Manual

AUTOMATION

# WAGO-I/O-SYSTEM 750

## Module Bus Extension End Module

# 750-627

Version 1.0.2

WAGO® INNOVATIVE CONNECTIONS

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally protected by trademark or patent.

# Table of Contents

# 1 Notes about this Documentation

**Note**

**Keep this documentation!**
The operating instructions are part of the product and shall be kept for the entire lifetime of the device. They shall be transferred to each subsequent owner or user of the device. Care must also be taken to ensure that any supplement to these instructions are included, if applicable.

## 1.1 Validity of this Documentation

This documentation is only applicable to the I/O module 750-627 (Module Bus Extension End Module) of the WAGO-I/O-SYSTEM 750 series.

The I/O module 750-627 shall only be installed and operated according to the instructions in this manual and in the manual for the used fieldbus coupler/controller.

**NOTICE**

**Consider power layout of the WAGO-I/O-SYSTEM 750!**
In addition to these operating instructions, you will also need the manual for the used fieldbus coupler/controller, which can be downloaded at www.wago.com. There, you can obtain important information including information on electrical isolation, system power and supply specifications.

## 1.2 Copyright

## 1.3 Symbols

**DANGER**

**Personal Injury!**
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

**DANGER**

**Personal Injury Caused by Electric Current!**
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**

**Personal Injury!**
Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

**Personal Injury!**
Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**NOTICE**

**Damage to Property!**
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

**NOTICE**

**Damage to Property Caused by Electrostatic Discharge (ESD)!**
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

**Note**

**Important Note!**
Indicates a potential malfunction which, if not avoided, however, will not result in damage to property.

**Information**

**Additional Information:**
Refers to additional information which is not an integral part of this documentation (e.g., the Internet).

## 1.4 Number Notation

Table 1: Number Notation

| Number code | Example | Note |
|---|---|---|
| Decimal | 100 | Normal notation |
| Hexadecimal | 0x64 | C notation |
| Binary | '100'<br>'0110.0100' | In quotation marks, nibble separated with dots (.) |

## 1.5 Font Conventions

Table 2: Font Conventions

| Font type | Indicates |
|---|---|
| *italic* | Names of paths and data files are marked in italic-type.<br>e.g.: *C:\Programme\WAGO-I/O-CHECK* |
| **Menu** | Menu items are marked in bold letters.<br>e.g.: **Save** |
| > | A greater-than sign between two names means the selection of a menu item from a menu.<br>e.g.: **File** > **New** |
| **Input** | Designation of input or optional fields are marked in bold letters,<br>e.g.: **Start of measurement range** |
| “Value” | Input or selective values are marked in inverted commas.<br>e.g.: Enter the value “4 mA” under **Start of measurement range**. |
| **[Button]** | Pushbuttons in dialog boxes are marked with bold letters in square brackets.<br>e.g.: **[Input]** |
| **[Key]** | Keys are marked with bold letters in square brackets.<br>e.g.: **[F5]** |

# 2 Important Notes

This section includes an overall summary of the most important safety requirements and notes that are mentioned in each individual section. To protect your health and prevent damage to devices as well, it is imperative to read and carefully follow the safety guidelines.

## 2.1 Legal Bases

### 2.1.1 Subject to Changes

WAGO Kontakttechnik GmbH & Co. KG reserves the right to provide for any alterations or modifications that serve to increase the efficiency of technical progress. WAGO Kontakttechnik GmbH & Co. KG owns all rights arising from the granting of patents or from the legal protection of utility patents. Third-party products are always mentioned without any reference to patent rights. Thus, the existence of such rights cannot be excluded.

### 2.1.2 Personnel Qualifications

All sequences implemented on Series 750 devices may only be carried out by electrical specialists with sufficient knowledge in automation. The specialists must be familiar with the current norms and guidelines for the devices and automated environments.

All changes to the coupler or controller should always be carried out by qualified personnel with sufficient skills in PLC programming.

### 2.1.3 Use of the 750 Series in Compliance with Underlying Provisions

Couplers, controllers and I/O modules found in the modular WAGO-I/O-SYSTEM 750 receive digital and analog signals from sensors and transmit them to the actuators or higher-level control systems. Using programmable controllers, the signals can also be (pre-)processed.

The components have been developed for use in an environment that meets the IP20 protection class criteria. Protection against finger injury and solid impurities up to 12.5 mm diameter is assured; protection against water damage is not ensured. Unless otherwise specified, operation of the components in wet and dusty environments is prohibited.

Operating 750 Series components in home applications without further measures is only permitted if they meet the emission limits (emissions of interference) according to EN 61000-6-3. You will find the relevant information in the section on "WAGO-I/O-SYSTEM 750" → "System Description" → "Technical Data" in the manual for the used fieldbus coupler/controller.

Appropriate housing (per 94/9/EG) is required when operating the WAGO-I/O-SYSTEM 750 in hazardous environments. Please note that a prototype test certificate must be obtained that confirms the correct installation of the system in a housing or switch cabinet.

### 2.1.4 Technical Condition of Specified Devices

The components to be supplied Ex Works, are equipped with hardware and software configurations, which meet the individual application requirements. WAGO Kontakttechnik GmbH & Co. KG will be exempted from any liability in case of changes in hardware or software as well as to non-compliant usage of components.

Please send your request for modified and new hardware or software configurations directly to WAGO Kontakttechnik GmbH & Co. KG.

