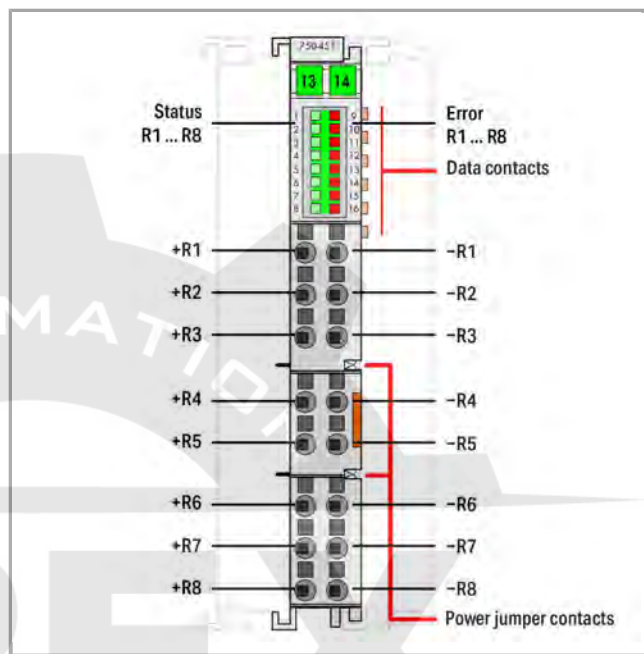
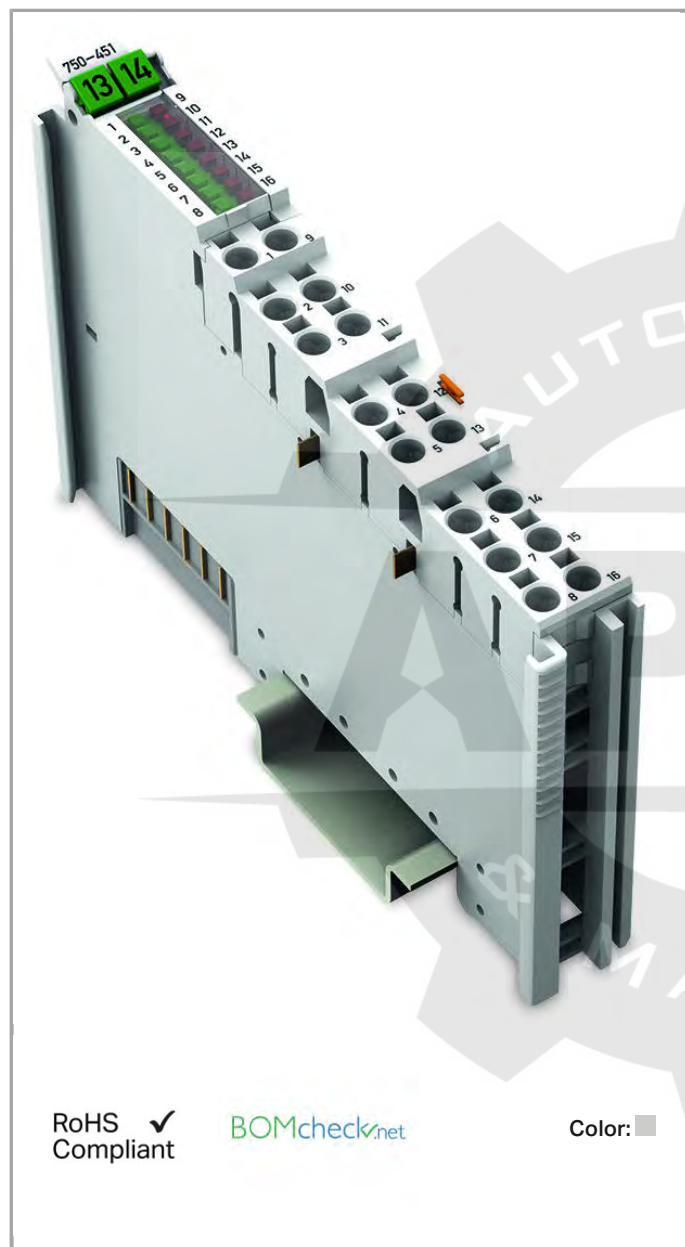


