

# SIEMENS

## SIMATIC

### Distributed I/O

### Distributed I/O device 6DL2804-xxxxx

#### Hardware Installation Manual

Introduction

1

Safety information

2

Description

3

Mounting

4

Maintenance and servicing

5

Technical specifications

6

Ground points in the enclosure

7

Dimension drawings

8

ESD Guidelines

9




Service and support

10

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
indicates that property damage can result if proper precautions are not taken.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

 <b>WARNING</b>
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

### Trademarks

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### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

# Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>5</b>
1.1	Purpose of this documentation .....	5
1.2	History .....	5
<b>2</b>	<b>Safety information .....</b>	<b>7</b>
2.1	General information .....	7
2.2	Laws and directives .....	7
2.3	Qualified personnel .....	7
2.4	Measures .....	8
<b>3</b>	<b>Description.....</b>	<b>9</b>
3.1	Overview .....	9
3.2	Area of application .....	9
3.3	Product features.....	10
3.4	Structure of the type designation .....	11
3.5	Design of enclosure .....	12
3.6	Details of the enclosure .....	15
<b>4</b>	<b>Mounting.....</b>	<b>19</b>
4.1	Transport and storage.....	20
4.2	Mounting the enclosure.....	20
4.3	Installing the enclosure outdoors .....	22
4.4	Optional installation components .....	23
4.5	Use of I/O device at temperatures down to -40 °C .....	24
<b>5</b>	<b>Maintenance and servicing.....</b>	<b>27</b>
<b>6</b>	<b>Technical specifications .....</b>	<b>29</b>
<b>7</b>	<b>Ground points in the enclosure.....</b>	<b>33</b>
<b>8</b>	<b>Dimension drawings.....</b>	<b>35</b>
8.1	Installation: ET200iSP components .....	35
8.2	Installation: Heating .....	37
8.3	Installation: FO conductor .....	38
<b>9</b>	<b>ESD Guidelines .....</b>	<b>39</b>
<b>10</b>	<b>Service and support .....</b>	<b>41</b>
	<b>Index.....</b>	<b>43</b>

## Tables

Table 6- 1	Technical specifications 6DL2804-xxDxx / xxExx / xxFxx / xxGxx .....	29
Table 6- 2	Technical specifications 6DL2804-xMDxx / xMExx .....	30
Table 6- 3	Technical specifications 6DL2804-xxKxx / xxTxx / xxUxx .....	31

## Figures

Figure 3-1	Standard enclosure 6DL2804-0xD...Gxx .....	12
Figure 3-2	Standard enclosure 6DL2804-0xH...Wxx, view 1 .....	13
Figure 3-3	Standard enclosure 6DL2804-0xH...Wxx, view 2 .....	14
Figure 4-1	Drilling template for securing the device .....	20
Figure 4-2	Temperature response with 100 W heater for 6DL2804-xxDxx / -xxExx.....	24
Figure 4-3	Temperature response with 200 W heater for 6DL2804-xxKxx / -xxUxx.....	25
Figure 7-1	Fixed and detachable connections to ground and equipotential bonding rail.....	33
Figure 8-1	Distributed I/O device 6DL2804-xxD...Gxx with installation of ET 200iSP .....	35
Figure 8-2	Distributed I/O device 6DL2804-xxH...Wxx with installation of ET200iSP .....	36
Figure 8-3	Distributed I/O device with installation of heating .....	37
Figure 8-4	Distributed I/O device with installation of FO coupler: single and redundant designs.....	38
Figure 9-1	Electrostatic voltages on an operator.....	40



# Introduction

## 1.1 Purpose of this documentation

This manual contains all the information that you will require to install and use the device.

It is intended for persons who install the device mechanically, connect it electrically, set parameters and commission it, as well as for service and maintenance technicians.

## 1.2 History

The most important changes in the documentation compared with the previous edition are shown in the following table.

Edition	Comment
01/2008	First edition
08/2009	<ul style="list-style-type: none"><li>• Troubleshooting</li><li>• New functions (see technical specifications)</li><li>• Update owing to new standards</li></ul>
03/2014	Content changes: Safety instructions, enclosure



## Safety information

### 2.1 General information

This device left the factory in a perfect state with regard to safety. To maintain this status and to ensure safe operation of the device, note and follow the instructions and warnings in this manual.

### 2.2 Laws and directives

Observe the provisions of the test certification valid for your country.

#### Electrical connection in potentially explosive atmospheres

When making electrical connections, observe the national regulations and laws for hazardous areas valid for your country. In Germany, for example, the following apply:

- Ordinance on Industrial Safety and Health
- Standard relating to the installation of electrical systems in hazardous areas DIN EN 60079-14 (previously VDE 0165, T1)

### 2.3 Qualified personnel

Qualified personnel are people who are familiar with the installation, mounting, commissioning, and operation of the product. These people have the following qualifications:

- They are authorized, trained or instructed in operating and maintaining devices and systems according to the safety regulations for electrical circuits, high pressures and aggressive as well as dangerous media.
- For devices intended for use in explosive atmospheres: They are authorized, trained, or instructed in working on electrical circuits for systems in potentially explosive atmospheres.
- They are trained or instructed in maintenance and use of appropriate safety equipment according to the safety regulations.
- They should be trained in first aid.

## 2.4 Measures

In the interest of safety, observe the following precautionary measures:

### WARNING

#### Type of protection "Flameproof enclosure d"

Devices with "pressure-resistant encapsulation" protection may only be opened when the power has been disconnected.

#### Type of protection "Intrinsic safety i"

"Intrinsically-safe" devices lose their certification as soon as they are operated on circuits which do not correspond with the test certification valid in your country.

#### Type of protection "Increased safety e"

Devices with the type of protection "Increased safety" must not produce sparks or electric arcs during operation under normal conditions. Electrical equipment and parts must not exceed a rated voltage of 11 kV.

#### Type of protection "Mold encapsulation m"

Devices with the type of protection "Mold encapsulation" are potted in casting compound.

#### Type of protection "By means of enclosure t"

Devices with the type of protection "By means of enclosure" prevent the penetration of dust or reduce it to a harmless level. Explosive equipment can be installed. The temperature on the housing must not ignite the surrounding atmosphere.

### WARNING

#### Use in environments with aggressive and dangerous media

The device can be operated both at high pressure and with aggressive and hazardous media. Therefore, improper use of this device may lead to serious injury and or considerable damage to property. Above all, it must be noted when the device was in use and is to be exchanged.

### CAUTION

#### Electrostatic sensitive devices

This device contains electrostatic sensitive devices. ESD devices can be destroyed by voltages well below the threshold of human perception. These static voltages develop when you touch a component or electrical connection of a device without having discharged the static charges present on your body. The damage to a module as a result of overvoltage cannot usually be detected immediately. It may only become apparent after a long period of operation.

## Description

### 3.1 Overview

The device is used as a control, switching and distribution unit in hazardous areas (gas: Zones 1, 2; dust: 21, 22; mining: M2). The product satisfies the requirements of the following standards

- EN/IEC 60079-0 General requirements
- EN/IEC 60079-7 Enhanced safety
- EN/ICE 60079-31 Protection by means of enclosure

The device consists of the wall-mounted enclosure and the components installed in it, for each of which there are separate certificates.

The device is also identified by the standards of the installed components. The supplied ATEX certificate applies to the device and to the components installed by the manufacturer.

### 3.2 Area of application

- The wall-mounted enclosure is suitable for installation and operation of distributed I/Os, e.g. ET 200iSP or ET 200, in the following hazardous areas:
  - Device group I (mining, M2)
  - Device group II (Zones 1 + 2 gas, and Zones 21 + 22 dust)
- The device consists of the wall-mounted enclosure (6DL2804-0xxxx) and the installed electronic components.
- The device has been tested and certified for use in these hazardous areas.

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#### Note

##### Product information on the Internet

You will find further information on installing and connecting the electronic components, for example in:

- ET 200iSP manual (A5E00247482)
- Principles of explosion protection manual (6ES7398-8RA00-8BA0)

This information is available on the Internet on the Siemens home page.

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- Only open the enclosure in Zones 21 and 22 if no ignitable dust atmosphere is present.
- The device is identified depending on:
  - The installed components
  - Use for the following hazardous areas: gas, dust or mining

### **3.3 Product features**

The device consists of a separately certified wall-mounted enclosure (6DL2804-0xxxx). The enclosure is made of stainless steel and is intended for wall mounting.

The device is intended for the installation of control and measuring devices such as:

- Distributed I/O systems:
  - ET 200iSP for use in Zones 1 and 2 (gas), Zones 21 and 22 (dust), and M2 (mining)
- Modular electro-pneumatic automation system AirLine Ex (type 8650, from the company Bürkert)
- Buffer stages and safety barriers
- Relays, buffer elements and fuses
- Separate terminals for intrinsically safe and non-intrinsically safe circuits
- Command and signaling devices
- Temperature sensors
- Heating and thermostat
- Lightning protection components
- FO coupler

## 3.4 Structure of the type designation

The device has type designation:

**6DL2804 - xxxxx - Z\*\*\***

- = 0 Permissible operating temperature range above -20 °C, plastic CWE, black
- = 1 Permissible operating temperature range above -40 °C, metal CWE
- = 2 Permissible operating temperature range above -20 °C, plastic CWE, blue
- = 6 Permissible operating temperature range above -20 °C, metal CWE, for mining
- = 1 With 1 row CWE
- = 2 With 2 rows CWE
- = 3 With 3 rows CWE M16
- = 4 With 3 rows CWE M20
- = 5 With 5 rows CWE M16
- = 6 With 5 rows CWE M20
- = D Size 650 x 450 x 230 mm (W x H x D)
- = E Size 950 x 450 x 230 mm (W x H x D)
- = F Size 650 x 450 x 350 mm (W x H x D)
- = G Size 950 x 450 x 350 mm (W x H x D)
- = H...W Max. size 1 000 x 1 200 x 300 mm (W x H x D)
- = A Zones 1 + 2
- = D Zones 21 + 22
- = M Mining M2
- = 1 Installation of components without electro-pneumatic system
- = 2 Installation of components with electro-pneumatic system (from the company Bürkert)

The enclosure sizes D...G have a cover which pivots upwards by means of gas-filled dampers.

The enclosure sizes H...W have doors with right-hand hinges (close on left).

Z\*\*\*: This additional data (e.g. ZA01, ZA02, ...) serves to identify design versions which are not included in the data positions of the type designation. The additional data is only specified if required.

## 3.5 Design of enclosure

### Standard enclosure 6DL2804-0xD...Gxx

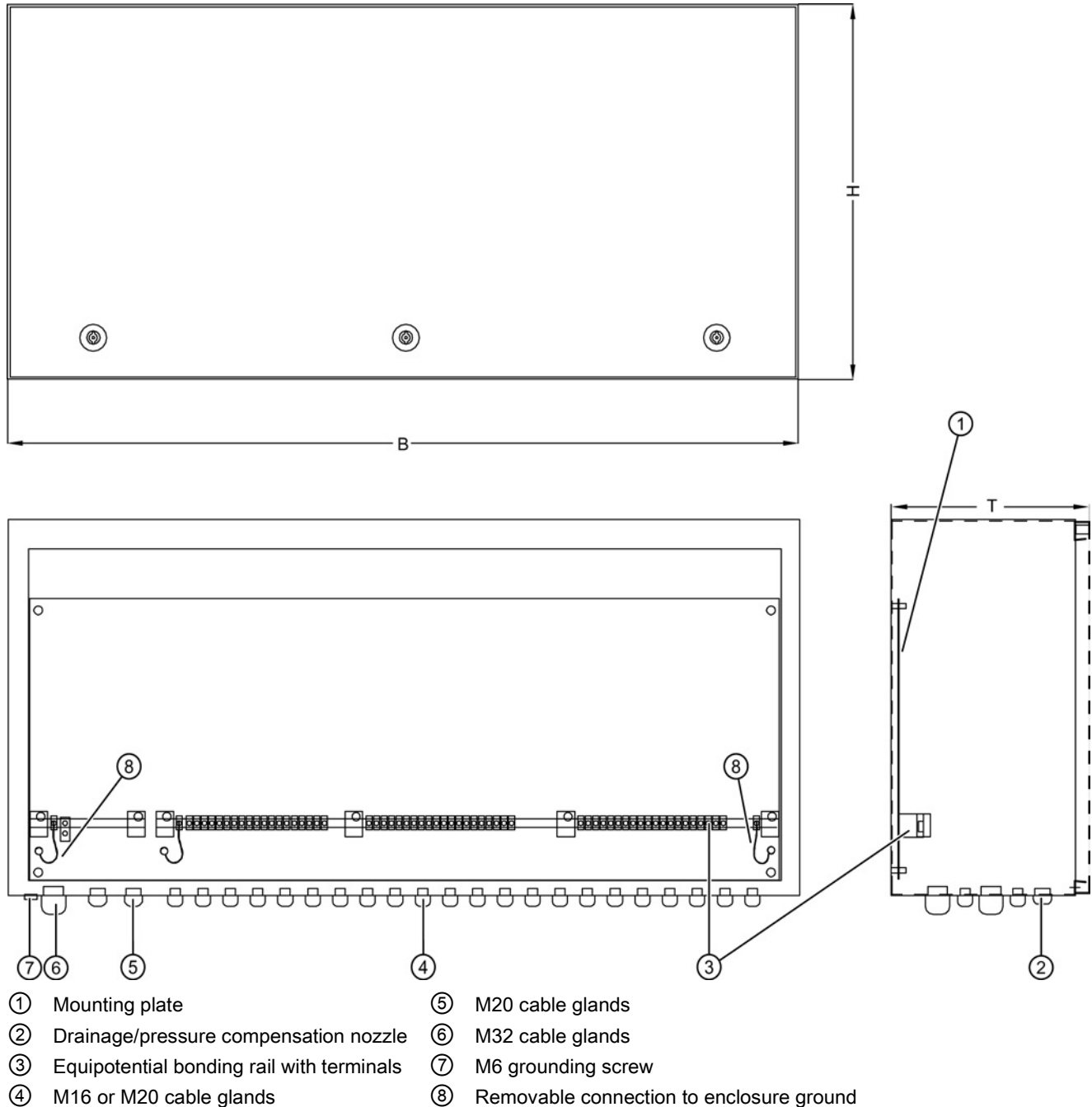


Figure 3-1 Standard enclosure 6DL2804-0xD...Gxx

W x H x D: See Structure of the type designation (Page 11)