## 2.2 Safety Advice (Precautions)

For installing and operating purposes of the relevant device to your system the following safety precautions shall be observed:

**DANGER**

**Do not work on components while energized!**
All power sources to the device shall be switched off prior to performing any installation, repair or maintenance work.

**DANGER**

**Installation only in appropriate housings, cabinets or in electrical operation rooms!**
The WAGO-I/O-SYSTEM 750 and its components are an open system. As such, install the system and its components exclusively in appropriate housings, cabinets or in electrical operation rooms. Allow access to such equipment and fixtures to authorized, qualified staff only by means of specific keys or tools.

**NOTICE**

**Replace defective or damaged devices!**
Replace defective or damaged device/module (e.g., in the event of deformed contacts), since the long-term functionality of device/module involved can no longer be ensured.

**NOTICE**

**Protect the components against materials having seeping and insulating properties!**
The components are not resistant to materials having seeping and insulating properties such as: aerosols, silicones and triglycerides (found in some hand creams). If you cannot exclude that such materials will appear in the component environment, then install the components in an enclosure being resistant to the above-mentioned materials. Clean tools and materials are imperative for handling devices/modules.

**NOTICE**

**Cleaning only with permitted materials!**
Clean soiled contacts using oil-free compressed air or with ethyl alcohol and leather cloths.

**NOTICE**

**Do not use any contact spray!**
Do not use any contact spray. The spray may impair contact area functionality in connection with contamination.

**NOTICE**

**Do not reverse the polarity of connection lines!**
Avoid reverse polarity of data and power supply lines, as this may damage the devices involved.

**NOTICE**

**Avoid electrostatic discharge!**
The devices are equipped with electronic components that you may destroy by electrostatic discharge when you touch. Pay attention while handling the devices to good grounding of the environment (persons, job and packing).

# 3 Device Description

The internal data bus extension end module 750-627 is used together with the internal data bus extension coupler module 750-628 to divide the field bus node into several assemblies. The divided field bus node still acts as a logical unit for the field bus coupler/controller. All functions of the internal data bus system remain unchanged.

Rather than use standard end module 750-600, the internal data bus extension end module 750-627 is snapped onto the carrier rail at the end of the first I/O module assembly. The station is completed with this module. Connecting the internal data bus extension coupler module 750-628 of the next assembly is done using a cable with an RJ-45 connector. Locate the structure of a field bus node with internal data bus extension module in section “Module Bus Structure”.

Power to the internal electronics is supplied via internal data bus.

## 3.1 View

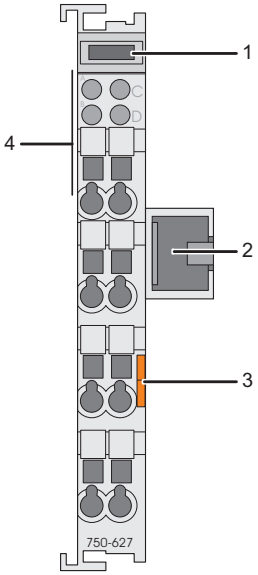


Figure 1: View

Table 3: Caption acc. to figure “View“

| No. | Designation | Description | Details see chapter |
|---|---|---|---|
| 1 | --- | Marking possibility with Mini-WSB | --- |
| 2 | --- | Bus connection, output (RJ-45 socket) | “Device Description” > “Connections” |
| 3 | --- | Release clip | “Assembly” > “Insert and remove device” |
| 4 | --- | Data contacts | “Device Description” > “Connections” |

# 3.2 Connectors

## 3.2.1 Data Contacts/Internal Bus

Communication between the coupler/controller and the bus modules as well as the system supply of the bus modules is carried out via the internal bus. It is comprised of 6 data contacts, which are available as self-cleaning gold spring contacts.

Figure 2: Data contacts

NOTICE

**Do not place the I/O modules on the gold spring contacts!**
Do not place the I/O modules on the gold spring contacts in order to avoid soiling or scratching!

NOTICE

**Ensure that the environment is well grounded!**
The modules are equipped with electronic components that may be destroyed by electrostatic discharge. When handling the modules, ensure that the environment (persons, workplace and packing) is well grounded. Avoid touching conductive components, e.g. data contacts.

Table 4: Connections

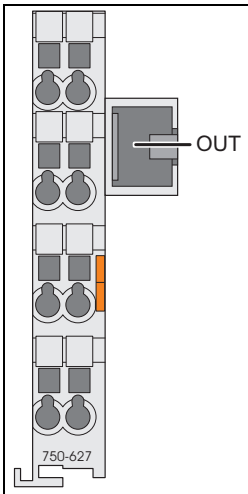

Figure 3: Connections

| Connection | Designation | Function |
|---|---|---|
| RJ-45 | OUT | Bus connection, output (RJ-45) |

## 3.3 Display Elements

The I/O module 750-627 has no display elements.

## 3.4 Operating Elements

The I/O module 750-627 has no operating elements.

