

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, e!COCKPIT
Supply voltage (system)	5 VDC; via data contacts

Technical data

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: Internal data 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 ² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm ² / 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)	-25 ... +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 ₂ S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO ₂ 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.	1317-36-8 7439-92-1
REACH Candidate List Substance	Lead Lead monoxide
RoHS Exemption	7(a) 7(c)-I 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 Brjansker Zertifizierungs- stelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-MSM750
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	UL 61010-2-201	E175199

Approvals for hazardous areas



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

Downloads

Environmental Product Compliance

Compliance Search	
Environmental Product Compliance 753-649	↓

Documentation

Manual			
Product Manual M-Bus Master Module	V 1.1.2 21.01.2020	pdf 3180.19 KB	↓
System Manual WAGO I/O System 750/753	V 3.1.0 05.12.2022	pdf 8495.90 KB	↓
System Manual Series 750/753 ↓			

System Description		
750/753 Series I/O-System – General Product Information	pdf 953.35 KB	↓
Overview on WAGO-I/O-SYSTEM 750 approvals	pdf 770.48 KB	↓

Tutorial			
Retrieve data from a meter using the M-Bus module 753-649	1.0 08.09.2017	mp4 127004.21 KB	↓

Bid Text			
753-649	09.11.2017	doc 30.50 KB	↓
753-649	19.02.2019	xml 6.41 KB	↓
ausschreiben.de 753-649 ↓			

Application Notes

Application Note CoDeSys 2.3			
Application Note Library MBus_649_01	1.0 06.07.2017	zip 2131.79 KB	↓

Application Note e!COCKPIT			
eCOCKPIT Application Note WagoAppM_Bus	1.0.5 18.01.2022	pdf 1395.44 KB	↓

Application note SIEMENS			
a2018002 S7 M-Bus	V1.0.0 19.11.2018	zip 3024.80 KB	↓
a2018001 TIA M-Bus	V1.1.0 05.01.2021	zip 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 04.05.2017	zip 3958.46 KB	

Libraries			
e!COCKPIT libraries		Library	
e!COCKPIT Library Description Wa-goAppM_Bus	1.2.1.0 25.05.2021	pdf 1106.89 KB	
Libraries for Building Automation CODESYS 2.3	2023-01-16 16.01.2023	zip 43756.54 KB	

1 Compatible Products

1.1 Optional Accessories

1.1.1 DIN-rail

1.1.1.1 Mounting accessories

<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>

1.1.2 Marking











1.1.2.1 Group marker carrier

<p>Item No.: 750-106 Group marker carrier</p>
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1.1.2.2 Marker

<p>Item No.: 750-100 Marker card; as a DIN A4 sheet; plain</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>Item No.: 2009-145 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white</p>

1.1.2.2 Marker

 <p>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</p>	 <p>Item No.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue</p>	 <p>Item No.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray</p>	 <p>Item No.: 248-501/000-023 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green</p>
 <p>Item No.: 248-501/000-017 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green</p>	 <p>Item No.: 248-501/000-012 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange</p>	 <p>Item No.: 248-501/000-005 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red</p>	 <p>Item No.: 248-501/000-024 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet</p>
 <p>Item No.: 248-501 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white</p>	 <p>Item No.: 248-501/000-002 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow</p>		















1.1.3 Shield termination

1.1.3.1 Shield clamping saddles

 <p>Item No.: 790-108 Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm</p>	 <p>Item No.: 790-208 Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm</p>	 <p>Item No.: 790-116 Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm</p>	 <p>Item No.: 790-216 Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm</p>
 <p>Item No.: 790-124 Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm</p>	 <p>Item No.: 790-220 Shield clamping saddle; 30 mm wide; 6 ... 20 mm</p>	 <p>Item No.: 790-140 Shield clamping saddle; diameter of compatible conductor</p>	

1.1.4 System enclosure

1.1.4.1 System enclosure

 <p>Item No.: 850-825 IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20</p>	 <p>Item No.: 850-826 IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip</p>	 <p>Item No.: 850-827 IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip</p>	 <p>Item No.: 850-828 IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip</p>
 <p>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</p>	 <p>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</p>	 <p>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</p>	 <p>Item No.: 850-834 IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20</p>
 <p>Item No.: 850-835 IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip</p>	 <p>Item No.: 850-836 IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip</p>	 <p>Item No.: 850-814/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate</p>	 <p>Item No.: 850-815/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate</p>
 <p>Item No.: 850-816/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate</p>	 <p>Item No.: 850-817/002-000 IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate</p>		

Subject to changes. Please also observe the further product documentation!

Current addresses can be found at: www.wago.com