## Standard enclosure 6DL2804-0xH...Wxx

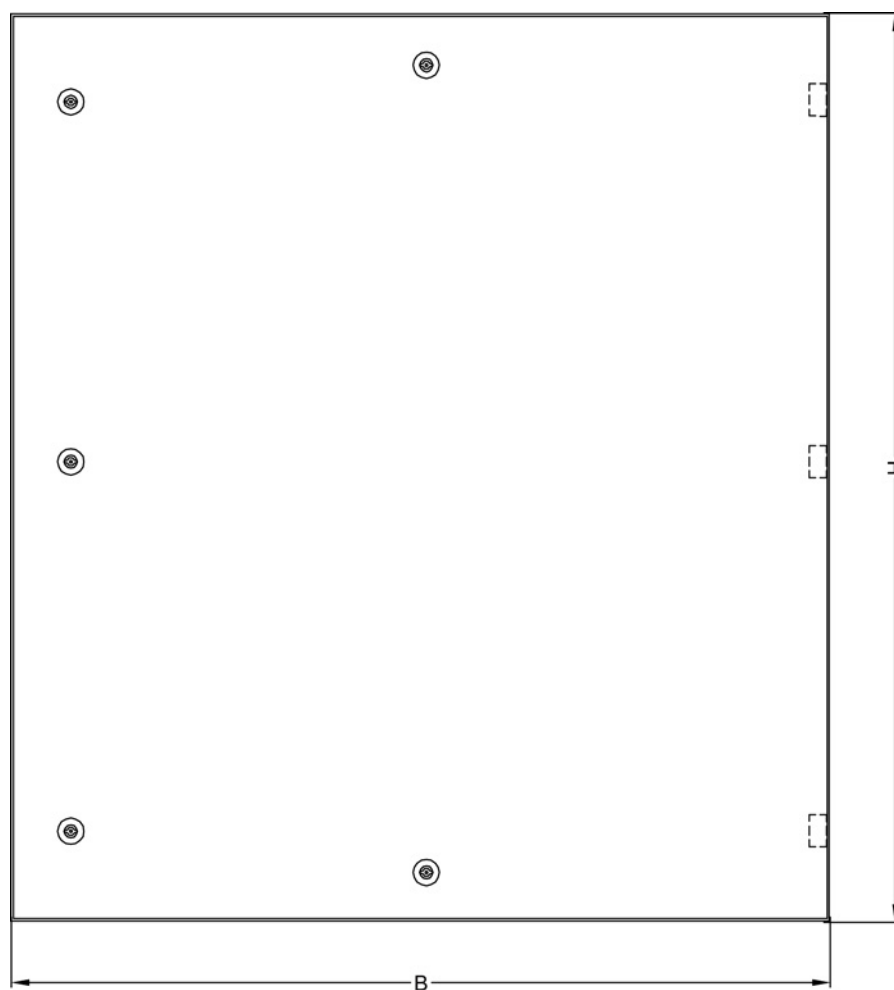


Figure 3-2 Standard enclosure 6DL2804-0xH...Wxx, view 1

### 3.5 Design of enclosure

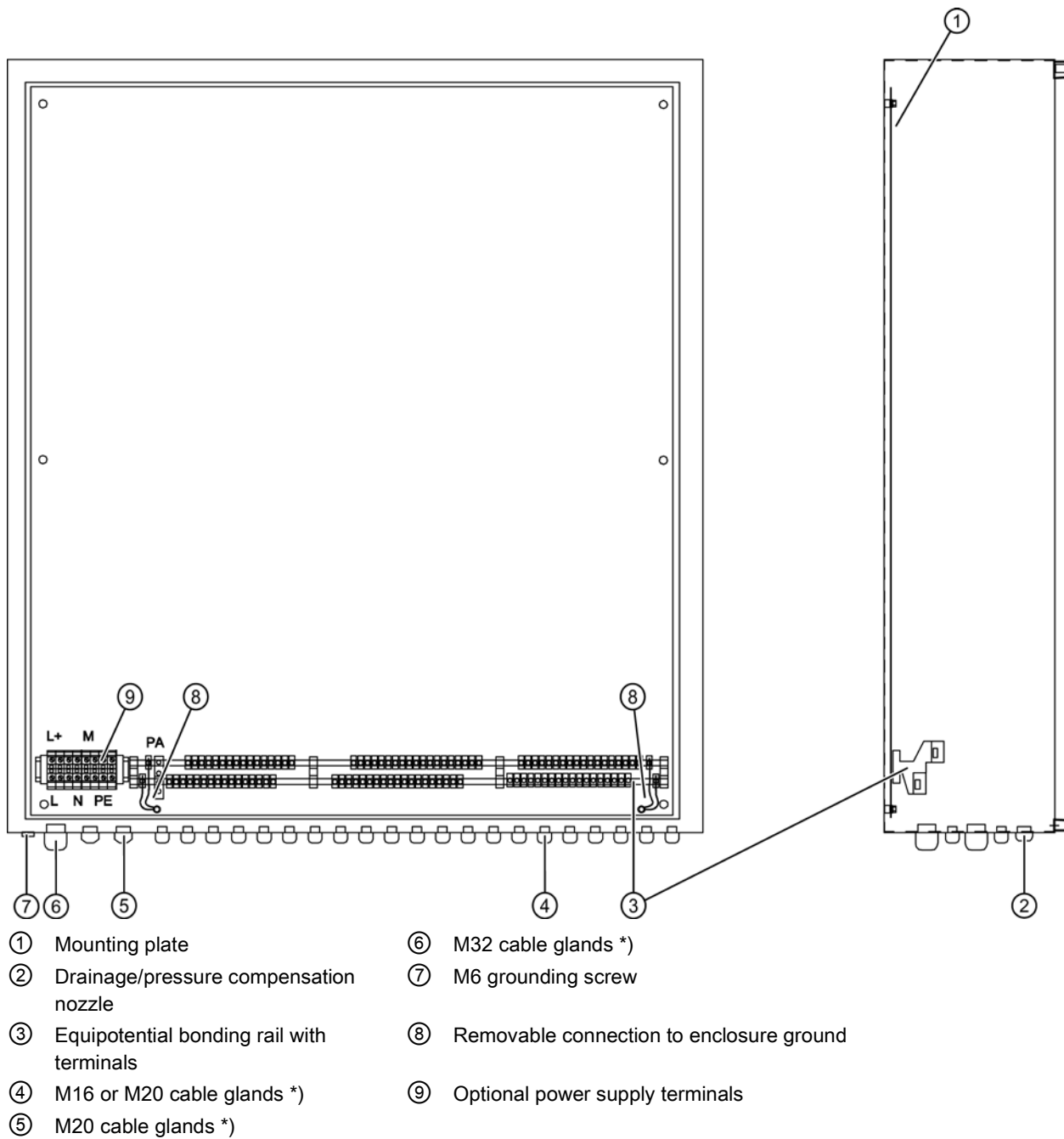


Figure 3-3 Standard enclosure 6DL2804-0xH...Wxx, view 2

## 3.6 Details of the enclosure

### Degree of protection

The degree of protection depends on the enclosure size and the parts used such as cable entries, dummy plugs and climate nozzles. The nameplate specifies the degree of protection for which the enclosure is designed. The minimum degrees of protection are:

- Device group I: IP54/IP55
- Device group II: IP54 to IP66 (Zones 1 + 2)
- Device group II: IP64 to IP66 (Zones 21 + 22)

### Operating temperature

The operating temperature range of the enclosure depends on the temperature range of the parts used, and can differ from the actual operating temperature range:

- -40 °C to +75 °C: only for the enclosure versions 6DL2804-0xxx1
- 0 °C to +75 °C

The nameplate specifies the permissible operating temperature range in each case.

- Prior to installation of components, check the operating temperature range of the complete setup. The operating temperature range for the complete setup may be limited by the maximum permissible operating temperature of the components and the dissipated heat produced in the enclosure.

Climate nozzles provide pressure compensation and drainage in the event of varying climatic conditions.

- In the case of aggressive environments, check whether use of the enclosure is possible with the material in question. Delivery of enclosures with appropriate surface protection is possible for use with aggressive environmental conditions.

### Cable and wiring entries (CWE)

- When fitting cables, observe the manufacturer's data on the tightening torques of the cable and wiring entries.
- Use the tightening torque of the clamping screw when connecting the cables.
- Relieve the tension on the cables outside the enclosure so that the cable gland is not stressed.
- For additional information and technical specifications, refer the respective manufacturer documentation, in particular:
  - Technical specifications, clamping ranges for cables
  - Notes on use, installation, mounting, commissioning and maintenance

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#### Note

Use the supplied red dummy plugs to close any cable glands not in use. Only then is it ensured that the degree of protection is retained.

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### Equipotential bonding rail

The equipotential bonding rail (10 x 3 mm) with terminals (up to 4 mm<sup>2</sup>) is used to contact the cable shields. Alternatively, you can also use other terminals here, e.g. KLBüCo from the company Weidmüller (not included in the scope of delivery)

Connect the equipotential bonding wire to the bonding terminal (0.75 to 35 mm<sup>2</sup>).

Short lines connect the equipotential bonding rail to the mounting plate and thus to the enclosure. In cases where the ground and equipotential bonding conductors are installed separately, this connection can be disconnected.

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#### Note

Also observe the installation guidelines in the ET200iSP operating instructions, Section 5.2 "Using ET 200iSP with equipotential bonding".

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### Wall supports

Screw the wall supports onto the enclosures using M6/M8 screws depending on the enclosure size. These are included with the enclosure accessories. To secure the enclosure, use 8 mm diameter screws and lock washers.

### Grounding connection

The M6/M8 ground connection screw is used for the PE conductor; use a cable with lug for this. To prevent the screw from becoming loose, make sure you use the lock washer. Connecting the grounding cable avoids static charge which is important, in particular, for dust explosion protection.

## Installed components

The enclosure nameplate specifies the parameters within which the installed components can be used.

Observe the following if you subsequently connect equipment and the required cables on site:

- Read and observe the manufacturer's instructions, especially notes, warnings and information on special features.
- Electrical equipment as well as combinations of equipment can impair the intrinsic safety of the circuits as a result of their electrical parameters. Prior to installing equipment, check that the intrinsic safety of the circuit is still guaranteed.

*Description*

---

*3.6 Details of the enclosure*

## Mounting

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**Note**

- When installing control and measuring devices in the Ex enclosure, keep to the instructions in the relevant product descriptions and the technical specifications in the data sheets.
  - All control and measuring devices installed in the enclosure must be separately certified for the relevant hazardous zone.
  - Run the tests prescribed in the relevant national regulations for the installed control and measuring devices.
- 

**Note**

- Install and operate the distributed I/O device in hazardous areas according to the specifications of the EC-type examination certificate according to ATEX and these operating instructions or the standards and directives valid in your country.
  - Assembly, installation, commissioning and maintenance may only be performed by qualified personnel.
  - The devices and installed components must only be used for their intended purpose.
-

## 4.1 Transport and storage

Pack and store the enclosure for transport or storage so that there can be no undue strain on the enclosure, particularly on its top cover. If there is too much strain on the top cover of the enclosure, this can damage the seal.

Do not place the enclosure on the cable glands fitted in its base, otherwise the glands will be damaged.

## 4.2 Mounting the enclosure

The enclosure is intended for wall mounting and should be secured with the wall supports supplied with it. Use the following template for the drilling.

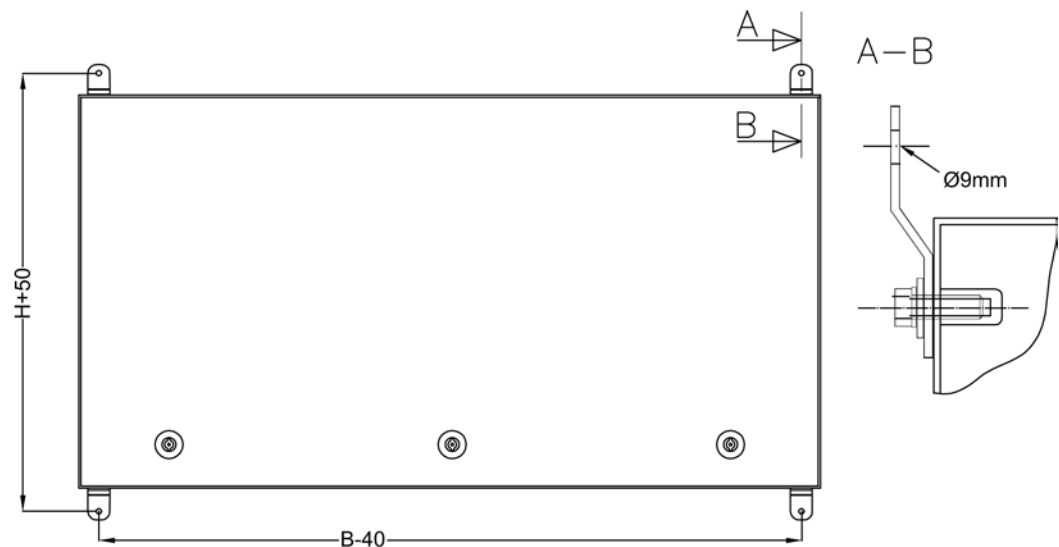


Figure 4-1 Drilling template for securing the device

### **⚠ CAUTION**

#### **Danger of injury when the enclosure is opened**

When opening the enclosure with pivoting cover, the cover is pressed upwards by means of the pressure of the dampers. When opening, press against the cover with your hand.