# 3.5 Technical Data

## 3.5.1 Device data

Table 5: Technical data device

| | |
|---|---|
| Width | 24 mm |
| Height (from upper edge of 35 DIN rail) | 64 mm |
| Depth | 100 mm |
| Weight | Ca. 65 g |

## 3.5.2 Supply

Table 2: Technical data supply

| | |
|---|---|
| Voltage supply | Via internal bus (system voltage, 5 V DC) |
| Current via system voltage max. | 70 mA |
| Isolation | 500 V system / supply |

## 3.5.3 Interface

Table 6: Technical data interface

| | |
|---|---|
| Number of interfaces | 1 |
| Bus connection | RJ-45 socket |

## 3.5.4 Communication

Table 7: Technical data communication

| | |
|---|---|
| Number of coupler modules max. | 10 |
| Number of partial nodes max. | 11 |
| Distance between two components (end module and coupler module or coupler module and coupler module) max. | 5 m (10 m with capable copplers/controllers, see table in chapter “Module Bus Structure”) |
| Distance between all components (complete node) max. | 70 m |
| Transmission medium | Shielded copper wire (Ethernet patch cable) 4 x 2 x 0.25 $mm^2$, twisted pair, double shielding STP (Shielded Twisted-Pair) |

## 3.6 Approvals

**Information**

**More Information about Approvals**
Detailed references to the approvals are listed in the document "Overview Approvals **WAGO-I/O-SYSTEM 750**", which you can find on the DVD "AUTOMATION Tools and Docs" (order no. 0888-0412) or via the internet under: www.wago.com → Documentation → WAGO-I/O-SYSTEM 750 → System Description.

The following approvals have been granted to 750-627 I/O modules:

CE Conformity Marking

cULus (UL508)

The following Ex approvals have been granted to 750-627 I/O modules:

DEKRA
II 3 G Ex nA II T4

The following ship approvals have been granted to 750-627 I/O modules:

GL (Germanischer Lloyd) Cat. A, B, C, D (EMC 1)

## 3.7 Standards and Guidelines

750-627 I/O modules meet the following requirements on emission and immunity of interference:

| | |
|---|---|
| EMC CE-Emission of interference | acc. to EN 61000-6-4: 2007 |
| EMC CE-Immunity to interference | acc. to EN 61000-6-2: 2005 |
| ATEX guideline | acc. to EN 60079-0: 2006 and<br>acc. to EN 60079-15: 2005 |

# 4 Assembly

## 4.1 Assembly Sequence

All system components can be snapped directly on a carrier rail in accordance with the European standard EN 50022 (DIN 35).

The reliable positioning and connection is made using a tongue and groove system. Due to the automatic locking, the individual components are securely seated on the rail after installation.

Starting with the coupler/controller, the bus modules are assembled adjacent to each other according to the project design. Errors in the design of the node in terms of the potential groups (connection via the power contacts) are recognized, as the bus modules with power contacts (male contacts) cannot be linked to bus modules with fewer power contacts.

**⚠ CAUTION**

**Risk of injury due to sharp-edged male contacts!**
The male contacts are sharp-edged. Handle the module carefully to prevent injury.

**NOTICE**

**Connect the I/O modules in the required order!**
Never plug bus modules from the direction of the end terminal. A ground wire power contact, which is inserted into a terminal without contacts, e.g. a 4-channel digital input module, has a decreased air and creepage distance to the neighboring contact in the example DI4.

**NOTICE**

**Assemble the I/O modules in rows only if the grooves are open!**
Please take into consideration that some bus modules have no or only a few power jumper contacts. The design of some modules does not allow them to be physically assembled in rows, as the grooves for the male contacts are closed at the top.

**Note**

**Don't forget the bus end module!**
Always plug a bus end module 750-600 onto the end of the fieldbus node! You must always use a bus end module at all fieldbus nodes with the WAGO I/O System 750 fieldbus couplers/controllers to guarantee proper data transfer.

## 4.2 Inserting and Removing Devices

**DANGER**

**Use caution when interrupting the PE!**
Make sure that people or equipment are not placed at risk when removing an I/O module and the associated PE interruption. To prevent interruptions, provide ring feeding of the ground conductor, see section "Grounding/Ground Conductor" in manual "System Description WAGO-I/O-SYSTEM 750".

**NOTICE**

**Perform work on devices only if the system is de-energized!**
Working on devices when the system is energized can damage the devices. Therefore, turn off the power supply before working on the devices.

### 4.2.1 Inserting I/O Module

1. Position the I/O module so that the tongue and groove joints to the fieldbus coupler/controller or to the previous or possibly subsequent I/O module are engaged.

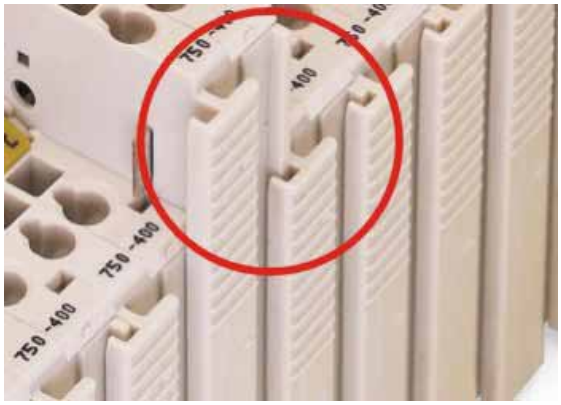


Figure 4: Insert I/O module

2. Press the I/O module into the assembly until the I/O module snaps into the carrier rail.

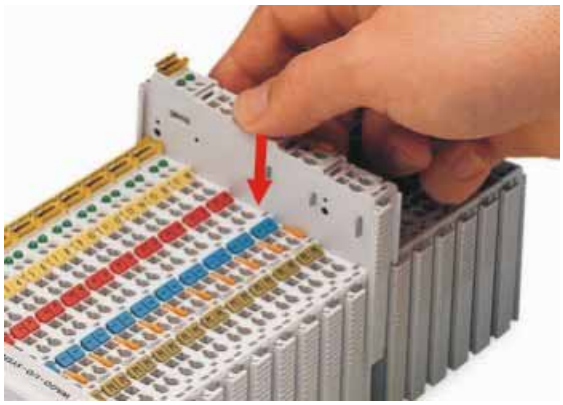

Figure 5: Snap the I/O module into place

With the I/O module snapped in place, the electrical connections for the data contacts and power contacts (if any) to the fieldbus coupler/controller or to the previous or possibly subsequent I/O module are established.

