



## Note on instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility. It is essential that they have an exact knowledge of the applicable rules and regulations.

The instructions provide a summary of the most important safety measures and must be read by everyone working with the product so that they will be familiar with the correct handling of the product.

The instructions have to be kept for future reference and must be available throughout the expected life of the product.

## Description

The measuring, control and switchgear combinations are available for use in zone 2 (type A7-31-...-.../....) or with "t protection by enclosure" for use in zone 22 (type A7-3S-...-.../....). They are available either as one enclosure or several connected enclosures.

Depending on the specification and number of equipment, various enclosure types and sizes are available. The control stations will be equipped according to the individual requirements with switches, signal lamps, rail-mounted terminals, fuses, bus modules etc. In the measuring, control and switchgear combinations with "t protection by enclosure" industrial serial products can be installed, too.

The components are mounted either on DIN rails or installed on the front lid.

The explosiveness of the individual components and the enclosures is tested by BARTEC and confirmed by the marking II 3 G Ex d e ... and/or II 3 D Ex tc ... on the type label on the measuring, control and switchgear combination. If the measuring, control and switchgear combinations contain intrinsically safe circuits or Ex i components, the electrical limits that are decisive for "intrinsic safety" (see accompanying documents) must be adhered to.

## Explosion protection

### Maximum Ex type of protection

Depending on the installed components; observe the specifications on the type label.

**Ex** II 3 G  
 Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic  
 [ic] IIA, IIB, IIC T6, T5, T4 Gc  
 II 3(2) G  
 Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic  
 [ib Gb] IIA, IIB, IIC T6, T5, T4 Gc  
 II 3(1) G  
 Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic  
 [ia Ga] IIA, IIB, IIC T6, T5, T4 Gc

**Ex** II 3 D  
 Ex tc [ic] IIIA, IIIB, IIIC  
 T80 °C, T100 °C Dc  
 II 3(2) D  
 Ex tc [ib Db] IIIA, IIIB, IIIC  
 T80 °C, T100 °C Dc  
 II 3(1) D  
 Ex tc [ia Da] IIIA, IIIB, IIIC  
 T80 °C, T100 °C Dc



### Ambient temperature ranges

Depending on the installed components; observe the specifications on the type label.

-55 °C to +80 °C  
(-67 °F to +176 °F)

### Approved for zones

2 and 22

### Components

Follow the components manufacturer's mounting instructions and safety instructions.

### Other applicable documents

- Circuit diagram
- Mounting instructions/operating instructions for the installed components
- Delivery note

The retention of these documents is mandatory.

## Technical data

### Electrical data

- Rated voltage: up to 1000 V
- Rated current/installation elements: max. 160 A
- Rated cross-section
  - for installation elements: max. 50 mm<sup>2</sup>
  - for rail-mounted and connecting terminals: max. 120 mm<sup>2</sup>

### Protection class

Max. IP66 (EN 60529)

### Mechanical strength

Impact energy: max. 7 Nm

### Enclosure material

Aluminium:

- Type A7-3.01-.../....
- Type A7-3.02-.../....

Polyester black:

- Type A7-3.03-.../....
- Type A7-3.05-.../....
- Type A7-3.09-.../....
- Type A7-3.10-.../....

Stainless steel 1.4301 (304):

- Type A7-3.11-.../....
- Type A7-3.12-.../....
- Type A7-3.13-.../....
- Type A7-3.14-.../....
- Type A7-3.30-.../....
- Type A7-3.31-.../....
- Type A7-3.34-.../....
- Type A7-3.35-.../....

Stainless steel 1.4404 (316L):

- Type A7-3.32-.../....
- Type A7-3.33-.../....
- Type A7-3.36-.../....
- Type A7-3.37-.../....
- Type A7-3.92-.../....
- Type A7-3.93-.../....
- Type A7-3.94-.../....
- Type A7-3.95-.../....

Measuring, control and switchgear combinations that are intended exclusively for use in areas with inflammable types of dust have the following deviating markings:

Type A7-3S-...-.../....

## Safety Instructions

The measuring, control and switchgear combination may be used within the specified temperature class and the temperature range indicated for it (see type label). The measuring, control and switchgear combination is only suitable for use in Zone 2 and 22.

The measuring, control and switchgear combination may be operated only if it is clean and not damaged in any way. Dust deposits > 5mm (> 0.2 in) must be removed.

Utilization in areas other than those specified or the modification of the product by anyone other than the manufacturer is not permitted and will exempt BARTEC from liability for defects and any further liability.