#### **Note**

- Remember the maximum thermal load on the cables and wiring. The degree of protection is only ensured when suitable cables and wires are used and correctly installed.
- Note that it is only permitted to connect and disconnect the cables to the power supply module if the module has been powered down.
- The degree of protection is reduced when the enclosure is mounted vertically.



## Procedure

1. To open the enclosure, unlock using a double-bit key (included with the enclosure). Hold the cover firmly while unlocking to make sure that it does not spring up as a result of the pressure of the dampers.
2. Mount the wall support (included in the enclosure accessories) to the rear panel of the enclosure in accordance with Fig. 4-1. Secure the enclosure using 8 mm diameter screws and lock washers at the location of use.
3. Install and secure the cables entering the enclosure and make sure they have adequate strain relief. The cable entry may only be used for strain relief if suitable cable glands are used.
4. Route the cables from below through the associated glands and tighten the clamping screw of the gland at the torque specified in the manufacturer's instructions.
5. Make a short connection between the cable screen and the equipotential bonding rail.
6. If you remove the detachable connections between equipotential bonding rail and mounting plate, you can install the bonding rail ungrounded if required (see Figure 3-1 Standard enclosure 6DL2804-0xD...Gxx (Page 12)).
7. Route and connect in accordance with EN 60079-11:
  - The power supply cable
  - The bus cable
  - The signal cables

In hazardous areas, the installation regulations according to EN 60079-14 and the national regulations must also be observed.
8. If you replace installed components, follow the instructions in the manufacturer's description of the device.

## See also

Design of enclosure (Page 12)

## **4.3 Installing the enclosure outdoors**

The enclosure should have at least IP56 protection when installing outdoors. This prevents damaging amounts of dirt or water from penetrating the enclosure under normal ambient conditions. Take the following additional protective measures depending on the environment of the installation location:

- Avoid subjecting the enclosure permanently to water (for example, snow).
- Remember that direct sunlight can cause excessive temperatures in the interior of the enclosure. In locations where this can occur, provide additional protection with some form of roofing.
- Note that opening the enclosure at ambient temperatures below 0 °C can damage the seal as a result of freezing.
- Condensation may be produced within the enclosure due to temperature variations. Climate nozzles are therefore installed to permit drainage and pressure compensation. Ensure when mounting the enclosure that the climate nozzles are at the lowest position.
- If you want to use the device in an aggressive environment, check whether this is possible with the material in question.

## 4.4 Optional installation components

The following separately certified components can be installed optionally:

- Terminals:
  - Ex e for the connection of cable cross-sections >4 mm,
  - Ex i for wiring of intrinsically safe signals (blue); these may only be used for Ex i signals.

Make sure when arranging intrinsically safe and non-intrinsically safe terminals that they are separated ("thread measure") by at least 50 mm.
- Temperature sensors:  
For monitoring the temperature inside the enclosure,
- Relays, disconnectors and fuses:  
For interrupting, switching or protecting individual signal circuits.
- Command and signaling devices:  
For manual switching (control switch) or optical display (indicator lamps) in the enclosure wall.
- FO couplers:  
For connecting the PROFIBUS of the ET 200iSP by means of FO cable
- Lightning protection components:  
For protecting the ET 200iSP components from lightning strikes when the enclosure is installed in exposed locations.
- Heater:  
To prevent condensation in the enclosure at low temperatures, it is recommendable to install a heater. The heater must be dimensioned in accordance with the enclosure size. A heater permits operation of the devices at temperatures below -20 °C.

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### Note

If components with a supply voltage of 120 / 230 V AC are installed, you must fuse these devices according to DIN 41571 and/or IEC 60127 or in accordance with the manufacturer's data.

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- Modular electro-pneumatic automation system AirLine Ex (type 8650, from the company Bürkert):  
Connected to the ET 200iSP components to form an automation system for processing electrical and pneumatic variables.  
When connecting and operating, observe the manufacturer's descriptions and manuals.
- When installing a pneumatic system, exit the air passing through the exhaust connections out of the enclosure.

<b>NOTICE</b>
<b>Damage to seal or screwed glands</b>  Make sure that the vent of the pneumatic system does not blow directly into the enclosure. The pressure resulting in the enclosure would otherwise damage the seal and screwed glands, and the degree of protection would no longer be provided.

## 4.5 Use of I/O device at temperatures down to -40 °C

You must install a heater in the enclosure in order to operate the devices at temperatures down to -40 °C. Note the following:

When using a closed enclosure, only switch the installed components on following a specific warming-up time which depends on the enclosure size and heating power:

- With enclosure types 6DL2804-xxDxx and -xxExx, the warming-up time is at least 2 hours.
- With enclosure types 6DL2804-xxKxx and -xxUxx, the warming-up time is at least 3 hours.

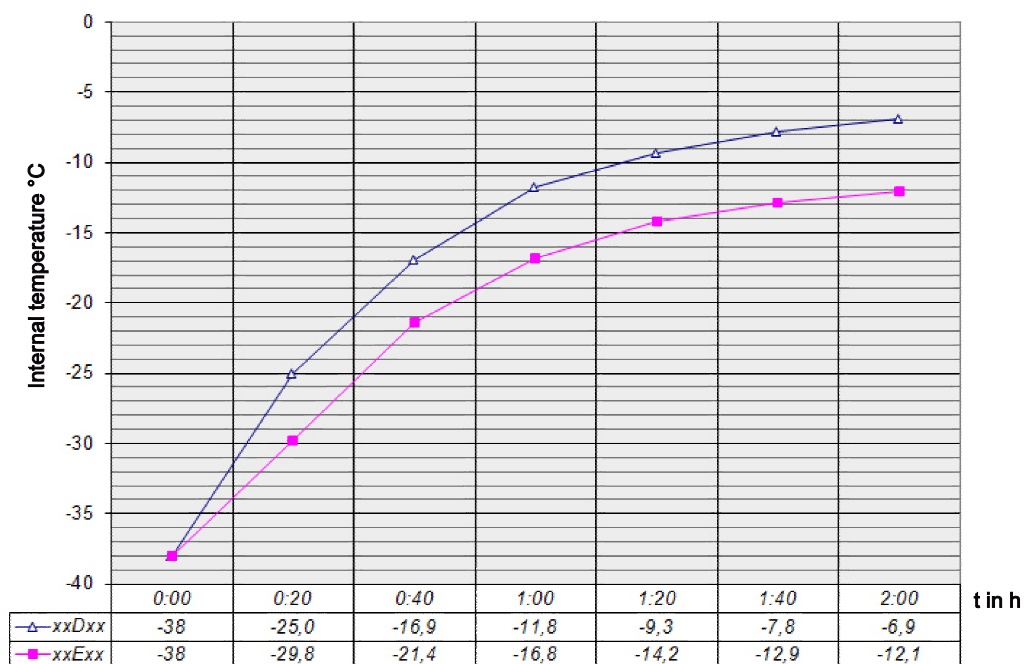


Figure 4-2 Temperature response with 100 W heater for 6DL2804-xxDxx / -xxExx

Temperature response inside the enclosure following switching-on of the heater at an outdoor temperature of -40 °C.

After > 2 hours, the internal temperature is above the minimum permissible operating temperature of the installed components of -20 °C.

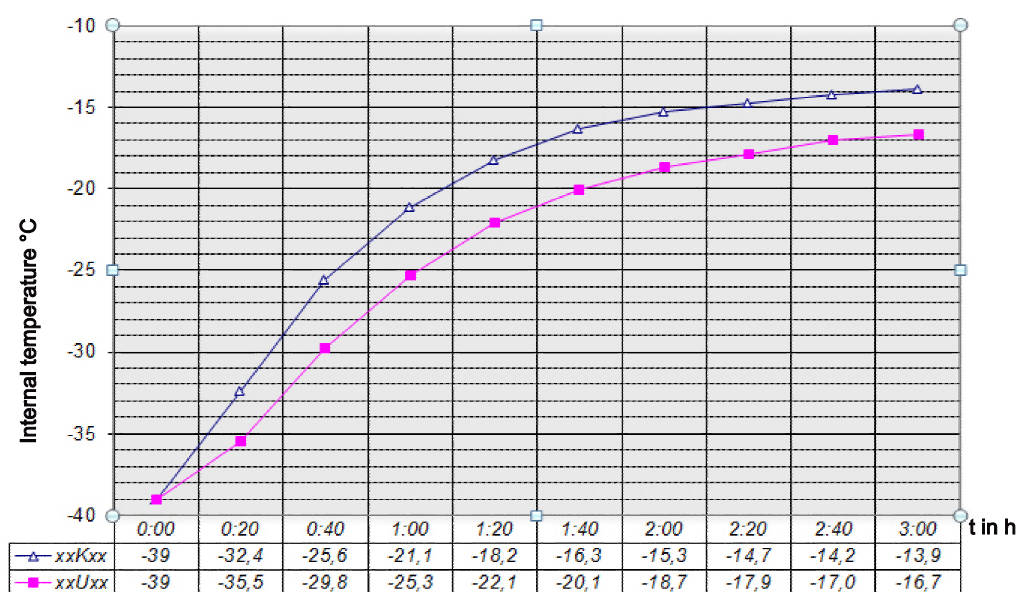


Figure 4-3 Temperature response with 200 W heater for 6DL2804-xxKxx / -xxUxx

Temperature response inside the enclosure following switching-on of the heater at an outdoor temperature of -40 °C.

After > 3 hours, the internal temperature is above the minimum permissible operating temperature of the installed components of -20 °C.



## Maintenance and servicing

- Select maintenance cycles so that problems can be recognized in good time. Check the following:
  - The device for visible damage
  - That the permitted temperatures are not exceeded
  - That the cables are securely connected,
  - Damage to cable and wiring entries
  - Enclosure gaskets for cracks and damage
  - Bonding of seal on the enclosure cover and at the bonding positions
  - Surface of seal for damage
- If the seal is damaged, replace the complete cover if necessary.
- If there is damage to the enclosure, there is a risk that the degree of protection is no longer valid. In some cases, this might necessitate replacement of the enclosure.
- If there is damage to cable and wiring entries, only replacement with original parts is permitted.
- Check regularly, once a year, that the cable and line entries are securely in place and properly sealed. Check the tightening torques.

If necessary, re-tighten the glands to the torques specified by the manufacturer. For information on the torques, refer to the respective manufacturer documentation.





## Technical specifications

Table 6- 1 Technical specifications 6DL2804-xxDxx / xxExx / xxFxx / xxGxx

6DL2804-	xxDxx	xxExx	xxFxx	xxGxx
Wall-mounted enclosure	Type 6DL2804-0xxxx, DMT 02 ATEX E 249 U			
Ex marking	See Ex marking			
Degree of protection <sup>1)</sup>	IP54 to IP66			
Dimensions: W x H x D	650 x 450 x 230	950 x 450 x 230	650 x 450 x 350	950 x 450 x 350
Material	Stainless steel: DIN 1.4404, plate thickness 1.5 mm			
Weight [kg]	30	43	31	43
Cover seal	Silicone rubber			
Cable entries for				
Voltage (cable-Ø in mm)	2 M32 Ex e (13 to 21)			
Bus (cable-Ø in mm)	4 M20 Ex e (6 to 13)			
Signals (cable-Ø in mm)	M16 (4 to 9)	M16 (4 to 9)	M20 (6 to 13)	M20 (6 to 13)
3 rows (xxx3x)	39	66	36	57
5 rows (xxx5x)	65	110	60	95
Equipotential bonding rail	3 x 10 mm Cu			
Bonding terminals	0.75 to 35 mm <sup>2</sup> Ex e for equipotential bonding cable, 4 mm <sup>2</sup> for shield connection			
Protective conductor connector	M6 screw, at least 16 mm <sup>2</sup>			
Rated voltage/current <sup>2)</sup>	These values depend on the installed components.			
Operating temperature range				
6DL2804-1xxxx with installation of ET200iSP	-20 °C to +xx °C <sup>3)</sup>			
6DL2804-1xxx1 with installation and heater	-40 °C to +xx °C <sup>3) 4)</sup>			
6DL2804-2xxxx with installation of ET200iSP and electro-pneumatic system AirLine Ex Typ 8650	0 °C to +xx °C <sup>3)</sup>			
Permissible humidity	Max. 95%			

<sup>1)</sup> The degree of protection of the enclosure depends on that of the installed parts and the enclosure size.

<sup>2)</sup> The actual electrical values depend on the electrical equipment installed. The manufacturer specifies the final values within the framework of these limits.

<sup>3)</sup> The specified permissible operating temperature range is only valid if the enclosure is installed horizontally. A vertical installation can reduce the maximum permissible temperature (for information on this refer also to the ET200iSP manual). The max. operating temperature is defined depending on the dissipated heat of the installed components, and specified on the nameplate. Note that the operating temperature of the complete setup must be checked again if further components are subsequently fitted.

<sup>4)</sup> The temperature range of -40 °C only applies to the enclosure types 6DL2804-1xxx1 (metal cable entries). Installation of a heater is required for this.