### 4.2.2 Removing the I/O Module

1. Remove the I/O module from the assembly by pulling the release tab.

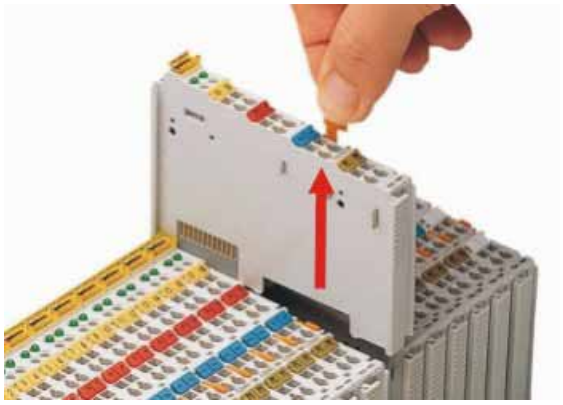

Figure 6: Removing the I/O module

Electrical connections for data or power contacts are disconnected when removing the I/O module.

# 5 Module bus structure with module bus extension

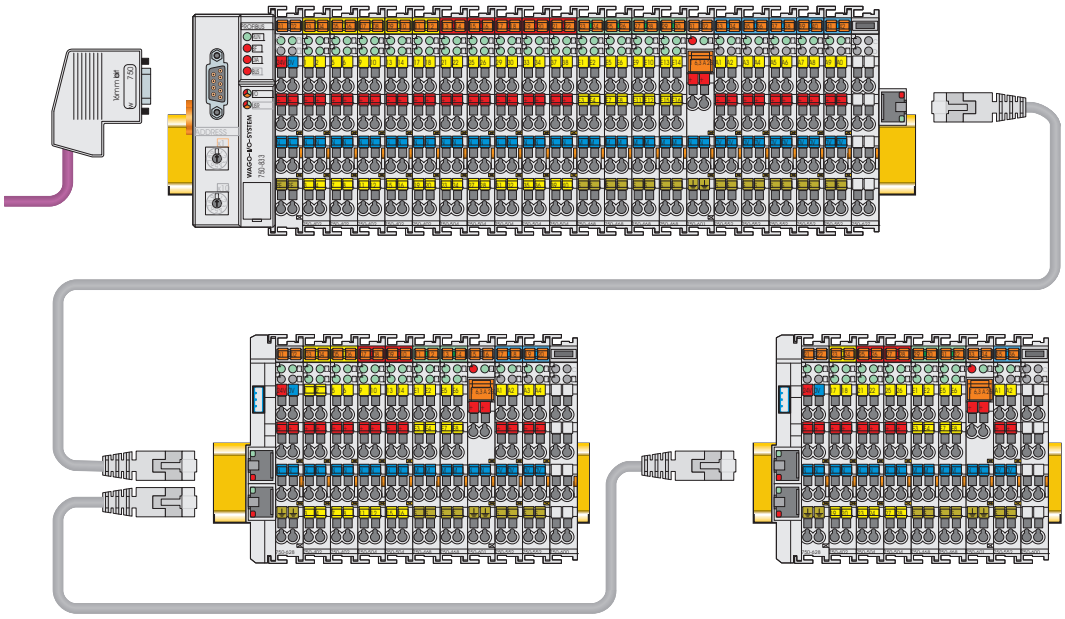

Figure 7: Module bus structure with module bus extension (example)

An Ethernet patch cable (4 x 2 x 0.25mm², twisted pair, double shielding) is used as connecting cable between the internal data bus extension modules.

The cable to the internal data bus extension end module 750-627, or to the downstream internal data bus extension coupler module 750-628, is connected to the upper RJ-45 socket of the internal data bus extension coupler module 750-628. If required, the cable can be plugged into the lower RJ-45 socket to connect an additional internal data bus extension coupler module 750-628.

**DANGER**

**Note matching resistor!**
Within the field bus node, the matching resistor must only be activated on one internal data bus extension coupler module; otherwise faulty functions of the field bus node may occur (e.g., accidental connection of outputs).

**Note**

**Connection to module bus extension end module!**
Up to 10 internal data bus extension coupler modules 750-628 can be connected to an internal data bus extension end module 750-627. This way, a field bus node can be divided into 11 assemblies maximum. The maximum cable length between two assemblies is 5 meters, or 10 meters using the suitable field bus couplers/controllers (see table below). The admissible total cable length within a field bus node is 70 meters.

**Note**

**Number of I/O modules!**
The maximum number of I/O modules within a node depends on the field bus coupler/controller used.

**Note**

**Connection to module bus extension coupler module!**
Using a hardware/software version < XXXX0103..., up to 40 I/O modules can be connected to an internal data bus extension coupler module 750-628. Using a hardware/software version >= XXXX0103..., the maximum number of I/O modules that can be connected depends on the field bus coupler/controller used.

**Note**

**Switch on matching resistor!**
If the internal data bus extension coupler module 750-628 is the last coupler module in the field bus node, the matching resistor must be switched on.