# Data sheet | Item number: 750-451

8-channel analog input; Resistance measurement; Adjustable

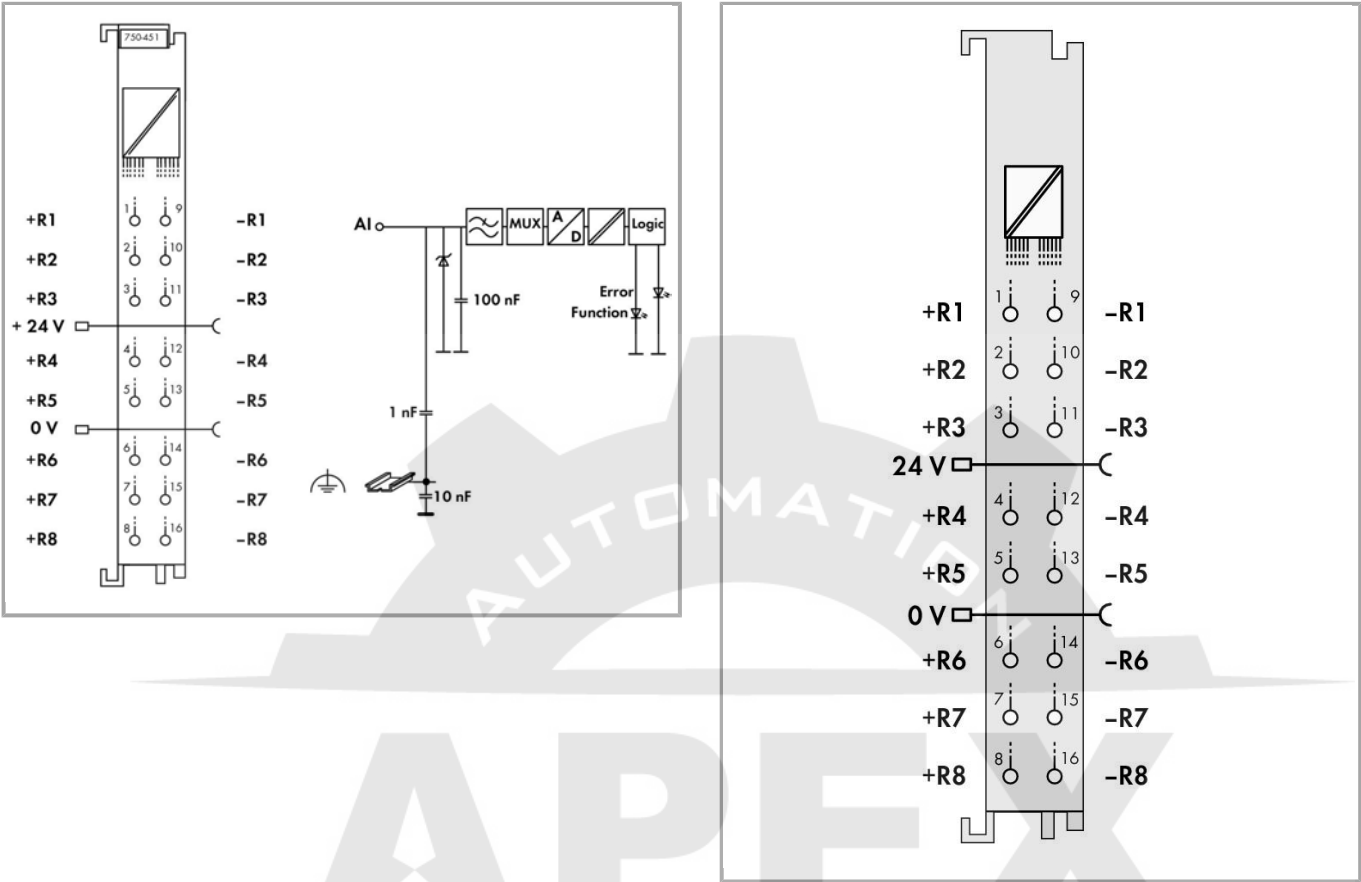
750-451



RoHS  Compliant

[BOMcheck.net](https://www.bomcheck.net)

Color: 



Item description

- The input module directly connects to Pt and Ni resistance sensors.
- Two-wire sensors can be connected.
- The module automatically linearizes the entire temperature range. A sensor error (short circuit, wire break or out-of-measurement range) is indicated by a red LED. Unused channels can be deactivated.
- The module can be configured via WAGO-I/O-CHECK or GSD files.
- It features multiple setting options and high accuracy.

