60529:2014	Degrees of protection provided by enclosures (IP code)

The products are marked additionally with the following characteristics on the ATEX name plate:

II 3G Ex ec IIC T6...T4 Gc X and /or II 3D Ex tc IIIB/IIIC T\_°C Dc X

The EU type examination and certification according to the machinery directive as Logic Unit For Safety Functions was carried out by the notified body:

**NB0035, TÜV Rheinland Industrie Service GmbH,**  
Alboinstr. 56,  
12103 Berlin  
Certificate-No. AD\_582M(M) + FS02: 01/205/5717.01/23  
Certificate-No. AD\_582M(M) + FS03: 01/205/5713.01/23

### Authorized to compile the technical file:

TR Electronic GmbH, Eglisshalde 6, 78647 Trossingen, Germany

Trossingen, 09/08/2025

Mr. Klaus Tessari, CEO

## 7 Download

### 7.1 Technical documents associated with the order number

- [www.tr-electronic.com/product-selector](http://www.tr-electronic.com/product-selector)
- Enter the desired order number, e.g. AEH80M-00001, into the searching window and confirm with the <RETURN> key:

The screenshot shows the TR-Electronic website interface. At the top left is the TR-Electronic logo, and at the top right are language options for English and Deutsch. Below the logo is a navigation menu with links for Products, Applications, News, Service, and Company. A search bar is located on the right side of the navigation bar. The main content area is titled 'Home > Product selector'. On the left, there is a filter sidebar with sections for 'Type' (set to 'all'), 'Interface' (set to 'all'), and 'Search' (containing the text 'AEH80M-00001'). The main product information section displays 'Datasheet to AEH80M\*8192/4096 PB 24H7/N' and a 'Stock photo' of the absolute encoder. To the right of the product image is a 'Field-Bus' icon and a 'Features' list: Customer-specific solutions, Ex-Protection Zone 2/22, Flexible programming, and Shaft-Ø up to 25 mm. Below the product image are expandable sections for 'Technical data for product AEH80M-00001', 'Advanced data for product Absolute-Encoder AEH80 - PB', 'General environmental conditions Absolute-Encoder AEH80 - PB', and 'Downloads'. At the bottom of the page, there is a footer with the copyright notice '© TR-Electronic GmbH' and links for 'Sitemap | Contact | AGB | Imprint'.