# 5.1 Power Supply Concept

The following illustration shows the power supply concept of a WAGO-I/O-SYSTEM 750 fieldbus node for the certified application according to GL/LR.

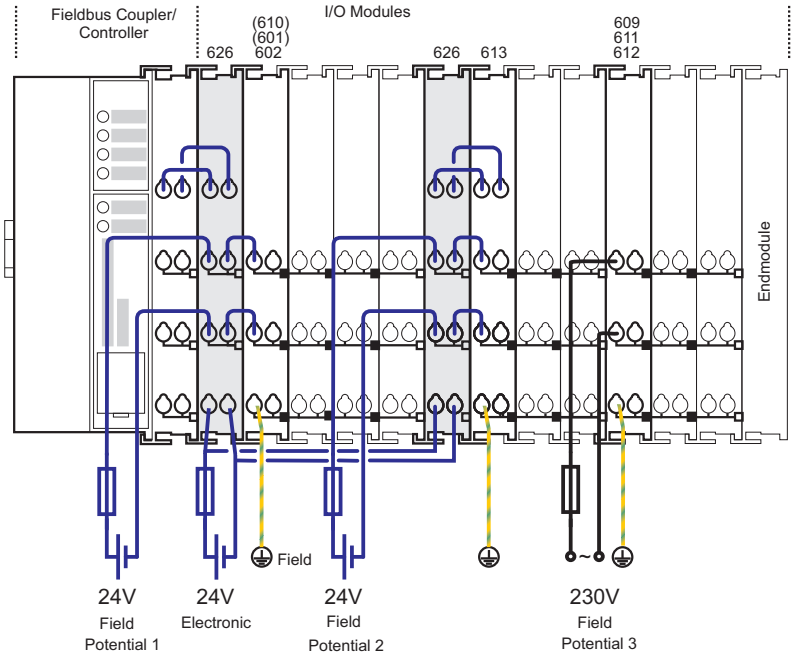


Figure 8: Power supply concept GL/LR

The 24 V system power supply of the coupler / controller must be filtered using the filter module 750-626 and protected against overvoltages.
The 24 V field power supplies must be protected against overvoltage using the filter modules 750-624 or 750-626.

When supplying the ground (earth) potential via the power jumper contacts or if a fuse protection or monitoring of the field power supply is required, a supply module 750-601 (24 V power supply with fuse), 750-602 (24 V power supply without fuse) or 750-610 (24 V power supply with fuse and diagnostics) should be used in addition to the filter module 750-626.

Otherwise the use of a supply module is not required in addition to the filter module 750-626. The downstream modules can then be directly supplied via the power jumper contacts of the filter module 750-626.

For each additional 24 V field side power supply, a filter module 750-624 is to be used in addition to the supply module 750-601, 750-602 or 750-610.

No filter module is required using 230 V field side power supply.

# 6 Use in Hazardous Environments

The **WAGO-I/O-SYSTEM 750** (electrical equipment) is designed for use in Zone 2 hazardous areas.

The following sections include both the general identification of components (devices) and the installation regulations to be observed. The individual subsections of the "Installation Regulations" section must be taken into account if the I/O module has the required approval or is subject to the range of application of the ATEX directive.

# 6.1 Marking Configuration Examples

## 6.1.1 Marking for Europe according to CENELEC and IEC

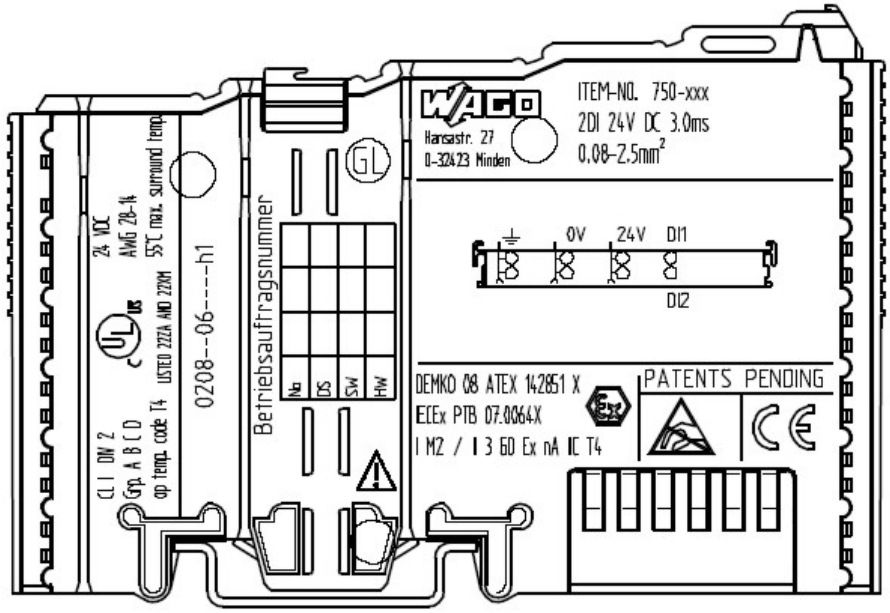


Figure 9: Side marking example for ATEX and IEC Ex approved I/O modules according to CENELEC and IEC

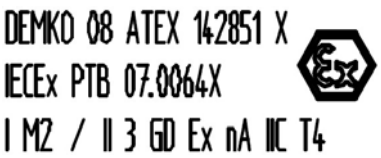


Figure 10: Printing Text detail – Marking example for ATEX and IEC Ex approved I/O modules according to CENELEC and IEC