The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be observed.

When using electrical systems the relevant regulations on installation and operation must be complied with. The specifications on the type label must be observed.

Observe the applicable laws and directives when commissioning or restarting operation. Always follow the safety instructions on the operating equipment.

## Marking

Particularly important points in these instructions are marked with a symbol:

### DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### NOTICE

NOTICE is used to address practices not related to personal injury.

### Note

*Important instructions and information on effective, economical and environmentally compatible handling.*

## Standards conformed to

Depending on the installed components.

EN 60079-0:2012

EN 60079-1:2007

EN 60079-5:2007

EN 60079-7:2007

EN 60079-11:2012

EN 60079-15:2010

EN 60079-18:2009

EN 60079-28:2007

EN 60079-31:2009

as well as

EN 60204-1:2006

EN 61439-1:2011

EN 62208:2011

EN 60445:2010

EN 60529:1991 + A1:2000

### Note

*For further industrial standards for the installed parts, see separate operational instructions.*

## Transport, Storage

### CAUTION

**Risk of injury from heavy loads.**

- Use suitable carrying aids or means of transport (e.g. lift trucks) with an adequate weight bearing capacity.
- Make sure that loads cannot tilt or slide off.

### NOTICE

**Damage to the measuring, control and switchgear combination through incorrect transport or incorrect storage.**

- The measuring, control and switchgear combination must be transported in its original packaging, be secured against vibrations, handled carefully and not allowed to fall.
- Store the measuring, control and switchgear combination in its original packaging in a dry place.

## Assembly, Installation, and Commissioning

### WARNING

**Risk of serious injury due to incorrect proceedings.**

- Only qualified personnel who are authorized and trained to assemble electrical components in hazardous (potentially explosive) areas may do any of the assembly, disassembly, installation and commissioning work.
- The relevant installation and operating regulations must be observed when setting up or operating explosion-proof electric systems.
- Follow the components mounting instructions/operating instructions.
- Always disconnect the measuring, control and switchgear combination from the voltage supply before starting to work.

## Assembly / Disassembly

### DANGER

**Death or risk of injury due to the absence of a PE conductor connection.**

- Metallic enclosures in hazardous areas require equipotential bonding with at least 4 mm<sup>2</sup>.
- PE conductor connections must be secured against self-loosening.

Check when assembling:

- Mount the measuring, control and switchgear combination with resistance to torsion on an even supporting surface.
- It is preferable to mount the measuring, control and switchgear combination in a vertical position.

### Note

*For enclosures set up outdoors, it may be necessary to implement measures to ensure operation in accordance with the intended purpose (e.g. shelter from the rain or an outer enclosure with a suitable protection class).*

## Installation

### DANGER

**Death or serious injury due to improper use.**

- Extensions or modifications to the measuring, control and switchgear combination are only permissible if the manufacturer's approval is obtained first.
- The IEC/EN60079-14 must be observed.

When connecting cables and conductors to the operating equipment, use cable entries that are suitable for the respective types of cables and conductors. They must contain a suitable sealing element so that a rating of at least IP 54 is attained.

Metallic cable entries must be connected to the earthing system.

For plastic enclosures BARTEC's earth-Loc or the approval-compliant earth plates can be used for that purpose.

Unused cable entry holes must be sealed with stopping plugs (at least IP 54).

Take care when connecting conductors:

- Always use suitable crimping tools when crimping the wire-end ferrules to ensure a consistent quality of pressing each time.
- Take care not to damage the individual wires.
- Tighten all terminal points (including those not in use) securely.

**i** Note

*If necessary, safety temperature limiters (STB) are installed in measuring, control and switchgear combinations. The normally open contact of the STB is wired on the STB terminal block.*

*The normally open contact that is wired on the STB terminal block has to be connected with the power supply of the measuring, control and switchgear combination in a way that the power supply is safely switched off (i.e. the measuring, control and switchgear combination is switched voltage free).*

*Once the temperature drops, the STB can be unlocked manually, see the Operating Instructions for the "Ex-d temperature switch 07-6D...-.../.....".*

### Commissioning

Before commissioning, check that:

- the measuring, control and switchgear combination has been installed in compliance with regulations
- the measuring, control and switchgear combination is not damaged
- the connection has been established properly
- the cables have been laid correctly
- all screws have been tightened securely
- the device functions perfectly

### Operation

**⚠ DANGER**

**Death or serious injury through improper use.**

- The measuring, control and switchgear combination may be operated only within the technical limits that apply to it (see page 1).