Table 6- 2 Technical specifications 6DL2804-xMDxx / xMExx

6DL2804-	xMDxx	xMExx
Wall-mounted enclosure	Type 6DL2804-0xxxx, DMT 02 ATEX E 249 U	
Ex marking	See Ex marking	
Degree of protection <sup>1)</sup>	IP54/IP55	
Dimensions: W x H x D	650 x 450 x 230	950 x 450 x 230
Material	Stainless steel: DIN 1.4404, plate thickness 1.5 mm	
Weight [kg]	35	39
Cover seal	Silicone rubber	
Cable entries for		
Voltage (cable-Ø in mm)	6 M25 (Ex e) (9 to 12 )	
Bus (cable-Ø in mm)		
Signals (cable-Ø in mm)	M32 (18 to 21)	M32 (18 to 21)
3 / 1 row (1Mxxx)	6	9
5 / 2 rows (1Mxxx)	12	18
Equipotential bonding rail	3 x 10 mm Cu	
Bonding terminals	0.75 to 35 mm <sup>2</sup> Ex e for equipotential bonding cable, 4 mm <sup>2</sup> for shield connection	
Protective conductor connector	M6 screw, at least 16 mm <sup>2</sup>	
Rated voltage/current <sup>2)</sup>	These values depend on the installed components.	
Operating temperature range		
6DL2804-1xxxx with installation of ET200iSP	-20° C to +xx °C <sup>3)</sup>	
Permissible humidity	Max. 95%	

<sup>1)</sup> The degree of protection of the enclosure depends on that of the installed parts and the enclosure size.

<sup>2)</sup> The actual electrical values depend on the electrical equipment installed. The manufacturer specifies the final values within the framework of these limits.

<sup>3)</sup> The specified permissible operating temperature range is only valid if the enclosure is installed horizontally. A vertical installation can reduce the maximum permissible temperature (for information on this refer also to the ET200iSP manual). The max. operating temperature is defined depending on the dissipated heat of the installed components, and specified on the nameplate.

Note that the operating temperature of the complete setup must be checked again if further components are subsequently fitted.

Table 6- 3 Technical specifications 6DL2804-xxKxx / xxTxx / xxUxx

6DL2804-	xxKxx	xxTxx	xxUxx
Wall-mounted enclosure	Type 6DL2804-0xxxx, DMT 02 ATEX E 249 U		
Ex marking	See Ex marking		
Degree of protection <sup>1)</sup>	IP54 to IP66		
Dimensions [mm]: W x H x D	800 x 800 x 300	1 000 x 1 000 x 300	1 000 x 1 200 x 300
Material	Stainless steel: DIN 1.4301, plate thickness: 1.5 mm with edge length up to 800 mm, 2.0 mm with edge length 1 000 mm or more		
Weight [kg]	65	92	100
Cover seal	Silicone rubber		
Cable entries	Made of plastic or metal; size and number depending on requirements		
Equipotential bonding rail	3 x 10 mm galvanized Cu with terminals 4 to 35 mm <sup>2</sup>		
Protective conductor connector	M8 screw, at least 16 mm <sup>2</sup> with cable lug		
Rated voltage/current <sup>2)</sup>	Max. 1 000 V / 100 A		
Operating temperature range <sup>3)</sup>	-20 °C to +xx °C or -40 °C to +xx °C <sup>4)</sup> or 0 °C to xx °C		
Permissible humidity	Max. 95%		

1) The degree of protection of the enclosure depends on that of the installed parts and the enclosure size.

2) The actual electrical values depend on the electrical equipment installed. The manufacturer specifies the final values within the framework of these limits.

3) The specified permissible operating temperature range is only valid if the enclosure is installed horizontally. A vertical installation can reduce the maximum permissible temperature (for information on this refer also to the ET200iSP manual). The max. operating temperature is defined depending on the dissipated heat of the installed components, and specified on the nameplate.

Note that the operating temperature of the complete setup must be checked again if further components are subsequently fitted.

4) The temperature range of -40 °C only applies to the enclosure types 6DL2804-1xxx1 (metal cable entries). Installation of a heater is required for this.

## Ex marking

II 2 (1) G Ex e d ib [ia Ga] IIC T4 Gb (with heater T3) or

II 2 (1) G Ex e d mb ib [ia Ga] [ia op is Ga] IIC T4 Gb (with heater T3) or

II 2 (1) D Ex tb [ia IIIC Da] IIIC T130°C Db or

II 2 (1) D Ex tb [ia IIIC Da] [Ex ia Da] IIIC T130°C Db

I M2 Ex e d ib [ia Ga] I Mb or

I M2 Ex e d mb ib [ia Ga] I Mb



## Ground points in the enclosure

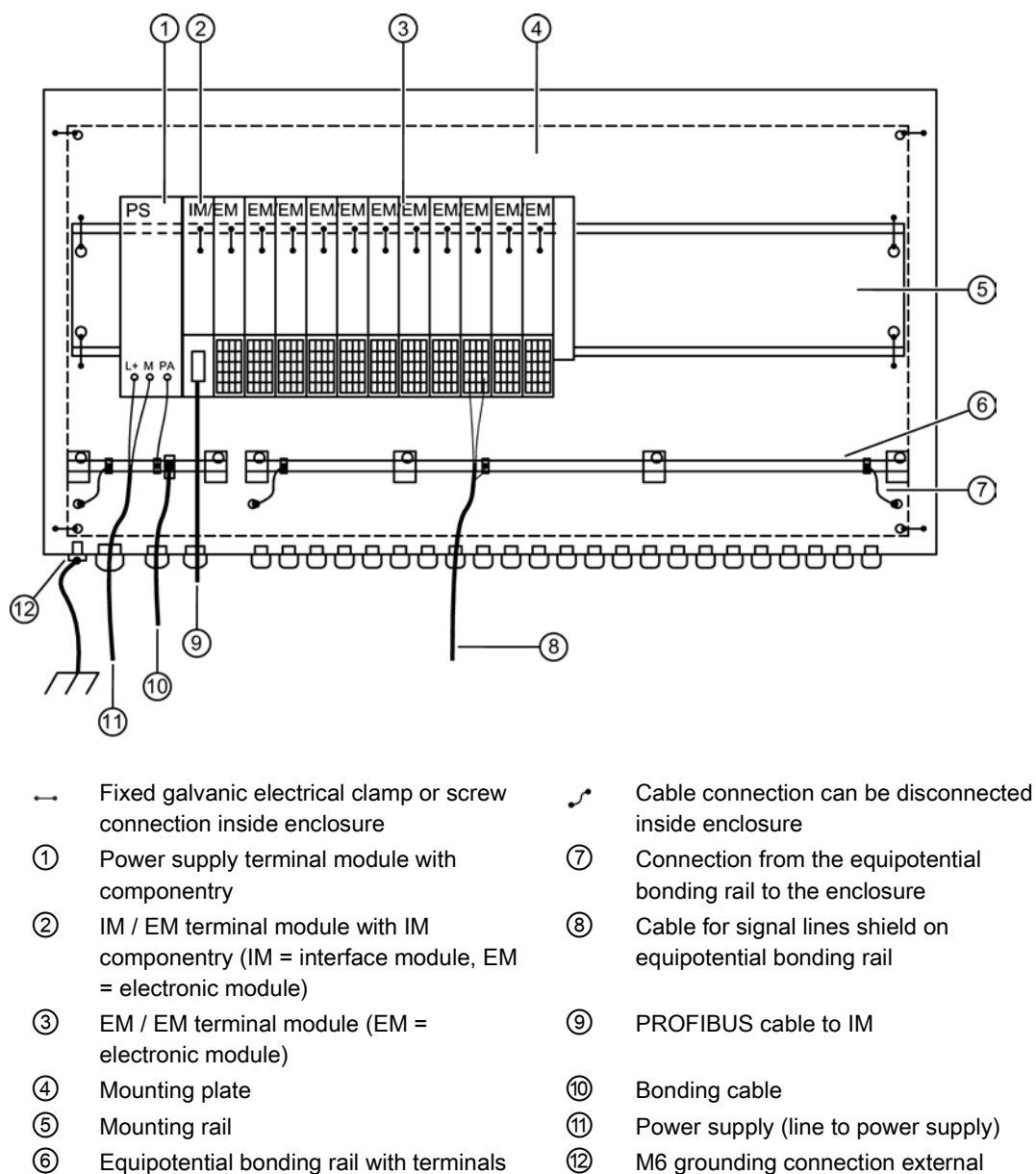


Figure 7-1 Fixed and detachable connections to ground and equipotential bonding rail



## Dimension drawings

### 8.1 Installation: ET200iSP components

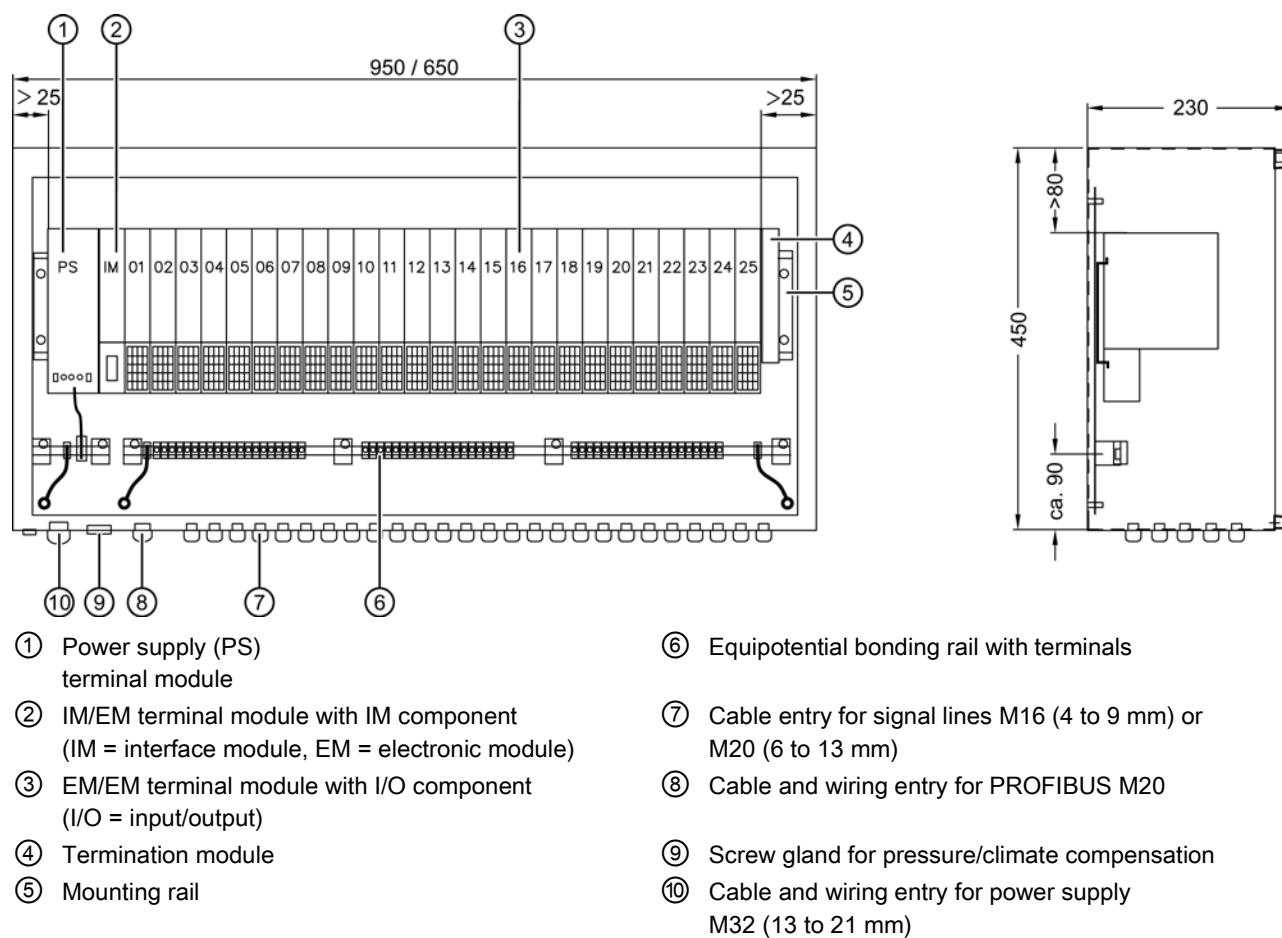
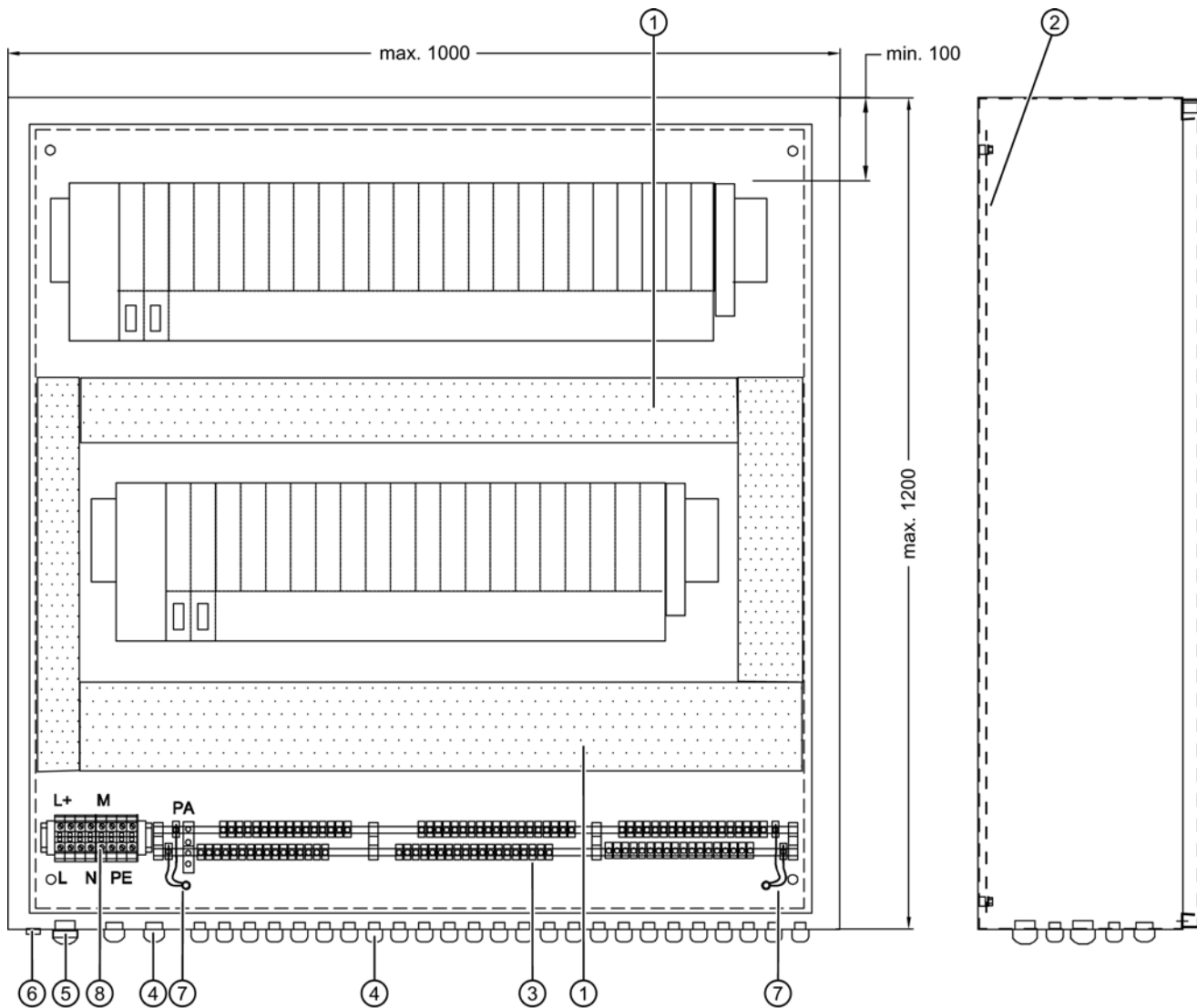