Table 8: Description of marking example for ATEX and IEC Ex approved I/O modules according to CENELEC and IEC

| Printing on Text | Description |
|---|---|
| DEMKO 08 ATEX 142851 X<br>IECEx PTB 07.0064X | Approval body and/or number of the examination certificate |
| I M2 / II 3 GD | Explosion protection group and Unit category |
| Ex nA | Type of ignition and extended identification |
| IIC | Explosion protection group |
| T4 | Temperature class |

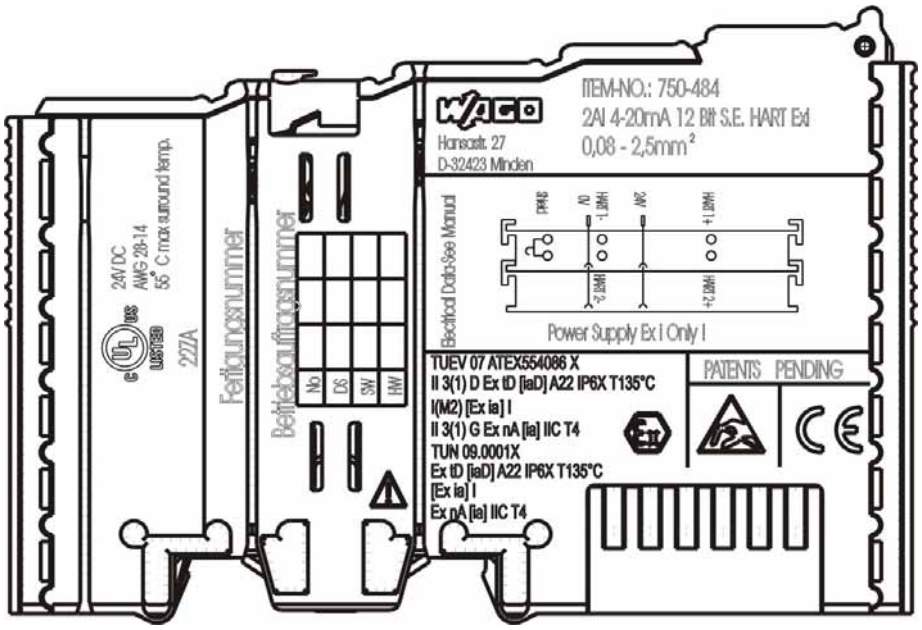


Figure 11: Side marking example for Ex i and IEC Ex i approved I/O modules according to CENELEC and IEC

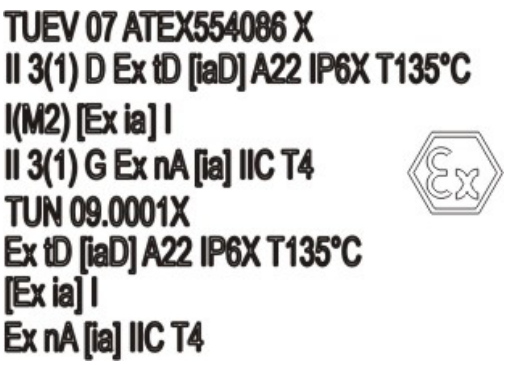


Figure 12: Text detail – Marking example for Ex i and IEC Ex i approved I/O modules according to CENELEC and IEC

Table 9: Description of marking example for Ex i and IEC Ex i approved I/O modules according to CENELEC and IEC

| Inscription text | Description |
|---|---|
| TÜV 07 ATEX 554086 X<br>TUN 09.0001X | Approving authority or<br>certificate numbers |
| **Dust** | |
| II | Device group: All except mining |
| 3(1)D | Device category: Zone 22 device (Zone 20 subunit) |
| Ex | Explosion protection mark |
| tD | Protection by enclosure |
| [iaD] | Approved in accordance with "Dust intrinsic safety" standard |
| A22 | Surface temperature determined according to Procedure A, use in Zone 22 |
| IP6X | Dust-tight (totally protected against dust) |
| T 135°C | Max. surface temp. of the enclosure (no dust bin) |
| **Mining** | |
| I | Device group: Mining |
| (M2) | Device category: High degree of safety |
| [Ex ia] | Explosion protection: Mark with category of type of protection intrinsic safety: Even safe when two errors occur |
| I | Device group: Mining |
| **Gases** | |
| II | Device group: All except mining |
| 3(1)G | Device category: Zone 2 device (Zone 0 subunit) |
| Ex | Explosion protection mark |
| nA | Type of protection: Non-sparking operating equipment |
| [ia] | Category of type of protection intrinsic safety: Even safe when two errors occur |
| IIC | Explosion Group |
| T4 | Temperature class: Max. surface temperature 135°C |