Data  
Technical Data

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| Number of analog inputs           | 8                                                    |
| Total number of channels (module) | 8                                                    |
| Type of signal                    | Resistance measurement<br>Potentiometer positions    |
| Configurable type of signal       | yes                                                  |
| Sensor connection                 | 8 x (2-conductor)                                    |
| Bit width                         | 8 x 16-bit data; 8 x 8-bit control/status (optional) |



|                                          |                                                                                                                                              |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution (over entire range)           | 0.1 °C (over the entire range); 0.01 °C (-50 °C ... 150 °C; Pt1000, Ni1000)                                                                  |
| Conversion time (typ. ≤)                 | 100 ms                                                                                                                                       |
| Measuring error (25 °C)                  | ≤ ±0.6 K (Pt100, Pt200, Pt500, Ni100, Ni120); ≤ ±0.2 K (Pt1000, Ni1000); ≤ ±0.3 Ω at resistance measurement                                  |
| Measuring current (typ.)                 | ≤ 350 µA                                                                                                                                     |
| Response time (max.)                     | 3 s                                                                                                                                          |
| Sensor types                             | Pt100 (default setting), Pt200, Pt500, Pt1000, Ni 100, Ni 120, Ni 1000 (TK6180 + TK5000), Potentiometer 0 Ohm ... 1.2 kOhm, 0 Ohm ... 5 kOhm |
| Temperature range                        | -200 ... +850 °C (Pt100, Pt200, Pt500, Pt1000), -60 ... +250 °C (Ni100, Ni1000), -80 ... +260 °C (Ni120)                                     |
| System supply voltage                    | DC 5 V; via data contacts                                                                                                                    |
| Current consumption, system supply (5 V) | 110 mA                                                                                                                                       |
| System and sensor supply voltage         | )                                                                                                                                            |
| Field supply voltage                     | DC 24 V (-25 ... +30 %); über Leistungskontakte (Einspeisung über Messerkontakt; Weiterleitung über Federkontakt)                            |
| Isolation                                | 500 V system/supply                                                                                                                          |
| Number of incoming power jumper contacts | 2                                                                                                                                            |
| Number of outgoing power jumper contacts | 2                                                                                                                                            |

## Connection data

|                                    |                                  |
|------------------------------------|----------------------------------|
| Connection technology: In-/Outputs | 16 x Push-in CAGE CLAMP®         |
| Connection type (1)                | Inputs/Outputs                   |
| Solid conductor                    | 0.08 ... 1.5 mm² / 28 ... 16 AWG |
| Fine-stranded conductor            | 0.25 ... 1.5 mm² / 22 ... 16 AWG |
| Strip length                       | 8 ... 9 mm / 0.31 ... 0.35 inch  |

## Geometrical Data

|                                       |                      |
|---------------------------------------|----------------------|
| Width                                 | 12 mm / 0.472 inch   |
| Height                                | 69 mm / 2.717 inch   |
| Height from upper-edge of DIN-35 rail | 61.8 mm / 2.433 inch |
| Depth                                 | 100 mm / 3.937 inch  |

## Mechanical data

|                  |             |
|------------------|-------------|
| Type of mounting | DIN-35 rail |
|------------------|-------------|

## Material Data

|                  |                              |
|------------------|------------------------------|
| Color            | light gray                   |
| Housing material | Polycarbonate, polyamide 6.6 |
| Weight           | 47.892 g                     |

Conformity marking

1

## Environmental Requirements

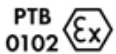
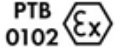
|                                                                                    |                                         |
|------------------------------------------------------------------------------------|-----------------------------------------|
| Surrounding air (operating) temperature                                            | 0 ... 55 °C                             |
| Surrounding air (storage) temperature                                              | -40 ... 85 °C                           |
| Protection class                                                                   | IP20                                    |
| Degree of pollution (5)                                                            | 2 per IEC 61131-2                       |
| Operating altitude                                                                 | 0 ... 2000 m                            |
| Mounting position                                                                  | horizontal (standing/lying) or vertical |
| Relative air humidity (no condensation)                                            | 95 %                                    |
| Vibration resistance                                                               | 4g per IEC 60068-2-6                    |
| Shock resistance                                                                   | 15g per IEC 60068-2-27                  |
| EMC immunity to interference                                                       | acc. to EN 61000-6-1, EN 61000-6-2      |
| EMC emission of interference                                                       | acc. to EN 61000-6-3                    |
| Exposure to pollutants                                                             | Per IEC 60068-2-42 and IEC 60068-2-43   |
| Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 % | 10 ppm                                  |
| Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %  | 25 ppm                                  |

## Commercial data

|                    |               |
|--------------------|---------------|
| Country of origin  | DE            |
| GTIN               | 4017332258388 |
| Customs Tariff No. | 85389099990   |