### Maintenance and Fault Clearance

**⚠ WARNING**

**Risk of injury due to incorrect proceedings.**

- Only authorized qualified personnel are allowed to do any of the work relating to maintenance and fault clearance.
- IEC/EN 60079-17 must be observed.
- Always disconnect the measuring, control and switchgear combination from the voltage supply before starting to work.

### Maintenance

The owner/managing operator of the measuring, control and switchgear combination must keep it in good condition, operate it correctly, monitor it and clean it regularly.

The owner/managing operator must schedule maintenance intervals which will suit the respective conditions of use.

- Check sealings for effectiveness.
- Replace old or damaged sealings with new original seals.
- Check that the connecting terminals and cable & conductor entries are secure.

**i** Note

*In the course of maintenance particular attention must be paid to checking that the parts essential for the type of protection and for proper functioning are in good condition.*

### Fault Clearance

The measuring, control and switchgear combination is defective if one of the components does not function any longer.

In this case the defective component must be replaced or repaired with original parts.

**i** Note

*Follow the components mounting instructions/operating instructions to replace or repair the components.*

### Accessories, Spare Parts

See BARTEC catalogue.

### Disposal

The components in the measuring, control and switchgear combination contain metal and plastic parts.

Therefore the statutory requirements for disposing of electronic scrap must be observed (e.g. disposal by an approved disposal company).

### Service Address

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Erklärung der Konformität  
Declaration of Conformity  
Attestation de conformité

N° A1-3000-7C0001\_A

**BARTEC**BARTEC GmbH  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
Germany

Wir	We	Nous
<b>BARTEC GmbH,</b>		
erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
<b>Schaltgeräte- kombination</b>	<b>Measuring, Control and Switchgear com- bination</b>	<b>Ensemble d'appareillage de connexion et de commande</b>

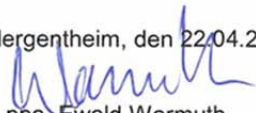
**Typ A7-3...-.../....**

auf das sich diese Erklärung bezieht den Anforderungen der folgenden <b>Richtlinien (RL)</b> entspricht	to which this declaration relates is in accordance with the provision of the following <b>directives (D)</b>	se référant à cette attestation correspond aux dispositions des <b>directives (D)</b> suivantes
<b>ATEX-Richtlinie 94/9/EG</b>	<b>ATEX-Directive 94/9/EC</b>	<b>ATEX-Directive 94/9/CE</b>
<b>EMV-Richtlinie 2004/108/EG</b>	<b>EMC-Directive 2004/108/EC</b>	<b>CEM-Directive 2004/108/CE.</b>
und mit folgenden Normen oder normativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou documents normatifs ci-dessous
<b>EN 60079-0:2012</b>	<b>EN 60079-11:2012</b>	<b>EN 60204-1:2006</b>
<b>EN 60079-1:2007</b>	<b>EN 60079-15:2010</b>	<b>EN 61439-1:2011</b>
<b>EN 60079-5:2007</b>	<b>EN 60079-18:2009</b>	<b>EN 62208:2011</b>
<b>EN 60079-7:2007</b>	<b>EN 60079-28:2007</b>	<b>EN 60445:2010</b>
	<b>EN 60079-31:2009</b>	<b>EN 60529:1991 + A1:2000</b>

<b>Kennzeichnung</b>	<b>Marking</b>	<b>Marquage</b>
II 3G Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic [ic] IIA, IIB, IIC T6, T5, T4 Gc		
II 3(2)G Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic [ib Gb] IIA, IIB, IIC T6, T5, T4 Gc		
II 3(1)G Ex d e nA nC ma/mb/mc op is op sh q ia/ib/ic [ia Ga] IIA, IIB, IIC T6, T5, T4 Gc		
II 3 D Ex tc [ic] IIIA, IIIB, IIIC T80 °C, T100 °C Dc		
II 3(2) D Ex tc [ib Db] IIIA, IIIB, IIIC T80 °C, T100 °C Dc		
II 3(1) D Ex tc [ia Da] IIIA, IIIB, IIIC T80 °C, T100 °C Dc		
<b>-55°C ≤ Ta ≤ +75/80°C</b>		
(abhängig von den eingebauten Komponenten)	(depending on the installed components)	(il dépend des composants)
<b>Verfahren der internen Fertigungskontrolle</b>	<b>Procedure of Internal Control of Production</b>	<b>Procédure de contrôle interne de fabrication</b>



Bad Mergentheim, den 22.04.2014

  
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 Geschäftsleitung / General Manager

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