



The 753-649 M-Bus Module acts as an M-Bus master, allowing M-Bus slaves to be directly connected to the WAGO I/O System 750. The Meter-Bus (M-Bus) is a fieldbus system that transmits energy consumption data measured by M-Bus slaves (e.g., heat, water, electricity and gas meters), as well as all sensor and actuator types.

The M-Bus master communicates with the M-Bus slaves and forms the interface between the M-Bus and the processing software. On demand, the M-Bus master reads energy consumption data via the M-Bus 2-wire line, transmitting this data to the higher-level control system for further processing or visualization. Alternatively, PLC queries can be implemented via the PLC using IEC 61131-3 function blocks or via a PC application.

The M-Bus slaves are powered via the M-Bus master. The use of a separate level converter is not required. The M-Bus technology is defined in the technical standard EN 13757, which defines the communication systems for meters and their remote reading.

Both signal transmission and operating status, as well as trouble-free local bus communication, are indicated via single- and multi-color LEDs.

The M-Bus connection modules are short-circuit-protected.

### Notes

Note The 753 Series Plug is included with delivery.

### Technical data

|                       |   |
|-----------------------|---|
| Device-specific       | Line length (overall network): up to 1000 m at 9600 baud; up to 2000 m at 2400 baud; up to 6000 m at 300 baud; Master/slave distance: up to 500 m at 9600 baud; up to 1000 m at 2400 or 300 baud; M-Bus loads (max.): 40 (1.5 mA each); Overcurrent shutdown: Active current monitoring; Threshold value: approx. 120 mA; Minimum shutdown time: 500 ms |
| Topology              | Star, tree and line topology  |
| Output voltage        | 23.4 ... 25.2 VDC; for supplying the M-Bus slaves   |
| Baud rate             | 300 Bd ... 9.6 kBd (2400 baud (default))  |
| Transmission channels | 1, bidirectional  |
| Data width            | 24 bytes (mailbox 2.0 with 22-byte length)  |
| Commissioning         | WAGO-I/O-PRO V2.3, <b>e!COCKPIT</b>   |

### Technical data

|  |   |
|--|---|
| Supply voltage (system)  | 5 VDC; via data contacts  |
| Current consumption (5 V system supply)                          | 40 mA   |
| Supply voltage (field)   | 24 VDC (-2.5 ... +5 %); via power jumper contacts (power supply via blade contact; transmission via spring contact)                     |
| Current consumption, field supply (module with no external load) | 130 mA  |
| Isolation  | 500 V system/field  |
| Indicators   | LED (A, B, E) green: local bus status, TxD, power supply status; LED (C, G) red: overcurrent, M-Bus overload; LED (F) green/yellow: RxD |
| Number of incoming power jumper contacts                         | 2   |
| Number of outgoing power jumper contacts                         | 2   |
| Current carrying capacity (power jumper contacts)                | 10 A  |

### Connection data

|   |  |
|---|--|
| Connection technology: inputs/outputs           | 8 x CAGE CLAMP®                              |
| Connection type 1                               | Inputs/outputs                               |
| Solid conductor                                 | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Fine-stranded conductor                         | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Strip length                                    | 8 ... 9 mm / 0.31 ... 0.35 inches            |
| Connection requirement (permissible cable type) | 2-line, shielded or unshielded               |

### Physical data

|                                   |                        |
|-----------------------------------|------------------------|
| Width                             | 12 mm / 0.472 inches   |
| Height                            | 100 mm / 3.937 inches  |
| Depth                             | 69.8 mm / 2.748 inches |
| Depth from upper-edge of DIN-rail | 62.6 mm / 2.465 inches |

### Mechanical data

|                     |             |
|---------------------|-------------|
| Mounting type       | DIN-35 rail |
| Pluggable connector | pluggable   |

### Material data

|                    |                              |
|--------------------|------------------------------|
| Housing material   | Polycarbonate; polyamide 6.6 |
| Fire load          | 1.046 MJ                     |
| Weight             | 71.9 g                       |
| Conformity marking | CE                           |