Figure 8-1 Distributed I/O device 6DL2804-xxD...Gxx with installation of ET 200iSP



- |   |  |
|---|--|
| ① Cable duct                                | ⑤ Venting nozzle                           |
| ② Mounting plate                            | ⑥ PE connection                            |
| ③ Equipotential bonding rail with terminals | ⑦ Removable connection to enclosure ground |
| ④ Cable glands                              | ⑧ Optional power supply terminals          |

Figure 8-2 Distributed I/O device 6DL2804-xxH...Wxx with installation of ET200iSP



## 8.2 Installation: Heating

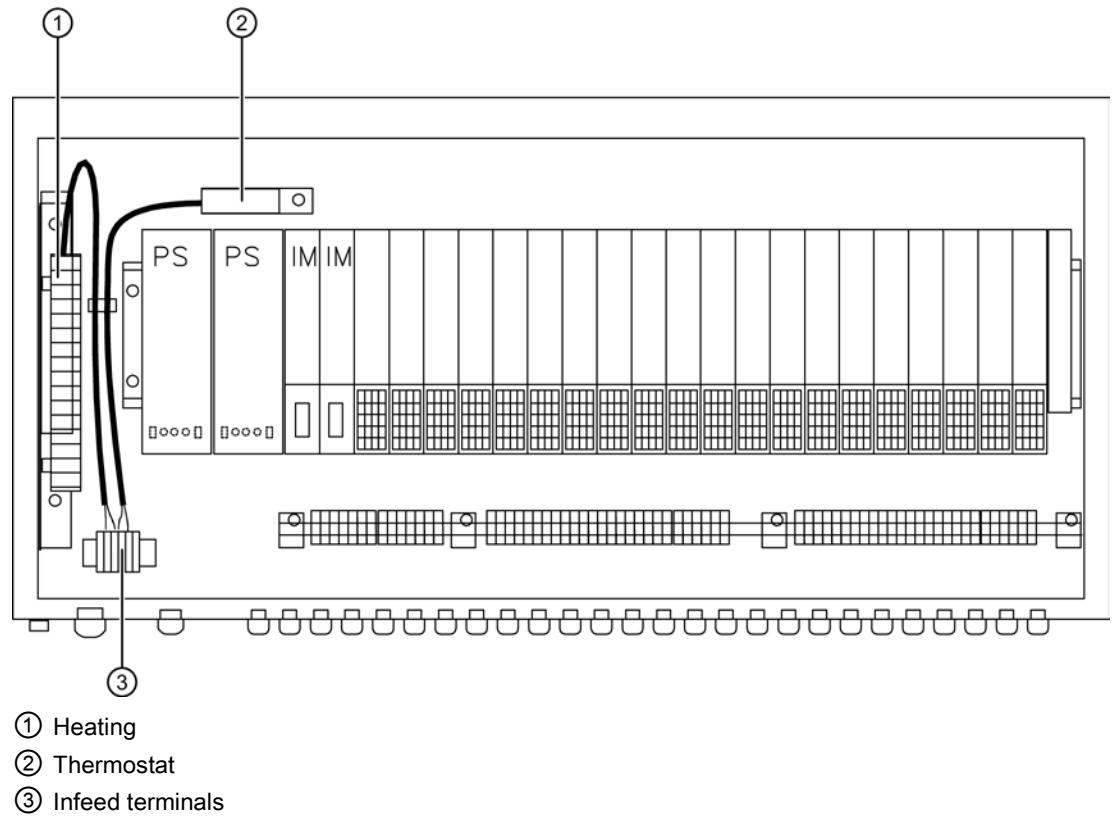
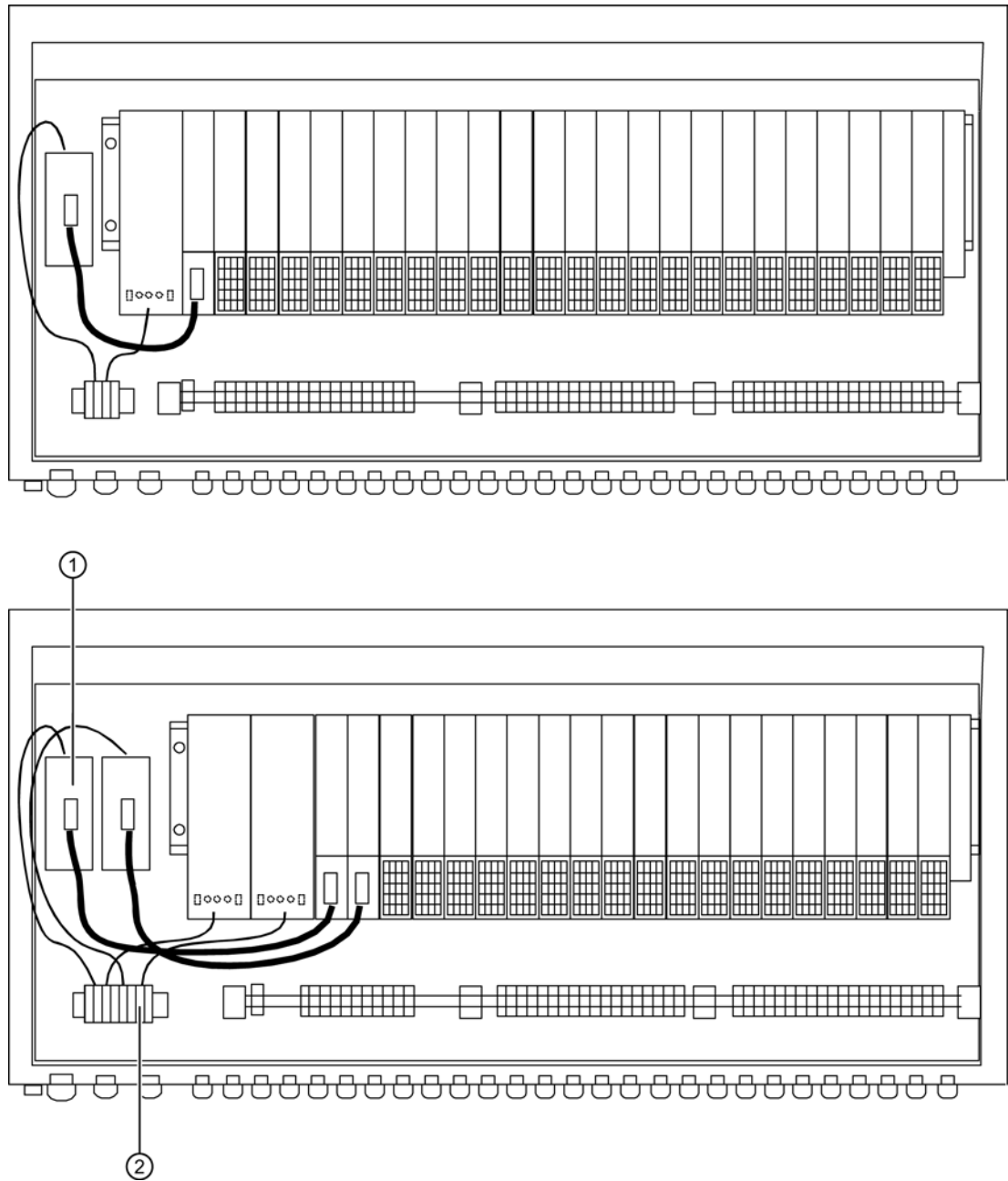


Figure 8-3 Distributed I/O device with installation of heating

## 8.3 Installation: FO conductor



- ① FO coupler
- ② Terminals for power supply and distribution 24 V DC

Figure 8-4 Distributed I/O device with installation of FO coupler: single and redundant designs

## ESD Guidelines

### What does ESD mean?

All electronic modules are equipped with large-scale integrated ICs or components. Due to their design, these electronic elements are highly sensitive to overvoltage, and thus to any electrostatic discharge.

The electrostatic sensitive components/modules are commonly referred to as ESD devices. This is also the international abbreviation for such devices.

ESD modules are identified by the following symbol:



<b>NOTICE</b>
ESD devices can be destroyed by voltages well below the threshold of human perception. These static voltages develop when you touch a component or electrical connection of a device without having discharged the static charges present on your body. The electrostatic discharge current may lead to latent failure of a module, that is, this damage may not be significant immediately, but in operation may cause malfunction.

## Electrostatic charging

Every person without a conductive connection to the electrical potential of his/her surroundings can be electrostatically charged.

The figure below shows the maximum electrostatic charge that can build up on a person coming into contact with the materials indicated. These values correspond to IEC 801-2 specifications.

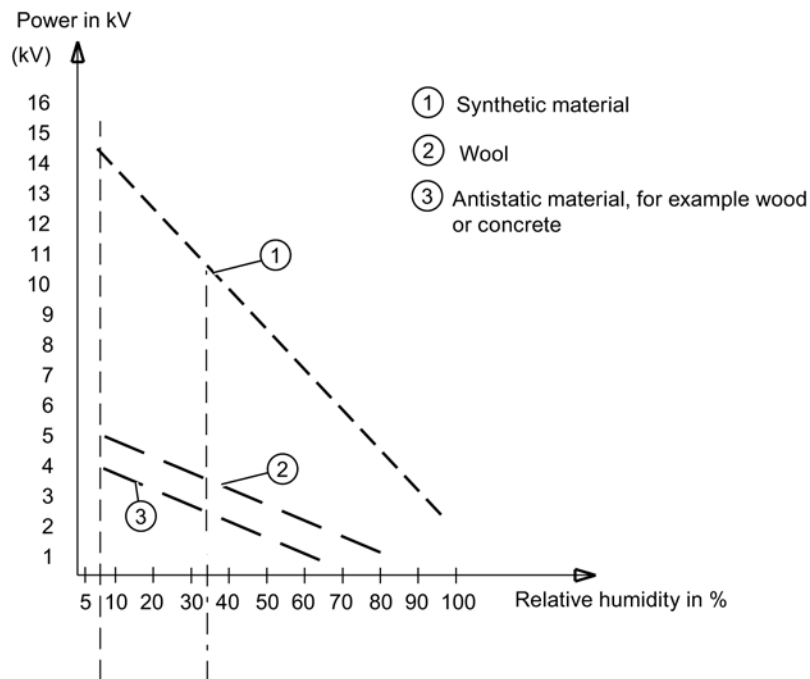


Figure 9-1 Electrostatic voltages on an operator

## Basic protective measures against electrostatic discharge

- **Ensure good equipotential bonding:**  
When handling electrostatic sensitive devices, ensure that your body, the workplace and packaging are grounded. This prevents electrostatic charge.
- **Avoid direct contact:**  
As a general rule, only touch electrostatic sensitive devices when this is unavoidable (e.g. during maintenance work). Handle the modules without touching any chip pins or PCB traces. In this way, the discharged energy can not affect the sensitive devices.

Discharge your body before you start taking any measurements on a module. Do so by touching grounded metallic parts. Always use grounded measuring instruments.