## 6.1.2 Marking for America according to NEC 500

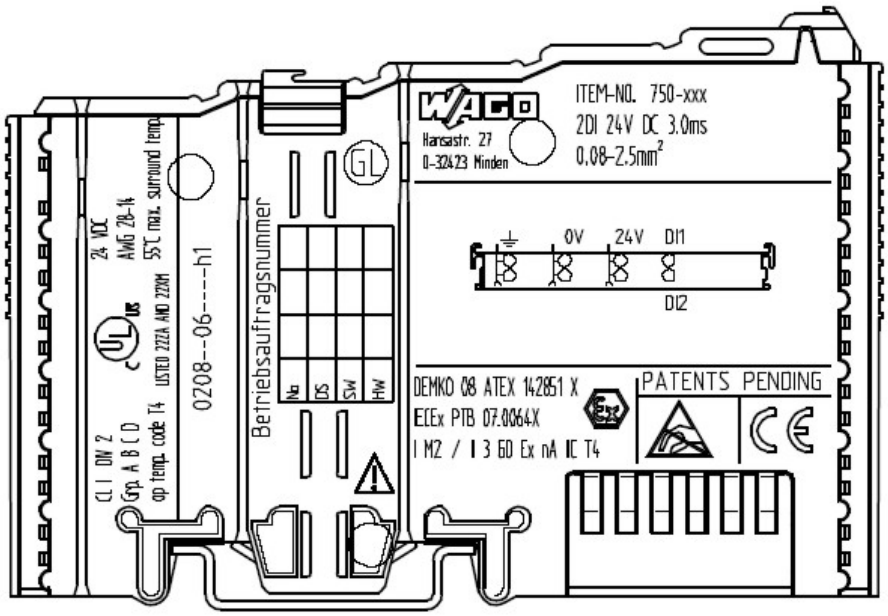


Figure 13: Side marking example for I/O modules according to NEC 500


Figure 14: Text detail – Marking example for I/O modules according to NEC 500

Table 10: Description of marking example for I/O modules according to NEC 500

| Printing on Text | Description |
|---|---|
| CL 1 | Explosion protection group (condition of use category) |
| DIV 2 | Area of application (zone) |
| Grp. ABCD | Explosion group (gas group) |
| Optemp code T4 | Temperature class |

## 6.2 Installation Regulations

In the **Federal Republic of Germany**, various national regulations for the installation in explosive areas must be taken into consideration. The basis for this forms the working reliability regulation, which is the national conversion of the European guideline 99/92/E6. They are complemented by the installation regulation EN 60079-14. The following are excerpts from additional VDE regulations:

Table 11: VDE Installation Regulations in Germany

| | |
|---|---|
| DIN VDE 0100 | Installation in power plants with rated voltages up to 1000 V |
| DIN VDE 0101 | Installation in power plants with rated voltages above 1 kV |
| DIN VDE 0800 | Installation and operation in telecommunication plants including information processing equipment |
| DIN VDE 0185 | lightning protection systems |

The **USA** and **Canada** have their own regulations. The following are excerpts from these regulations:

Table 12: Installation Regulations in USA and Canada

| | |
|---|---|
| NFPA 70 | National Electrical Code Art. 500 Hazardous Locations |
| ANSI/ISA-RP 12.6-1987 | Recommended Practice |
| C22.1 | Canadian Electrical Code |

**NOTICE**

**Notice the following points**
When using the **WAGO-I/O SYSTEM 750** (electrical operation) with Ex approval, the following points are mandatory:

### 6.2.1 Special Conditions for Safe Operation of the ATEX and IEC Ex (acc. DEMKO 08 ATEX 142851X and IECEx PTB 07.0064)

The fieldbus-independent I/O modules of the WAGO-I/O-SYSTEM 750-.../...-... must be installed in an environment with degree of pollution 2 or better. In the final application, the I/O modules must be mounted in an enclosure with IP 54 degree of protection at a minimum with the following exceptions:

- I/O modules 750-440, 750-609 and 750-611 must be installed in an IP 64 minimum enclosure.
- I/O module 750-540 must be installed in an IP 64 minimum enclosure for 230 V AC applications.
- I/O module 750-440 may be used up to max. 120 V AC.

When used in the presence of combustible dust, all devices and the enclosure shall be fully tested and assessed in compliance with the requirements of IEC 61241-0:2004 and IEC 61241-1:2004.

When used in mining applications the equipment shall be installed in a suitable enclosure according to EN 60079-0:2006 and EN 60079-1:2007.

I/O modules fieldbus plugs or fuses may only be installed, added, removed or replaced when the system and field supply is switched off or the area exhibits no explosive atmosphere.

DIP switches, coding switches and potentiometers that are connected to the I/O module may only be operated if an explosive atmosphere can be ruled out.

I/O module 750-642 may only be used in conjunction with antenna 758-910 with a max. cable length of 2.5 m.

To exceed the rated voltage no more than 40%, the supply connections must have transient protection.

The permissible ambient temperature range is 0 °C to +55 °C.

### 6.2.2 Special conditions for safe use (ATEX Certificate TÜV 07 ATEX 554086 X)

1. For use as Gc- or Dc-apparatus (in zone 2 or 22) the field bus independent I/O modules WAGO-I/O-SYSTEM 750-*** shall be erected in an enclosure that fulfils the requirements of the applicable standards (see the marking) EN 60079-0, EN 60079-11, EN 60079-15, EN 61241-0 and EN 61241-1. For use as group I, electrical apparatus M2, the apparatus shall be erected in an enclosure that ensures a sufficient protection according to EN 60079-0 and EN 60079-1 and the degree of protection IP64. The compliance of these requirements and the correct installation into an enclosure or a control cabinet of the devices shall be certified by an ExNB.

2. If the interface circuits are operated without the field bus coupler station type 750-3../…-… (DEMKO 08 ATEX 142851 X), measures must be taken outside of the device so that the rating voltage is not being exceeded of more than 40% because of transient disturbances.

3. DIP-switches, binary-switches and potentiometers, connected to the module may only be actuated when explosive atmosphere can be excluded.