### Environmental requirements

|  |                                       |
|--|---------------------------------------|
| Ambient temperature (operation)  | 0 ... +55 °C                          |
| Ambient temperature (storage)  | -40 ... +85 °C                        |
| Protection type  | IP20                                  |
| Pollution degree   | 2 per IEC 61131-2                     |
| Operating altitude   | 0 ... 2000 m / 0 ... 6562 ft          |
| Mounting position  | horizontal (standing/lying); vertical |
| Relative humidity (without condensation)   | 95 %                                  |
| Vibration resistance   | per IEC 60068-2-6                     |
| Shock resistance   | 15g per IEC 60068-2-27                |
| 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

|                       |               |
|-----------------------|---------------|
| eCl@ss 10.0           | 27-24-26-08   |
| eCl@ss 9.0            | 27-24-26-08   |
| ETIM 8.0              | EC001604      |
| ETIM 7.0              | EC001604      |
| PU (SPU)              | 1 pcs         |
| Packaging type        | Box           |
| Country of origin     | DE            |
| GTIN                  | 4055143622127 |
| Customs tariff number | 85389099990   |

### Environmental Product Compliance

|   |   |
|---|---|
| CAS-No.                                   | 1303-86-2<br>1317-36-8<br>7439-92-1       |
| REACH Candidate List Substance            | Diboron trioxide<br>Lead<br>Lead monoxide |
| RoHS Compliance Status                    | Compliant,With Exemption                  |
| RoHS Exemption                            | 6(c)<br>7(a)<br>7(c)-I<br>7(c)-II         |
| SCIP notification number (Austria)        | 2c49fa3f-c370-4f78-a9ec-8dd59f23f939      |
| SCIP notification number (Belgium)        | 5853a01d-be0b-4147-a755-c9394c0dcc9f      |
| SCIP notification number (Bulgaria)       | 870e2222-2fb1-4a43-be7d-807b61db1a0a      |
| SCIP notification number (Czech Republic) | 1945fa19-7be9-4f3d-a0e7-9d36a64e2129      |
| SCIP notification number (Denmark)        | 1476d81e-e5b6-472f-a557-14894913c8b4      |
| SCIP notification number (Finland)        | 44beb298-3fe2-415c-bf51-3dc875ce6812      |
| SCIP notification number (France)         | dc0444d2-1fbb-435e-9998-f1b82d6b6b08      |
| SCIP notification number (Germany)        | 8e7a68aa-8881-43fc-b6ac-5906b603fb99      |
| SCIP notification number (Hungary)        | 4f96c356-8e85-4890-9c2a-ae6a33fc5b85      |
| SCIP notification number (Italy)          | 968b2482-c530-48f4-a9b7-591a3157c302      |
| SCIP notification number (Netherlands)    | d15af627-50f0-4856-9bd7-3945949a89c0      |
| SCIP notification number (Poland)         | 30e4389f-4dc2-4b33-b594-57ad611c1802      |
| SCIP notification number (Romania)        | fdd4b7a7-3fb9-448c-9718-992702636fd9      |
| SCIP notification number (Sweden)         | 23844637-7589-466b-a0d7-d7cd53b7b6a4      |

### Approvals / Certificates

#### General approvals



| Approval  | Standard               | Certificate Name                |
|---|------------------------|---------------------------------|
| EAC<br>Brjansker Zertifizierungs-<br>stelle                       | TP TC 020/2011         | EAC RU C-DE.AM02.<br>B.00087/19 |
| KC<br>National Radio Research<br>Agency                           | Article 58-2, Clause 3 | MSIP-REM-W43-MSM750             |
| UL<br>Underwriters Laboratories<br>Inc. (ORDINARY LOCATI-<br>ONS) | -                      | E175199                         |

#### Declarations of conformity and manufacturer's declarations

| Approval  | Standard | Certificate Name |
|---|----------|------------------|
| EU-Declaration of Confor-<br>mity<br>WAGO GmbH & Co. KG | -        | -                |