## Service and support

### Local information

If you have questions about the products described in this document, you can find help at:  
<http://www.siemens.com/automation/partner>

### Technical documentation for SIMATIC products

Further documentation for SIMATIC products and systems can be found at:  
<http://www.siemens.de/simatic-tech-doku-portal>

### Easy shopping with the A&D Mall

Catalog & online ordering system: <http://www.siemens.com/automation/mall>

### Training

All the training options are listed at: <http://www.siemens.com/sitrain>

Find a contact at: Phone: +49(911) 895-3200

### Technical support

Tel +49 180 5050 222

Fax +49 180 5050 223

<http://www.siemens.com/automation/service>

You will find support request web form at:

<http://www.siemens.de/automation/support-request>

If you contact customer support, please have the following information available for the technician:

- Order No. (MLFB) of the device

### Online support

Product information, support and service, right through to the technical forum, can be found at: <http://www.siemens.com/automation/service&partner>



# Index

## B

Bus cable, 21

## C

Cycles

Maintenance, 27

## D

Damage, 27

Dimension drawing

I/O device 6DL2804-xxD...Gxx, 35

I/O device 6DL2804-xxH...Wxx, 36

Installation FO conductor, 38

Installation of heater, 37

Distributed I/O

ET 200, 9

ET 200iSP, 9

Distributed I/O systems

Buffer elements, 10

Buffer stages, 10

Command and signaling devices, 10

Electro-pneumatic automation system, 10

ET 200iSP, 10

ET 200M, 10

ET 200S, 10

Fuses, 10

Heating, 10

Lightning protection components, 10

Relay, 10

Safety barriers, 10

Temperature sensors, 10

Terminals, 10

Double-bit key, 21

Drilling template for securing the device, 20

## E

EC type examination certificate, 19

Enclosure

Design, 12

Environmental conditions, 22

ESD guidelines, 39

## G

Guidelines

ESD guidelines, 39

## H

History, 5

## I

Increased safety, 8

Installed electronic components, 9

Intrinsic safety, 8

## M

Maintenance

Cycles, 27

Maintenance technicians, 5

Media

Aggressive, 8

Dangerous, 8

Modules

Electrostatic sensitive, 8

Mold encapsulation, 8

## O

Online support, 41

Optional components, 23

## P

Power supply cable, 21

Pressure-resistant encapsulation, 8

Principles

Protection against explosion, 9

Product information, 9

Protection against explosion

Principles, 9

## **Q**

Qualified personnel, 7

## **S**

Safety precautions, 8

Seal, 20

Service technicians, 5

Signal line, 21

Storage, 20

## **T**

Technical specifications

I/O device, 29, 30

Technical support, 41

Test certification, 7

The Ordinance on Industrial Safety and Health, 7

Training, 41

Transport, 20

Type of protection

By means of enclosure, 8

Increased safety, 8

Intrinsic safety, 8

Mold encapsulation, 8

Pressure-resistant encapsulation, 8

## **W**

Wall mounting, 20

Wall-mounted enclosure, 9, 10



## EU-Konformitätserklärung / EU-Declaration of Conformity

Nr./No. A5E32187806A-002

Seite/page 1 von/of 2

Hersteller: Siemens AG, I IA CE SE .....  
 Manufacturer: .....  
 Anschrift: Breslauer Str. 5, D-90766 Fuerth .....  
 Address: .....  
 Produktbezeichnung: Dezentrales Peripheriegerät .....  
 6DL2804-\*A\*\*\*-Z\*\*\*1, 6DL2804-\*M\*\*\*-Z\*\*\*1, 6DL2804-\*D\*\*\*-Z\*\*\*1 .....  
 Product identification: Distributed I/O-device .....  
 6DL2804-\*A\*\*\*-Z\*\*\*1, 6DL2804-\*M\*\*\*-Z\*\*\*1, 6DL2804-\*D\*\*\*-Z\*\*\*1 .....

1) \* sind Platzhalter für Varianten, für die diese EU-Konformitätserklärung gültig ist.  
 \* are wildcard characters for variants this EU Declaration of Conformity is valid for.

**Das bezeichnete Produkt entspricht in der gelieferten Ausführung den Bestimmungen folgender EU-Richtlinie(n):**

**94/9/EG** RICHTLINIE DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 23. März 1994 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen

**2004/108/EG** RICHTLINIE DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 15. Dezember 2004 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit

ATEX-Kennzeichnung:  
 ATEX marking

**CE 0158**



**II 2 (1) G Ex e d ib [ia Ga] IIB/IIC T4 Gb** bzw. Typ 6DL2804-\*A\*\*\*-Z\*\*\*  
**II 2 (1) G Ex e d mb ib [ia Ga] IIB/IIC T4 Gb**  
**I M2 Ex e d ib [ia Ma] I Mb** bzw. Typ 6DL2804-\*M\*\*\*-Z\*\*\*  
**I M2 Ex e d mb ib [ia Ma] I Mb**  
**II 2 (1) D Ex tb IIC [ia Da] T130°C Db** Typ 6DL2804-\*D\*\*\*-Z\*\*\*

**The designated product as delivered is in conformity with the provisions of the following EU-Directive(s):**

**94/9/EC** DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres

**2004/108/EC** DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility

Name, Anschrift, Kennnummer der notifizierten Stelle  
 name, address, identification number of the notified body  
 DEKRA EXAM GmbH, Dinnendahlstr. 9, 44809 Bochum, 0158

Nummer der EG-Baumusterprüfbescheinigung  
 number of the EC type-examination certificate  
 BVS 04 ATEX E 157

Zulassung Qualitätssicherungssystem  
 approval of quality assurance system  
 BVS 11 ATEX ZQS/E111

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie. Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

This declaration certifies the compliance with the indicated directives but does not imply any warranty for properties. The safety instructions of the accompanying product documentation shall be observed.

## EU-Konformitätserklärung / *EU-Declaration of Conformity*

Nr./No. A5E32187806A-002

Seite/page 2 von/of 2

Die Übereinstimmung des bezeichneten Produkts mit den Vorschriften der angewandten Richtlinie 94/9/EG wird nachgewiesen durch die vollständige Einhaltung folgender Normen / Vorschriften:

*The conformity of the designated product with the provisions of the applied Directive 94/9/EC is proved by full compliance with the following standards / regulations:*

### Harmonisierte Normen / *Harmonized standards:*

Referenznummer <i>Reference number</i>	Ausgabedatum <i>Date of issue</i>
---	--------------------------------------

EN 60079-0 .....	2012 .....
------------------	------------

EN 60079-11 .....	2012 .....
-------------------	------------

Referenznummer <i>Reference number</i>	Ausgabedatum <i>Date of issue</i>
---	--------------------------------------

EN 60079-7 .....	2007 .....
------------------	------------

EN 60079-31 .....	2009 .....
-------------------	------------

Die Konformität mit der Richtlinie 2004/108/EG wird nachgewiesen durch die Bewertung in folgendem technischen Bericht (Industriebereich):

*Conformity to the Directive 2004/108/EC is assured through the following technical assessment report (industrial environments):*

Dokumentennummer <i>document number</i>
--

13-E005643-BE-A01

Firma, Abteilung <i>company, department</i>
--

Siemens AG, I IA CE SE R&D EMC

Datum <i>date</i>
----------------------

11.02.2013

Siemens Aktiengesellschaft

Fürth

*Ort / place of issue*

19.05.2014

*Datum / Date of issue*

*Name / name*

*Unterschrift / signature*

Head I IA CE SE CEN  
*Funktion / function*

**Werner Streeb**

Ernst Pfitzinger  
*Name / name*

*Unterschrift / signature*

Head I IA CE SE R&D  
*Funktion / function*

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie. Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

*This declaration certifies the compliance with the indicated directives but does not imply any warranty for properties. The safety instructions of the accompanying product documentation shall be observed.*



## Translation

# EC-Type Examination Certificate

(1)

(2)

**- Directive 94/9/EC -**  
**Equipment and protective systems intended for use**  
**in potentially explosive atmospheres**

(3)

## BVS 04 ATEX E 157

(4)

**Equipment:** Decentral peripheral unit type 6DL2804-1\*\*00

(5)

**Manufacturer:** Siemens AG

(6)

**Address:** 76162 Karlsruhe, Germany

(7)

The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8)

The certification body of EXAM BBG Prüf- und Zertifizier-GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.  
The examination and test results are recorded in the test and assessment report BVS PP 04.2148 EG.

(9)

The Essential Health and Safety Requirements are assured by compliance with  
EN 50014:1997 + A1 – A2 General requirements  
EN 50019:2000 Increased Safety 'e'  
EN 50020:2002 Intrinsic Safety 'i'  
EN 50028:1987 Encapsulation 'm'  
EN 50281-1-1:1998 + A1 Dust explosion protection

(10)

If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11)

This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.  
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12)

The marking of the equipment shall include the following:



**II 2 (1) G EEx ed [ib/ia] IIB/IIC T4**

or

**II 2 (1) G EEx edm [ib/ia] IIB/IIC T4**

type 6DL2804-1A\*00



**II 2D IP65 T 130 °C**

type 6DL2804-1D\*00

**EXAM BBG Prüf- und Zertifizier GmbH**

Bochum, dated 2004-09-22

Signed: Dr. Eickhoff

Signed: Schumann

Certification body

Special services unit

(13)

Appendix to

(14)

# EC-Type Examination Certificate

## BVS 04 ATEX E 157

(15)

### 15.1 Subject and type

Decentral peripheral unit type 6DL2804-1\*\*00

A	dimensions: 400 x 600 x 230
B	dimensions: 400 x 800 x 230
C	dimensions: 400 x 1050 x 230
A	Gas
D	Dust

### 15.2 Description

The decentral peripheral unit type 6DL2804-1\*\*00 serves as a control, switching and distribution unit.

It consists of the following components:

- the separately certified mounting enclosure type 6DL2804-0A\*00 (DMT 02 ATEX E 249U)
- the separately certified base construction of the decentral peripheral system type ET 200iS (PTB 01 ATEX 2119)
- the power supply module type PS (PTB 01 ATEX 2121)
- the interface module type IM 151-2 (PTB 01 ATEX 2122)

and, depending on the individual version, optionally of the following components:

- module 2AO I, type 6ES7 135-5RB00-0AB0 (KEMA 01 ATEX 1155 X)
- module 2AO I HART, type 135-5TB00-0AB0 (KEMA 01 ATEX 1155 X)
- module 2AI TC, type 6ES7 134-5SB00-0AB0 (KEMA 01 ATEX 1154 X)
- module 2AI 4WIRE, type 6ES7 134-5RB50-0AB0 (KEMA 01 ATEX 1151 X)
- module 2AI 4WIRE, type 6ES7 134-5TB50-0AB0 (KEMA 01 ATEX 1151 X)
- module 2AI 2WIRE, type 6ES7 134-5RB500-0AB0 (KEMA 01 ATEX 1152 X)
- module 2AI 2WIRE, type 6ES7 134-5TB500-0AB0 (KEMA 01 ATEX 1152 X)
- module 2DO, type 6ES7 132-5SB50-0AB0 (KEMA 01 ATEX 1156 X)
- module 4DINAMUR, type 6ES7 131-5RD00-0AB0 (KEMA 01 ATEX 1150 X)
- fuses type 8560/..., made by Stahl (PBT 99 ATEX 2158 U)
- terminals Phoenix, UK6N or UK2.5N (KEMA 98 ATEX 1651 U)
- control and regulating component type 07-7311-97WP/..., made by Bartec (PTB 97 ATEX 1068 U)
- optical-inductive plug connection BARTEC-SEKOPIA with socket type 17-21S1-B11./... and plug type 17-21S1-/... or type 17-21S1-S11./..., made by Bartec (KEMA 01 ATEX 2001 X)

For type 6DL2804-1A\*00 there also the following optional components:

- indicator light for panel mounting type 8013/3.1-...- and type 8013/3.3, made by R. Stahl (PTB 02 ATEX 2131 X)
- push button for panel-mounting type 8003/1.1-...- and 8003/1.3-...- , made by R. Stahl (PTB 02 ATEX 1057 X)

When constructing the decentral peripheral unit type 6DL2804-1\*\*00 the total power dissipation is designed in such a manner that the thermal limit values are observed.

### 15.3 Parameters

15.3.1 Electrical parameters as stated in the pertinent EC-Type Examination Certificates (see '15.2 Description')

15.3.2 Thermal parameters

15.3.2.1 Maximum surface temperature T +130 °C

15.3.2.2 Ambient temperature range / max. power dissipation

Ambient temperature of the enclosure	Possible power dissipation at freely suspended enclosure		
	Type 6DL2804-1*A00	Type 6DL2804-1*B00	Type 6DL2804-1*C00
-20 °C to 50°C	18W	21W	23W
-20 °C to 45°C	29W	36W	42W
-20 °C to 40°C	42W	50W	57W
-20 °C to 35°C	54W	61W	78W
-20 °C to 30°C	63W	80W	97W

Max. inside temperature of the enclosure +60 °C

15.3.2.3 Temperature class T4

15.3.3 Degrees of ingress protection according to EN 60529 IP65

15.3.3.1 Only for type 6DL2804-1A\*00 when using breather type 8162, made by Stahl (PTB 00 ATEX 1018) IP54

(16) Test and assessment report

BVS PP 04.2148 EG, as of 2004-09-22

(17) Special conditions for safe use

Not relevant

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14

DEKRA EXAM GmbH

  
Certification body

  
Special services unit





## Translation

# 1<sup>st</sup> Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

## to the EC-Type Examination Certificate BVS 04 ATEX E 157

**Equipment:** Decentral peripheral unit type 6DL2804-1\*\*\*0

**Manufacturer:** Siemens AG

**Address:** D-76162 Karlsruhe, Germany

### Description

The mechanical construction of the mounting enclosure type 6DL2804-0A\*00 (DMT 02 ATEX E 249 U) that belongs to the decentral peripheral unit type 6DL2804-1\*\*\*0 was modified (see 1<sup>st</sup> Supplement of 09.09.2004 and 2<sup>nd</sup> Supplement of 17.06.2005). Thus the type label of the decentral peripheral unit type 6DL2804-1\*\*\*0 has changed.

Optionally, the separately certified base construction of the decentral peripheral system type ET 200iSP (KEMA 04 ATEX 2242) can be used together with the following components: the power supply module type 6ES7138-7EA00-0AA0 (KEMA 04 ATEX 2263) and the interface module IM 153 type 6ES7152-1AA0-0AB0 (KEMA 04 ATEX 1243).