4. The connecting and disconnecting of the non-intrinsically safe circuits is only permitted during installation, for maintenance or for repair purposes. The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes shall be excluded. This is although and in particular valid for the interfaces “CF-Card”, “USB”, “Fieldbus connection“, “Configuration and programming interface“, “antenna socket“, “D-Sub“ and the “Ethernet interface“. These interfaces are not energy limited or intrinsically safe circuits. An operating of those circuits is in the behalf of the operator.

5. For the types 750-606, 750-625/000-001, 750-487/003-000, 750-484 and 750-633 the following shall be considered: The interface circuits shall be limited to overvoltage category I/II/III (non mains/mains circuits) as defined in EN 60664-1.

6. For the type 750-601 the following shall be considered: Do not remove or replace the fuse when the apparatus is energized.

7. The ambient temperature range is: $0°C \leq T_a \leq +55°C$ (for extended details please note certificate).

### 6.2.3 Special conditions for safe use (IEC-Ex Certificate TUN 09.0001 X)

1. For use as Dc- or Gc-apparatus (in zone 2 or 22) the fieldbus independent I/O modules WAGO-I/O-SYSTEM 750-*** shall be erected in an enclosure that fulfils the requirements of the applicable standards (see the marking) IEC 60079-0, IEC 60079-11, IEC 60079-15, IEC 61241-0 and IEC 61241-1. For use as group I, electrical apparatus M2, the apparatus shall be erected in an enclosure that ensures a sufficient protection according to IEC 60079-0 and IEC 60079-1 and the degree of protection IP64. The compliance of these requirements and the correct installation into an enclosure or a control cabinet of the devices shall be certified by an ExCB.

2. Measures have to be taken outside of the device that the rating voltage is not being exceeded of more than 40% because of transient disturbances.

3. DIP-switches, binary-switches and potentiometers, connected to the module may only be actuated when explosive atmosphere can be excluded.

4. The connecting and disconnecting of the non-intrinsically safe circuits is only permitted during installation, for maintenance or for repair purposes. The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes shall be excluded. This is although and in particular valid for the interfaces “CF-Card”, “USB”, “Fieldbus connection“, “Configuration and programming interface“, “antenna socket“, “D-Sub“ and the “Ethernet interface“. These interfaces are not energy limited or intrinsically safe circuits. An operating of those circuits is in the behalf of the operator.

5. For the types 750-606, 750-625/000-001, 750-487/003-000, 750-484 and 750-633 the following shall be considered: The interface circuits shall be limited to overvoltage category I/II/III (non mains/mains circuits) as defined in IEC 60664-1.

6. For the type 750-601 the following shall be considered: Do not remove or replace the fuse when the apparatus is energized.

7. The ambient temperature range is: $0°C \leq T_a \leq +55°C$ (For extensions please see the certificate).

### 6.2.4 Special conditions for safe use (ATEX Certificate DEKRA 11ATEX0203 X)

1. The components shall be installed in a suitable enclosure providing a degree of protection of at least IP54 according to EN 60529, taking into account the environmental conditions under which the equipment will be used.

2. When the temperature under rated conditions exceeds 70 °C at the cable or conduit entry point, or 80 °C at the branching point of the conductors, the temperature specification of the selected cable shall be in compliance with the actual measured temperature values.

3. Provisions shall be made to prevent the rated voltages from being exceeded by transient disturbances of more than 40 %.

4. Components may only be removed or inserted when the system supply and the field supply are switched off, or when the location is known to be non-hazardous.

5. Fieldbus connectors may only be disconnected or connected when the system supply is switched oft, or when the location is known to be non-hazardous.

6. The fuses, present in de the system modules 750-6xx may only be replaced when the supply is switched off, or when the location is known to be non-hazardous.

7. Address selectors and ID switches may only be adjusted when the system supply is switched off, or when the location is known to be non-hazardous.

8. The ambient temperature range is: $0°C \leq T_a \leq +55°C$.

### 6.2.5 ANSI/ISA 12.12.01

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazardous locations only.

This equipment is to be fitted within tool-secured enclosures only.

**⚠ WARNING**

**Explosion hazard!**
Explosion hazard - substitution of components may impair suitability for Class I, Div. 2.

**⚠ WARNING**

**Disconnect device when power is off and only in a non-hazardous area!**
Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous near each operator accessible connector and fuse holder." When a fuse is provided, the following information shall be provided: “A switch suitable for the location where the equipment is installed shall be provided to remove the power from the fuse.”

For devices with Ethernet connectors:
”Only for use in LAN, not for connection to telecommunication circuits”.

**⚠ WARNING**

**Use only with antenna module 758-910!**
Use Module 750-642 only with antenna module 758-910.

For Couplers/Controllers and Economy bus modules only: "The configuration Interface Service connector is for temporary connection only. Do not connect or disconnect unless the area is known to be nonhazardous. Connection or disconnection in an explosive atmosphere could result in an explosion.

**⚠ WARNING**

**Devices containing fuses must not be fitted into circuits subject to over loads!**
Devices containing fuses must not be fitted into circuits subject to over loads, e.g. motor circuits!

**⚠ WARNING**

**Do not connect or disconnect SD-Card unless the area known to be free of ignitable concentrations of flammable gases or vapors!**
Do not connect or disconnect SD-Card while circuit is live unless the area is known to be free of ignitable concentrations of flammable gases or vapors.

***Information***

**Additional Information**
Proof of certification is available on request. Also take note of the information given on the module technical information sheet. The Instruction Manual, containing these special conditions for safe use, must be readily available to the user.

# List of Figures

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