Approvals for hazardous areas



| Approval   | Standard  | Certificate Name |
|--|-----------|------------------|
| UL<br>Underwriters Laboratories<br>Inc. (HAZARDOUS LOCA-<br>TIONS) | UL 121201 | E198726 Sec.1    |

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product  
Compliance 753-649



Documentation

| Manual                                   |                       |                   |  |
|--|-----------------------|-------------------|--|
| Product Manual M-Bus<br>Master Module    | V 1.1.2<br>21.01.2020 | pdf<br>3180.19 KB |  |
| System Manual WAGO<br>I/O System 750/753 | V 3.3.3<br>29.08.2023 | pdf<br>8512.61 KB |  |
| System Manual Series<br>750/753          |                       |                   |  |

| System Description   |  |                  |  |
|--|--|------------------|--|
| 750/753 Series I/O-<br>System – General Pro-<br>duct Information |  | pdf<br>953.35 KB |  |
| Overview on WAGO-I/<br>O-SYSTEM 750 appro-<br>vals               |  | pdf<br>770.48 KB |  |

| Tutorial  |                   |                     |  |
|---|-------------------|---------------------|--|
| Retrieve data from a<br>meter using the M-Bus<br>module 753-649 | 1.0<br>08.09.2017 | mp4<br>127004.21 KB |  |

| Bid Text                   |            |                 |  |
|----------------------------|------------|-----------------|--|
| 753-649                    | 09.11.2017 | doc<br>30.50 KB |  |
| 753-649                    | 19.02.2019 | xml<br>6.41 KB  |  |
| ausschreiben.de<br>753-649 |            |                 |  |

Application Notes

| Application Note CoDeSys 2.3              |                   |                   |  |
|---|-------------------|-------------------|--|
| Application Note Libra-<br>ry MBus_649_01 | 1.0<br>06.07.2017 | zip<br>2131.79 KB |  |

| Application Note e!COCKPIT                |                     |                   |  |
|---|---------------------|-------------------|--|
| eCOCKPIT Application<br>Note WagoAppM_Bus | 1.0.5<br>18.01.2022 | pdf<br>1395.44 KB |  |

| Application note SIEMENS |                     |                    |  |
|--------------------------|---------------------|--------------------|--|
| a2018002 S7 M-Bus        | 1.0.0<br>19.11.2018 | zip<br>3024.80 KB  |  |
| a2018001 TIA M-Bus       | 1.1.0<br>05.01.2021 | zip<br>19229.50 KB |  |

**CAD/CAE-Data**

| CAD data             |   |
|----------------------|---|
| 2D/3D Models 753-649 | ↓ |

| CAE data                  |   |
|---------------------------|---|
| EPLAN Data Portal 753-649 | ↓ |
| ZUKEN Portal 753-649      | ↓ |

**Engineering-Software**

| Configuration and Commissioning Software |                           |                   |   |
|--|---------------------------|-------------------|---|
| WAGO-M-Bus-Connector-Setup               | 1.17.0.1105<br>04.05.2017 | zip<br>3958.46 KB | ↓ |

**Libraries**

| e!COCKPIT libraries                        |                       |                   |   |
|--|-----------------------|-------------------|---|
| e!COCKPIT Library Description WagoAppM_Bus | 1.2.1.0<br>25.05.2021 | pdf<br>1106.89 KB | ↓ |

| Library                                       |                          |                    |   |
|---|--------------------------|--------------------|---|
| Libraries for Building Automation CODESYS 2.3 | 2023-09-14<br>14.09.2023 | zip<br>44926.41 KB | ↓ |