To the optional variations available so far the following are added:

- module 8DI, type 6ES7131-7RF00-0AB0 (KEMA 04 ATEX 1248)
- module 4DO, type 6ES7132-7RD10-7RD20-0AB0 (KEMA 04 ATEX 1249)
- module 4AO HART, type 6ES7135-7TD00-0AB0 (KEMA 04 ATEX 1250)
- module 4AI TC, type 6ES7134-7SD00-0AB0 (KEMA 04 ATEX 1246)
- module 4AI 4Wire HART, type 6ES7134-7TD50-0AB0 (KEMA 04 ATEX 1245)
- module 4AI 2Wire, type 6ES7134-7SD00-0AB0 (KEMA 04 ATEX 1244)
- module 4AI RTD, type 6ES7134-7SD50-0AB0 (KEMA 04 ATEX 1247)
- spare module, type 6ES7138-7AA00-0AA0 (KEMA 04 ATEX 1251)
- isolating terminal made by Bartec type 07-7311-6131/EE00 (PTB 99 ATEX 1020 U)
- optical fibre coupler made by Stahl type 9372/11 (PTB 02 ATEX 2054)
- miniature switching relay made by Stahl type 8208 (PTB 01 ATEX 1066 U)

When constructing the decentral peripheral unit type 6DL2804-1\*\*\*0 the total power dissipation is designed in such a manner that the thermal limit values are observed.

The full type coding is:

Decentral peripheral unit type 6DL2804-1\*\*\*0





- |   |                                  |
|---|----------------------------------|
| 3 | with three lines of cable glands |
| 5 | with five lines of cable glands  |
| A | dimensions: 400 x 600 x 230      |
| B | dimensions: 400 x 800 x 230      |
| C | dimensions: 400 x 1050 x 230     |
| D | dimensions: 450 x 650 x 230      |
| E | dimensions: 450 x 950 x 230      |
| A | Gas                              |
| D | Dust                             |



The Essential Health and Safety Requirements are assured by compliance with

EN 50014:1997 + A1–A2	General requirements
EN 50019:2000	Increased Safety 'e'
EN 50020:2002	Intrinsic Safety 'i'
EN 50028:1987	Encapsulation 'm'
EN 50281-1-1:1998 + A1	Dust explosion protection

The marking of the equipment shall include the following:

 **II 2 (1) G EEx ed [ib/ia] IIB/IIC T4** or type 6DL2804-1A\*\*0  
**II 2 (1) G EEx edm [ib/ia] IIB/IIC T4**  
 **II 2D IP65 T 130 °C** type 6DL2804-1D\*\*0

#### Parameters

Electrical parameters as stated in the pertinent EC-Type Examination Certificates (see 'Description')

#### Thermal parameters

Maximum surface temperature T +130 °C

Ambient temperature range / max. power dissipation

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure		
		Type 6DL2804-1*A00	Type 6DL2804-1*B00	Type 6DL2804-1*C00
- 20 °C to 50°C	+ 60 °C	18W	21W	23W
- 20 °C to 45°C	+ 60 °C	29W	36W	42W
- 20 °C to 40°C	+ 60 °C	42W	50W	57W
- 20 °C to 35°C	+ 60 °C	54W	61W	78W
- 20 °C to 30°C	+ 60 °C	63W	80W	97W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure
		Type 6DL2804-1*D*0
- 20 °C to 59°C	+ 70 °C	24W
- 20 °C to 54°C	+ 70 °C	37W
- 20 °C to 50°C	+ 70 °C	49W
- 20 °C to 41°C	+ 70 °C	73W
- 20 °C to 33°C	+ 70 °C	100W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure
		Type 6DL2804-1*E*0
- 20 °C to 52°C	+ 70 °C	35W
- 20 °C to 47°C	+ 70 °C	50W
- 20 °C to 45°C	+ 70 °C	60W
- 20 °C to 42°C	+ 70 °C	75W
- 20 °C to 40°C	+ 70 °C	80W
- 20 °C to 39°C	+ 70 °C	90W

Temperature class

T4

Degrees of ingress protection according to EN 60529

IP65

Only for type 6DL2804-1A\*00 when using breather type 8162, made by Stahl (PTB 00 ATEX 1018)

IP54

# Test and assessment report

BVS PP 04.2148 EG, as of 2005-06-17

## EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 2005-06-17

Signed: Dr. Jockers

Signed: Dr. Eickhoff

Certification body

Special services unit

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14

DEKRA EXAM GmbH



Certification body



Special services unit





Translation

## 2<sup>nd</sup> Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

### to the EC-Type Examination Certificate BVS 04 ATEX E 157

**Equipment:** Decentral peripheral unit type 6DL2804-1\*\*\*0

**Manufacturer:** Siemens AG

**Address:** D-76162 Karlsruhe, Germany

#### Description

The mechanical construction of the mounting enclosure type 6DL2804-0A\*00 (DMT 02 ATEX E 249 U including 1<sup>st</sup> Supplement of 09.09.2004 and 2<sup>nd</sup> Supplement of 17.06.2005) that belongs to the decentral peripheral unit type 6DL2804-1\*\*\*0 was modified (see 3<sup>rd</sup> Supplement of 14.08.2006).

The power supply module of ET200iSP is replaced by the type 6ES7138-7EA01-0AA0 (2<sup>nd</sup> Supplement to KEMA 04 ATEX 2263).

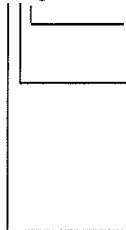
To the optional variations available so far the following are added:

- repeater / coupler type 17-6583-3 made by BARTEC (IBExU05ATEX1074) and type 07-7311-.../... made by BARTEC (PTB 97 ATEX 1068 U)
- components for lightning protection made by Dehn  
BCT BAS EX, BXT ML4 BD Ex 24, BXT ML4 BC Ex24 (KEMA 06ATEX0274 X)  
BCT MOD MD HFD EX 6, Blitzductor (PTB 02 ATEX 2162)  
Netz-AK/1+1/ÜS/FM/Exd (PTB 03 ATEX 1135 U)
- temperature transmitter made by WIKA type 32.\*\* (DMT 98 ATEX E 007 X)
- temperature transmitter made by Siemens type TH100, 7NG3211-0AN00 (PTB 05 ATEX 2049 X)
- electronics module made by Bürkert type 8650 (KEMA 06ATEX0093)
- heater type HCS, HCM, HCL type 27-2.6.- made by BARTEC (PTB 03 ATEX 1139 X) and HFS 27-2.53-7, made by BARTEC (PTB 03 ATEX 1221 X)

When constructing the decentral peripheral unit type 6DL2804-1\*\*\*0 the total power dissipation is designed in such a manner that the thermal limit values are observed.

## Type coding:

Decentral peripheral unit type 6DL2804-1\*\*\*0



- 3 with three lines of cable glands
- 5 with five lines of cable glands
- A dimensions: 400 x 600 x 230
- B dimensions: 400 x 800 x 230
- C dimensions: 400 x 1050 x 230
- D dimensions: 450 x 650 x 230
- E dimensions: 450 x 950 x 230
- A Gas
- D Dust

## Parameters

Electrical parameters as stated in the pertinent EC-Type Examination Certificates (see 'Description')

Thermal parameters

Maximum surface temperature T

+130 °C

Ambient temperature range / max. power dissipation

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure		
		Type 6DL2804-1*A*0	Type 6DL2804-1*B*0	Type 6DL2804-1*C*0
-20 °C to 50°C	+60 °C	18W	21W	23W
-20 °C to 45°C	+60 °C	29W	36W	42W
-20 °C to 40°C	+60 °C	42W	50W	57W
-20 °C to 35°C	+60 °C	54W	61W	78W
-20 °C to 30°C	+60 °C	63W	80W	97W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure	
		Type 6DL2804-1*D*0	
-20 °C to 59°C	+70 °C	24W	
-20 °C to 48°C	+55°C		
-20 °C to 54°C	+70 °C	37W	
-20 °C to 41°C	+55°C		
-20 °C to 50°C	+70 °C	49W	
-20 °C to 30°C	+55 °C		
-20 °C to 41°C	+70 °C	73W	
-20 °C to 33°C	+70 °C	100W	

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure
		Type 6DL2804-1*E*0
-20 °C to 43°C	+55 °C	25W
-20 °C to 52°C	+70 °C	35W
-20 °C to 37°C	+55 °C	
-20 °C to 47°C	+70 °C	50W
-20 °C to 32°C	+55 °C	
-20 °C to 45°C	+70 °C	60W
-20 °C to 42°C	+70 °C	75W
-20 °C to 40°C	+70 °C	80W
-20 °C to 39°C	+70 °C	90W

Temperature class

T4

Degrees of ingress protection according to EN 60529

IP65

Only for type 6DL2804-1A\*00 when using breather type 8162, made by Stahl (PTB 00 ATEX 1018)

IP54

The Essential Health and Safety Requirements are assured by compliance with

EN 50014:1997 + A1-A2	General requirements
EN 50019:2000	Increased Safety 'e'
EN 50281-1-1:1998 + A1	Dust explosion protection

Among others, the standard EN 50019:2000, Increased Safety 'e', applies to the decentral peripheral unit type 6DL2804-1\*\*\*0; thus the essential requirements of Directive 94/9/EC continue to be met by this apparatus.

The marking of the equipment shall include the following:



**II 2 (1) G EEx ed [ib/ia] IIB/IIC T4**  
**II 2 (1) G EEx edm [ib/ia] IIB/IIC T4**

or

type 6DL2804-1A\*\*0



**II 2D IP65 T 130 °C**

type 6DL2804-1D\*\*0

Test and assessment report

BVS PP 04.2148 EG, as of 2007-03-20

Special conditions for safe use

None

# **EXAM BBG Prüf- und Zertifizier GmbH**

Bochum, dated 2007-03-20

Signed: Dr. Jockers

Signed: Dr. Eickhoff

Certification body

Special services unit

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14

**DEKRA EXAM GmbH**

*[Signature]*

Certification body

*[Signature]*

Special services unit



## Translation

# 3<sup>rd</sup> Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

## to the EC-Type Examination Certificate BVS 04 ATEX E 157

**Equipment:** Decentral peripheral unit type 6DL2804-\*\*\*\*\*

**Manufacturer:** Siemens AG

**Address:** D-76187 Karlsruhe, Germany

### Description

The decentral peripheral unit may also be manufactured according to the testing documents listed in the pertinent test and assessment report; then it shall be labelled as follows:

### Type 6DL2804-\*\*\*\*\*

In the full type coding the asterisks will be replaced by digits or letters which mark the different variations:

Decentral peripheral unit type 6DL2804-\*\*\*\*\*

- 0 temperature range down to -20 °C
- 1 temperature range down to -30 °C
- 2 temperature range down to -20 °C
- 6 temperature range down to -20 °C

- 1 with one line of cable glands (for M2)
- 2 with two lines of cable glands (for M2)
- 3 with three lines of cable glands KLE M16
- 4 with three lines of cable glands KLE M20
- 5 with five lines of cable glands KLE M16
- 6 with five lines of cable glands KLE M20

- D dimensions: 650 x 450 x 230
- E dimensions: 950 x 450 x 230
- F dimensions: 650 x 450 x 350
- G dimensions: 950 x 450 x 350

- A Gas
- D Dust
- M Category M2

- 1 Components w/o electro-pneumatic system
- 2 Components with electro-pneumatic system



The mechanical construction of the mounting enclosure type 6DL2804-0\*\*00 (DMT 02 ATEX E 249 U including 1<sup>st</sup> Supplement of 09.09.2004, 2<sup>nd</sup> Supplement of 17.06.2005 and 3<sup>rd</sup> Supplement of 14.08.2006) that belongs to the decentral peripheral unit type 6DL2804-\*\*\*\*\* was modified (see 4<sup>th</sup> Supplement of 09.04.2009).

The enclosure was examined based on the standards of series EN 60079-\* and of series EN 61241-\*

The standards which were applied to the possible built-in components have been defined in the pertinent EC-Type Examination Certificates.

To the optional variations available so far the following are added:


- terminal module type 6ES7193-7CB00-0AA0 (KEMA 07 ATEX 0205)
- module type 6ES7132-7HB00-0AB0 (KEMA 07 ATEX 0180)
- module type 6ES7132-7RD01-0AB0, type 6ES7132-7RD11-0AB0, type 6ES7132-7RD21-0AB0, type 6ES7132-7GD00-0AB0, type 6ES7132-7GD10-0AB0 or type 6ES7132-7GD20-0AB0 (KEMA 04 ATEX 1249)
- module type 6ES7134-7SD51-0AB0 (KEMA 07 ATEX 1247)
- module type 6ES7138-7BB00-0AA0 (KEMA 06 ATEX 0086)
- multifunctional terminal type MFT-..... (PTB 07 ATEX 1004 U)
- optical fibre safety barrier type 9186/12-11-1\* (BVS 06 ATEX E 145 X)
- thermostat type 27-6B11-2210BZ00 (PTB 04 ATEX 2113 X)
- solenoid coils type 71583 (EX5 06 04 13277 073)
- valve island type CPV 10-EX-VI (TÜV 06 ATEX 7334 X)
- power supply unit type 07-7331-..... (PTB 97 ATEX 1066 U)

Where the decentral peripheral unit type 6DL2804-\*M\*2\* is used in Category M2, the modules intended for use are operated at the same electrical parameters as those defined for the built-in components used in Category 2G.