## Approvals / Certificates

### Ex-Approvals

| Logo                                                                               | Approval                    | Additional Approval Text | Certificate name      |
|------------------------------------------------------------------------------------|-----------------------------|--------------------------|-----------------------|
|  | ATEX<br>TUEV Nord Cert GmbH | EN 60079-0               | TUEV_14_ATEX_148929_X |
|  | ATEX<br>TUEV Nord Cert GmbH | IEC 60079-0              | IECEx_TUN_14.0035_X   |
|  | ATEX<br>TUEV Nord Cert GmbH | EN 60079-0               | TUEV_14_ATEX_148929_X |
|                                                                                    | ATEX<br>TUEV Nord Cert GmbH | IEC 60079-0              | IECEx_TUN_14.0035_X   |



|                                                                                  |                                                               |                   |               |
|----------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------|---------------|
|  | UL<br>Underwriters Laboratories Inc. (HAZARDOUS<br>LOCATIONS) | ANSI/ISA 12.12.01 | E198726 Sec.1 |
|----------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------|---------------|

#### Country specific Approvals

| Logo                                                                             | Approval                             | Additional Approval Text | Certificate name            |
|----------------------------------------------------------------------------------|--------------------------------------|--------------------------|-----------------------------|
|  | KC<br>National Radio Research Agency | Article 58-2, Clause 3   | MSIP-<br>REM-W43-<br>AIM750 |
|  | KC<br>National Radio Research Agency | Article 58-2, Clause 3   | MSIP-<br>REM-W43-<br>AIM750 |

#### Ship Approvals

| Logo                                                                               | Approval                                         | Additional Approval Text | Certificate name      |
|------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|-----------------------|
|  | ABS<br>American Bureau of Shipping               | -                        | 19-<br>HG1821926      |
|  | DNV GL<br>Det Norske Veritas, Germanischer Lloyd | -                        | TAA0000194            |
|  | PRS<br>Polski Rejestr Statków                    | -                        | TE/2236<br>/880590/19 |

#### UL-Approvals

| Logo                                                                               | Approval                                                        | Additional Approval Text | Certificate name |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------|------------------|
|  | UL<br>UL International Netherlands B.V. (ORDINARY<br>LOCATIONS) | UL 508                   | E175199<br>Sec.1 |

## Compatible products

## shield connection

|                                                                                    |                                                                                                                                      |         |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------|
|    | <b>Item no.: 790-108</b><br>Shield clamping saddle; 11 mm wide; diameter of compatible conductor                                     | 790-108 |
|    | <b>Item no.: 790-116</b><br>Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm                        | 790-116 |
|    | <b>Item no.: 790-124</b><br>Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm                        | 790-124 |
|    | <b>Item no.: 790-140</b><br>Shield clamping saddle; diameter of compatible conductor                                                 | 790-140 |
|    | <b>Item no.: 790-208</b><br>Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm                                                         | 790-208 |
|    | <b>Item no.: 790-216</b><br>Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm                                                        | 790-216 |
|   | <b>Item no.: 790-220</b><br>Shield clamping saddle; 30 mm wide; 6 ... 20 mm                                                          | 790-220 |
| <b>Carrier rail</b>                                                                |                                                                                                                                      |         |
|  | <b>Item no.: 210-112</b><br>Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm | 210-112 |
|  | <b>Item no.: 210-113</b><br>Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715                  | 210-113 |
|  | <b>Item no.: 210-114</b><br>Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715                   | 210-114 |
|  | <b>Item no.: 210-115</b><br>Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm | 210-115 |
|  | <b>Item no.: 210-118</b><br>Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715                 | 210-118 |
|  | <b>Item no.: 210-196</b><br>Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715               | 210-196 |
|  | <b>Item no.: 210-197</b><br>Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715                     | 210-197 |
|  | <b>Item no.: 210-198</b><br>Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715                | 210-198 |
|  | <b>Item no.: 210-504</b><br>Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715        | 210-504 |
|  | <b>Item no.: 210-505</b><br>Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715      | 210-505 |