**1 Compatible Products**

**1.1 Optional Accessories**

**1.1.1 DIN-rail**

**1.1.1.1 Mounting accessories**



**Item No.: 210-196**  
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



**Item No.: 210-198**  
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



**Item No.: 210-508**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored



**Item No.: 210-197**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



**Item No.: 210-506**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored



**Item No.: 210-114**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



**Item No.: 210-118**  
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



**Item No.: 210-115**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored



**Item No.: 210-112**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



**Item No.: 210-504**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored



**Item No.: 210-113**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



**Item No.: 210-505**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

### 1.1.2 Marking

#### 1.1.2.1 Group marker carrier



**Item No.: 750-106**  
Group marker carrier

#### 1.1.2.2 Marker

**Item No.: 750-100**  
Marker card; as a DIN A4 sheet; plain

**Item No.: 2009-145/000-006**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue

**Item No.: 2009-145/000-007**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray

**Item No.: 2009-145/000-023**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green

**Item No.: 2009-145/000-012**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange

**Item No.: 2009-145/000-005**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red

**Item No.: 2009-145/000-024**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

**Item No.: 2009-145**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

**Item No.: 2009-145/000-002**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow

**Item No.: 248-501/000-006**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue

**Item No.: 248-501/000-007**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray

**Item No.: 248-501/000-023**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

**Item No.: 248-501/000-017**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green

**Item No.: 248-501/000-012**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

**Item No.: 248-501/000-005**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

**Item No.: 248-501/000-024**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

**Item No.: 248-501**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white

**Item No.: 248-501/000-002**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow

### 1.1.3 Shield termination

#### 1.1.3.1 Shield clamping saddles



**Item No.: 790-108**  
Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm



**Item No.: 790-208**  
Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm



**Item No.: 790-116**  
Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm



**Item No.: 790-216**  
Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm



**Item No.: 790-124**  
Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm



**Item No.: 790-220**  
Shield clamping saddle; 30 mm wide; 6 ... 20 mm



**Item No.: 790-140**  
Shield clamping saddle; diameter of compatible conductor

## 1.1.4 System enclosure

## 1.1.4.1 System enclosure

**Item No.: 850-825**

IP65 enclosure; Aluminium (RAL 7032);  
WxHxD (160x100x160 mm); 9 x M12, 4 x  
M20

**Item No.: 850-826**

IP65 enclosure; Aluminium (RAL 7032);  
WxHxD (240x100x160 mm); 4 x M20, 4 x  
M16, 14 x M12 cable grip

**Item No.: 850-827**

IP65 enclosure; Aluminium (RAL 7032);  
WxHxD (320x100x160 mm); 4 x M20, 8 x  
M16, 17 x M12 cable grip

**Item No.: 850-828**

IP65 enclosure; Aluminium (RAL 7032);  
WxHxD (480x100x160 mm); 4 x M20, 10 x  
M16, 35 x M12 cable grip

**Item No.: 850-826/002-000**

IP65 enclosure; Aluminium (RAL 7035);  
WxHxD (240x100x160 mm); 4 x M20, 4 x  
M16, 14 x M12 cable grip

**Item No.: 850-827/002-000**

IP65 enclosure; Aluminium (RAL 7035);  
WxHxD (320x100x160 mm); 4 x M20, 8 x  
M16, 17 x M12 cable grip

**Item No.: 850-828/002-000**

IP65 enclosure; Aluminium (RAL 7035);  
WxHxD (480x100x160 mm); 4 x M20, 10 x  
M16, 35 x M12 cable grip

**Item No.: 850-834**

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

**Item No.: 850-835**

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

**Item No.: 850-836**

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

**Item No.: 850-814/002-000**

IP65 enclosure; Sheet steel (RAL 7035);  
WxHxD (200x120x200 mm); without flan-  
ge plate

**Item No.: 850-815/002-000**

IP65 enclosure; Sheet steel (RAL 7035);  
WxHxD (300x120x200 mm); without flan-  
ge plate

**Item No.: 850-816/002-000**

IP65 enclosure; Sheet steel (RAL 7035);  
WxHxD (400x120x200 mm); without flan-  
ge plate

**Item No.: 850-817/002-000**

IP65 enclosure; Sheet steel (RAL 7035);  
WxHxD (600x120x200 mm); without flan-  
ge plate