The Essential Health and Safety Requirements of the modified variant are assured by compliance with:

- |                 |                               |
|-----------------|-------------------------------|
| EN 60079-0:2006 | General requirements          |
| EN 60079-7:2007 | Increased Safety 'e'          |
| EN 61241-0:2006 | General requirements          |
| EN 61241-1:2004 | Protection by Enclosures 'tD' |

The marking of the component shall include the following:

	<p><b>II 2 (1) G Ex e d [ib/ia] IIB/IIC T4</b></p> <p><b>II 2 (1) G Ex e d m [ib/ia] IIB/IIC T4</b></p> <p><b>I M2 Ex e d [ib/ia] I</b> bzw.</p> <p><b>I M2 Ex e d m [ib/ia] I</b></p> <p><b>II 2D Ex tD A21 IP65 T130°C</b></p>	<p>or</p> <p>type 6DL2804-*A***</p> <p>type 6DL2804-*M***</p> <p>type 6DL2804-*D***</p>
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#### Parameters

- |  |  |
|--|--|
| <p>1 Electrical parameters as stated in the pertinent EC-Type Examination Certificates (see 'Description')</p> <p>2 Thermal parameters</p> | <p>Maximum surface temperature T for type 6DL2804-*D*** +130 °C</p> <p>Temperature class for type 6DL2804-*A*** T4</p> |
|--|--|

Ambient temperature range / max. power dissipation

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**D** Type 6DL2804-**F**
-20 °C to 59°C	+70 °C	24W
-20 °C to 54°C	+70 °C	37W
-20 °C to 50°C	+70 °C	49W
-20 °C to 41°C	+70 °C	73W
-20 °C to 33°C	+70 °C	100W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**E** Type 6DL2804-**G**
-20 °C to 52°C	+70 °C	35W
-20 °C to 47°C	+70 °C	50W
-20 °C to 45°C	+70 °C	60W
-20 °C to 42°C	+70 °C	75W
-20 °C to 40°C	+70 °C	80W
-20 °C to 39°C	+70 °C	90W

Ambient temperature range  $T_a$  for type 6DL2804-2\*\*\*\*

-20 °C to +50 °C

3 Degrees of ingress protection according to EN 60529

IP65

Only for type 6DL2804-1A\*00 when using  
breather type 8162, made by Stahl (PTB 00 ATEX 1018)

IP54

Special conditions for safe use

None

Test and assessment report

BVS PP 04.2148 EG, as of 2009-05-18

**DEKRA EXAM GmbH**

Bochum, dated 2009-05-18

Signed: Simanski

Signed: Dr. Eickhoff

Certification body

Special services unit

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14

Certification body

Special services unit



Translation

## 4<sup>th</sup> Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

### to the EC-Type Examination Certificate BVS 04 ATEX E 157

**Equipment:** Decentral peripheral unit type 6DL2804-\*\*\*\*\*

**Manufacturer:** Siemens AG

**Address:** 76187 Karlsruhe, Germany

#### Description

The decentral peripheral unit may also be manufactured according to the testing documents listed in the pertinent test and assessment report.

Additional modules will be installed into the enclosure of the decentral peripheral unit type 6DL2804-\*\*\*\*\*.

The standards which were applied to the possible built-in components have been defined in the pertinent EC-Type Examination Certificates.

To the optional variations available so far the following are added:

power supply unit type 6ES7-138-7CE00-0AA0

(KEMA 09ATEX0156)

thermometer type TR...X bzw. TC...X

(TÜV 02 ATEX 1793 X)

Where the decentral peripheral unit type 6DL2804-\*M\*2\* is used in Category M2, the modules intended for use are operated at the same electrical parameters as those defined for the built-in components used in Category 2G.

The Essential Health and Safety Requirements of the modified variant are assured by compliance with:

EN 60079-0:2006 General requirements

EN 60079-7:2007 Increased Safety 'e'

EN 60079-11:2007 Intrinsic Safety 'i'

EN 61241-0:2006 General requirements

EN 61241-1:2004 Protection by Enclosures 'tD'



The marking of the component shall include the following:



II 2 (1) G Ex e d ib [ia] IIB/IIC T4

or

type 6DL2804-\*A\*\*\*

II 2 (1) G Ex e d m ib [ia] IIB/IIC T4

or

type 6DL2804-\*M\*\*\*

I M2 Ex e d ib [ia] I

I M2 Ex e d m ib [ia] I

II 2D Ex tD A21 IP65 T130°C

type 6DL2804-\*D\*\*\*

Special conditions for safe use

Not relevant

Test and assessment report

BVS PP 04.2148 EG, as of 2010-05-19

**DEKRA EXAM GmbH**

Bochum, dated 2010-05-19

Signed: Simanski

Signed: Dr. Eickhoff

\_\_\_\_\_  
Certification body

\_\_\_\_\_  
Special services unit

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14

\_\_\_\_\_  
Certification body

\_\_\_\_\_  
Special services unit



## Translation

# 5<sup>th</sup> Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

## to the EC-Type Examination Certificate BVS 04 ATEX E 157

**Equipment:** Decentral peripheral unit type 6DL2804-\*\*\*\*\*

**Manufacturer:** Siemens AG

**Address:** 76187 Karlsruhe, Germany

### Description

The decentral peripheral unit may also be manufactured according to the testing documents listed in the pertinent test and assessment report.

Additional modules will be installed into the enclosure of the decentral peripheral unit type 6DL2804-\*\*\*\*\*.

The standards which were applied to the possible built-in components have been defined in the pertinent EC-Type Examination Certificates.

To the optional variations available so far the following are added:

modules 4DO, types 6ES7132-7RD...-0AB0 und 6ES7132-7GD...-0AB0	(KEMA 04ATEX1249)
modules 8F DI, type 6ES7138-7FN00-0AB0	(KEMA 10ATEX0056)
modules 4F DO, type 6ES7138-7FD00-0AB0	(KEMA 10ATEX0057)
modules 4F AI, type 6ES7138-7FA00-0AB0	(KEMA 10ATEX0058)
protection switch type 8562/5...-...	(PTB 02 ATEX 1049 U)
optical fibre coupler type OC11EX/2G...	(PTB 05 ATEX 2051 X)
plug connection type 8591/.....-.....	(PTB 03 ATEX 1097 X)
plug connection type GHG 57..	(PTB 03 ATEX 1016 X)

Where the decentral peripheral unit type 6DL2804-\*M\*2\* is used in Category M2, the modules intended for use are operated at the same electrical parameters as those defined for the built-in components used in Category 2G.

The Essential Health and Safety Requirements of the modified variant are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-7:2007	Increased Safety 'e'
EN 60079-11:2007	Intrinsic Safety 'i'
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by Enclosures 'tD'

The marking of the component shall include the following:



II 2 (1) G Ex e d ib [ia] IIB/IIC T4  
 II 2 (1) G Ex e d m ib [ia] IIB/IIC T4  
 I M2 Ex e d ib [ia] I  
 I M2 Ex e d m ib [ia] I  
 II 2D Ex tD A21 IP65 T130°C

or type 6DL2804-\*A\*\*\*  
 or type 6DL2804-\*M\*\*\*  
 type 6DL2804-\*D\*\*\*

Special conditions for safe use

Not relevant

Test and assessment report

BVS PP 04.2148 EG, as of 2011-01-04

**DEKRA EXAM GmbH**

Bochum, dated 2011-01-07

Signed: Dr. Eickhoff

Signed: Dr. Wittler

\_\_\_\_\_  
 Certification body

\_\_\_\_\_  
 Special services unit

We confirm the correctness of the translation from the German original.  
 In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
 44809 Bochum, 2014-01-07  
 BVS-Schu/Ar E 3645/14

\_\_\_\_\_  
 Certification body

\_\_\_\_\_  
 Special services unit

## Translation

# (1) 6<sup>th</sup> Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use  
in potentially explosive atmospheres – Directive 94/9/EC
- (3) No. of EC-Type Examination Certificate: **BVS 04 ATEX E 157**
- (4) Equipment: **Decentral peripheral unit type 6DL2804-\*\*\*\*-Z\*\*\***
- (5) Manufacturer: **Siemens AG – Industry Sector**
- (6) Address: **Siemensallee 84, 76187 Karlsruhe, Germany**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in  
the appendix to this type examination certificate.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of  
the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this  
equipment has been found to comply with the Essential Health and Safety Requirements relating to  
the design and construction of equipment and protective systems intended for use in potentially  
explosive atmospheres, given in Annex II to the Directive. The examination and test results are  
recorded in the test and assessment report BVS PP 04.2148 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with
- |                  |                              |
|------------------|------------------------------|
| EN 60079-0:2012  | General requirements         |
| EN 60079-7:2007  | Increased Safety 'e'         |
| EN 60079-11:2012 | Intrinsic Safety 'i'         |
| EN 60079-31:2009 | Protection by Enclosures 't' |
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special  
conditions for safe use specified in the appendix to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified  
equipment in accordance to Directive 94/9/EC.  
Further requirements of the Directive apply to the manufacturing process and supply of this  
equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:



**II 2 (1) G Ex e d ib [ia Ga] IIB/IIC T4 Gb** or type 6DL2804-\*A\*\*\*-Z\*\*\*  
**II 2 (1) G Ex e d mb ib [ia Ga] IIB/IIC T4 Gb**  
**I M2 Ex e d ib [ia Ma] I Mb** or type 6DL2804-\*M\*\*\*-Z\*\*\*  
**I M2 Ex e d mb ib [ia Ma] I Mb**  
**II 2 (1) D Ex tb IIIC [ia Da] T130°C Db** type 6DL2804-\*D\*\*\*-Z\*\*\*

DEKRA EXAM GmbH  
Bochum, dated 2014-04-02

Signed: Simanski

Certification body

Signed: Dr. Eickhoff

Special services unit

- (13) Appendix to
- (14) **6<sup>th</sup> Supplement to the EC-Type Examination Certificate  
BVS 04 ATEX E 157**
- (15) 15.1 Subject and type

Decentral peripheral unit type 6DL2804-\*\*\*\*\*-Z\*\*\*

In the full type coding the asterisks will be replaced by digits or letters which mark the different variations:

Decentral peripheral unit type 6DL2804-\*\*\*\*-Z\*\*\*

### Additional details for special variant

0 to 9 cable glands (properties)  
1 = extended temperature range down to -40 °C  
(in conjunction with a heater installed)

0 to 9 cable glands (number, size)

Enclosure size

D dimensions: 650 x 450 x 230

E dimensions: 950 x 450 x 230

F dimensions: 650 x 450 x 350

G dimensions: 950 x 450 x 350

K dimensions: 800 x 800 x 300

T dimensions: 1000 x 1000 x 300

U dimensions: 1000 x 1200 x 300

M dimensions: 800 x 1000 x 300

A Gas category 2G

D Dust category 2D

M Mining category M2

\_\_\_\_\_

1 Components w/o electro-pneumatic system  
2 Components with electro-pneumatic system

## 15.2 Description

The decentral peripheral unit may also be manufactured according to the testing documents listed in the pertinent test and assessment report.

The possible built-in modules and the components to be built into the enclosure wall (such as switches, push buttons, indicator lights) are defined in the list 'Einbaubare Komponenten\_N6\_260214.xlsx' [components suitable for installation].

Where the decentral peripheral unit type 6DL2804-\*M\*2\*-Z\*\*\* is used in Category M2, the modules intended for use are operated at the same electrical parameters as those defined for the built-in components used in Category 2G.

### 15.3 Parameters

### 15.3.1 Electrical parameters

As stated in the pertinent EC-Type Examination Certificates of the modules installed

### 15.3.2 Thermal parameters

Maximum surface temperature T for type 6DL2804-\*D\*\*\* +130 °C

Temperature class for type 6DL2804-\*A\*\*\* T4



# Ambient temperature range / max. power dissipation

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**D**-Z*** Type 6DL2804-**F**-Z***
-20 °C to 58°C	+70 °C	25W
-20 °C to 50°C	+70 °C	50W
-20 °C to 41°C	+70 °C	75W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**E**-Z*** Type 6DL2804-**G**-Z***
-20 °C to 58°C	+70 °C	25W
-20 °C to 51°C	+70 °C	50W
-20 °C to 44°C	+70 °C	75W
-20 °C to 37°C	+70 °C	100W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**K**-Z*** Type 6DL2804-**M**-Z***
-20 °C to 52°C	+70 °C	75W
-20 °C to 47°C	+70 °C	100W
-20 °C to 42°C	+70 °C	125W
-20 °C to 37°C	+70 °C	150W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**T**-Z***
-20 °C to 53°C	+70 °C	85W
-20 °C to 48°C	+70 °C	125W
-20 °C to 43°C	+70 °C	170W
-20 °C to 37°C	+70 °C	210W

Ambient temperature of the enclosure	Max. temperature inside the enclosure	Possible power dissipation at freely suspended enclosure Type 6DL2804-**U**-Z***
-20 °C to 53°C	+70 °C	100W
-20 °C to 48°C	+70 °C	150W
-20 °C to 43°C	+70 °C	200W
-20 °C to 37°C	+70 °C	250W

Ambient temperature range  $T_a$  for type 6DL2804-2\*\*\*\*-Z\*\*\* -20 °C to +50 °C

Ambient temperature range  $T_a$  for type 6DL2804-AM\*\*-Z\*\*\*  
and type 6DL2804-DM\*\*-Z\*\*\* -30 °C to +\*\* °C

It is not possible to operate at an ambient temperature of less than -20 °C if a heater is installed. In this case a waiting period has to be observed between switching off and opening the equipment, respectively, and switching the heater on again and switching on the other components. Instructions on this can be found in the manual.

15.3.3 Degrees of ingress protection according to EN 60529 for Category 2D IP6x

- (16) Test and assessment report  
BVS PP 04.2148 EG, as of 2014-04-02
- (17) Special conditions for safe use  
Not relevant

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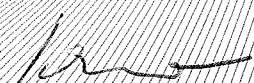
We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 2014-04-11  
BVS-Schu/Ar E 3645/14



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Certification body



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Special services unit