|                                                                                    |                                                                                                                                          |                  |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|    | <b>Item no.: 210-506</b><br>Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715           | 210-506          |
|    | <b>Item no.: 210-508</b><br>Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715             | 210-508          |
| <b>system box</b>                                                                  |                                                                                                                                          |                  |
|    | <b>Item no.: 850-804</b><br>IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip              | 850-804          |
|    | <b>Item no.: 850-804/000-001</b><br>IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip      | 850-804 /000-001 |
|    | <b>Item no.: 850-805</b><br>IP65 enclosure; Stainless steel; WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip              | 850-805          |
|    | <b>Item no.: 850-814/002-000</b><br>IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate                 | 850-814 /002-000 |
|    | <b>Item no.: 850-815/002-000</b><br>IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate                 | 850-815 /002-000 |
|    | <b>Item no.: 850-816/002-000</b><br>IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate                 | 850-816 /002-000 |
|  | <b>Item no.: 850-817/002-000</b><br>IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate                 | 850-817 /002-000 |
|  | <b>Item no.: 850-825</b><br>IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20                               | 850-825          |
|  | <b>Item no.: 850-826</b><br>IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip          | 850-826          |
|  | <b>Item no.: 850-826/002-000</b><br>IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip  | 850-826 /002-000 |
|  | <b>Item no.: 850-827</b><br>IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip          | 850-827          |
|  | <b>Item no.: 850-827/002-000</b><br>IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip  | 850-827 /002-000 |
|  | <b>Item no.: 850-828</b><br>IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip         | 850-828          |
|  | <b>Item no.: 850-828/002-000</b><br>IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip | 850-828 /002-000 |



**Item no.: 850-834**

IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20

850-834

**Item no.: 850-835**

IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip

850-835

**Item no.: 850-836**

IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip

850-836

**tools****Item no.: 210-719**

Operating tool with partially insulated shaft; Type 1, blade (2.5 x 0.4) mm

210-719

**Marking accessories****Item no.: 2009-145**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

**Item no.: 2009-145/000-002**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-002

**Item no.: 2009-145/000-005**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-005

**Item no.: 2009-145/000-006**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-006

**Item no.: 2009-145/000-007**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-007

**Item no.: 2009-145/000-012**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-012

**Item no.: 2009-145/000-023**

Mini-WSB Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-023

**Item no.: 2009-145/000-024**

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-024

**Item no.: 248-501**

Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card

248-501

**Item no.: 248-501/000-002**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-002

**Item no.: 248-501/000-005**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-005



**Item no.: 248-501/000-006**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-006

248-501

**Item no.: 248-501/000-007**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-007

248-501

**Item no.: 248-501/000-012**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-012

248-501

**Item no.: 248-501/000-017**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-017

248-501

**Item no.: 248-501/000-023**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-023

248-501

**Item no.: 248-501/000-024**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-024

248-501

**Item no.: 750-103**

Group marker carrier

750-103

**Item no.: 750-107**

Group marker carrier

750-107

**Downloads****Documentation****Manual**

8 AI RTD, Configurable

V 1.2.0

pdf  
4.5 MB

Download

8-Channel Analog Input Module for Resistance Sensors, Configurable

**Bid Text**

750-451

doc  
31.2 kB

Download

**Additional Information**

Disposal; Electrical and electronic equipment, Packaging

V 1.0.0

pdf  
265.8 kB

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**System Description**

Overview on WAGO-I/O-SYSTEM 750 approvals

pdf  
780.2 kB

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Design Notes

V 2.0.0

pdf

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|                                                                    |         |               |          |
|--------------------------------------------------------------------|---------|---------------|----------|
| Basic conditions and recommendations for higher operational safety |         | 1.5 MB        |          |
| 750/753 Series I/O-System – General Product Information            |         | pdf<br>1.7 MB | Download |
| Use in Hazardous Environments                                      | V 1.0.0 | pdf<br>1.0 MB | Download |
| Term definition, marking and installation regulations              |         |               |          |

## Application Notes

### Application Note CoDeSys 2.3

|                                                                                          |              |               |          |
|------------------------------------------------------------------------------------------|--------------|---------------|----------|
| Application Note Library ModuleAccess_01                                                 | Jan 29, 2016 | zip<br>1.0 MB | Download |
| These instructions describe the use of the ModuleAccess_01.lib library using 4 examples. |              |               |          |

## Libraries

|                                                                                                                                                           |                     |               |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------|----------|
| Library                                                                                                                                                   |                     |               |          |
| ModuleAccess_01.lib                                                                                                                                       | 1.7<br>Jan 18, 2018 | zip<br>1.5 MB | Download |
| The ModuleAccess_01 library provides both module configuration and access to its process data within a CoDeSys project without the use of WAGO I/O Check. |                     |               |          |

## CAD/CAE - Smart Data

|                     |  |     |          |
|---------------------|--|-----|----------|
| CAD data            |  |     |          |
| 3D Download 750-451 |  | URL | Download |

## Product family

**750/753 Series I/O-System**  
[Learn more about the product family.](#)

[Show all products from the family](#)

Subject to changes.