

## E1. GENERAL

For explosion-proof equipment according to directive 2014/34/EU (ATEX directive) additionally instructions to the recommendations of the general operating and assembly instruction are valid to ensure that the equipment operates properly in the prescribed way and to guarantee the safe operation of the equipment.

The definition of the following safety-relevant terms DANGER, WARNING, CAUTION and NOTE are to be explained in passage 2 of the general operating and assembly instruction.

## E2. USAGE

### Equipment with approval according to BVS 03 ATEX E 390

#### Equipment protection by intrinsic safety „i“

The versions of the equipment mentioned above are particularly designed for the employment in firedamp-endangered mining, which can be endangered by methane gas (category I instruments) and for the employment in areas with potentially explosive gas or dust atmospheres, exceptionally firedamp-endangered mining (category II and III instruments).

### Equipment with approval according to BVS 10 ATEX E 027

#### Equipment protection by intrinsic safety „i“

The versions of the equipment mentioned above are particularly designed for the employment in firedamp-endangered mining, which can be endangered by methane gas (category I instruments).

### Equipment with approval according to PTB 04 ATEX 1072

#### Equipment protection by flameproof enclosures „d“

The versions of the equipment mentioned above are particularly designed for the employment in areas with potentially explosive gas atmospheres, exceptionally firedamp-endangered mining (category II instruments).

- **NOTE!** Each above-mentioned equipment has to be installed according to safety standards for pipeline construction and plant engineering. It is to pay attention to proper grounding!
- **NOTE!** The connecting cables must be protected against mechanical damage!
- **NOTE!** Each explosion-proof equipment will be delivered with the appropriate data sheet and the EC-type examination certificate.
- **NOTE!** If the above-mentioned equipment is part of other equipments, which contains still different electrical electric circuits, then the complete equipment must be assessed by the requirements of the concerning standards (e.g. EN 60079-11) in the valid version of the standard.

**NOTE!** Intrinsic safe electric systems will be marked in light-blue colour. This marking is advisable for all intrinsic safe cables and parts to avoid mistakes and/or combinations with non intrinsic safe systems.

Examples: Cables, wires, conduits, connecting terminals, connection boxes, cable glands, etc. .

- **NOTE!** The maximum cable length for intrinsic safe equipment is 5 m.
- **NOTE!** The ambient temperature range for intrinsic safe equipment is  $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$ . The employment in other ambient temperature ranges is not permitted.
- **CAUTION!** Connections between intrinsic safe and non intrinsic safe systems is not allowed. The employment of an ex-certified amplifier will be advised for intrinsic safe equipment.
- **DANGER!** The maximum medium temperatures of the instruments are specified in the data sheets. Higher temperatures are not allowed, either temporary. Due to the associated hot surfaces a potentially ignition source can arise.
- **DANGER!** Layers, deposits and piling ups of inflammable dust can represent a possible ignition source in connection with hot surfaces. It is in the responsibility of the operator to furnish the cleaning and maintenance periods of dust explosion-endangered plants that no dust deposits can dispose.

- **NOTE!** The maximally permissible electrical data of the above-mentioned equipment has to be kept. An exceeding of these values is not allowed.
- **DANGER!** An electrical overload of an explosion-proof equipment can lead to strongly increased heat development and thus to the development of a potentially ignition source.
- **CAUTION!** Explosion-proof equipment may be used only for the indicated medium.
- **DANGER!** Intensive charging processes are not permitted on the type plates.

## E3. TECHNICAL DATA

In addition to the technical data specified in the data sheets and the EC-type examination certificate of each instrument, the further following data apply to above-mentioned operating units:

<b>Piston inline type</b>	(e.g. Type A-H1.1-...):
Working pressure:	belongs to material and nominal diameter (see datasheet)
Medium temperature:	120°C
Protection grade:	IP 65 or IP 66
<b>Valve type</b>	(e.g. Type A-V...-...):
Working pressure:	belongs to material and nominal diameter (see datasheet)
Medium temperature:	90°C (Type A-V2, A-V3) or 120°C (Type A-V1)
Protection grade:	IP 65
<b>Paddle or float type</b>	(e.g. Type A-U1-...):
Working pressure:	25 bar
Medium temperature:	110°C
Protection grade:	IP 65

## E4. AREA OF APPLICATION

The safe operation of explosion-proof equipment depends not only by the equipment itself. It also depends on the handled materials and their use as well as the surrounding atmosphere. The operator should consider with the selection of the equipment how and for which the devices should be supposed. From the view of the operator the used devices, protective systems and components of the different categories can be placed like in the following table:

Zone	Category of instrument	If designed for
0	1G	Gas/Air mixture resp. Steam/Air mixture resp. Fog
1	1G or 2G	
2	1G or 2G or 3G	
20	1D	Dust/Air mixture
21	1D or 2D	
22	1D or 2 D or 3D	

Origin: EN 1127-1, annex B, table B.2.

## E5. EQUIPMENT WITH OPTIONAL ACCESSORY

### Equipment with special accessory

Devices, where a danger of ignition cannot be avoided by the equipment design, are marked with a caution label where safety precautions which has to be used with the equipment are mentioned.

### Equipment with lateral indication

The devices may not be cleaned within potentially explosive atmospheres, otherwise an ignition source can result by electrostatic loading. The devices are marked with a caution label.

## E6. DEFECTIVE EQUIPMENT

Defective devices should be replaced immediately and be sent back to the manufacturer for a failure analysis.