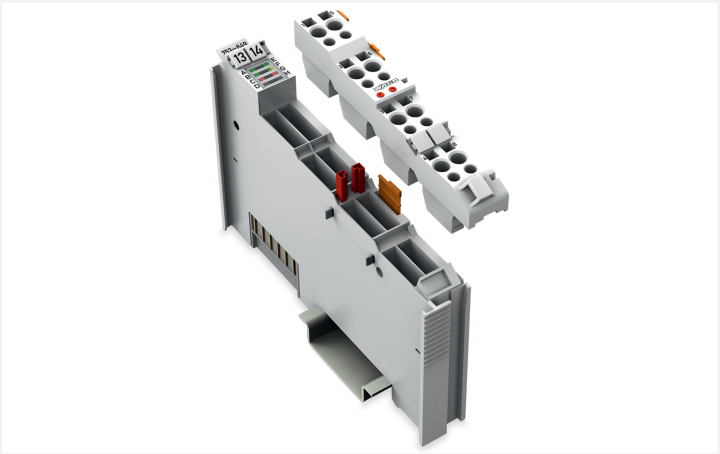
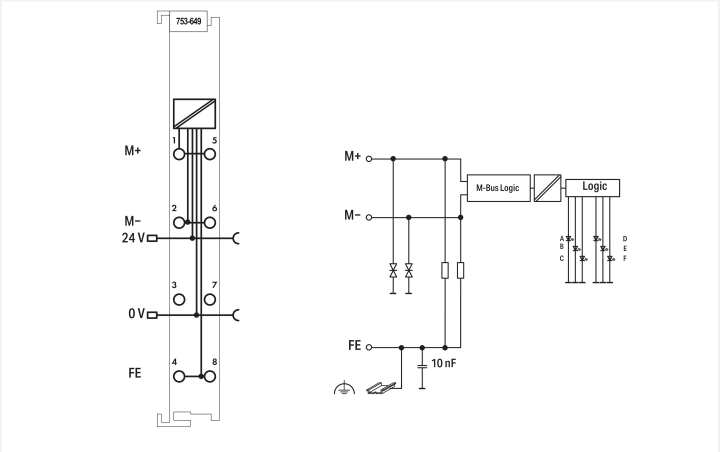
Data Sheet | Item Number: 753-649

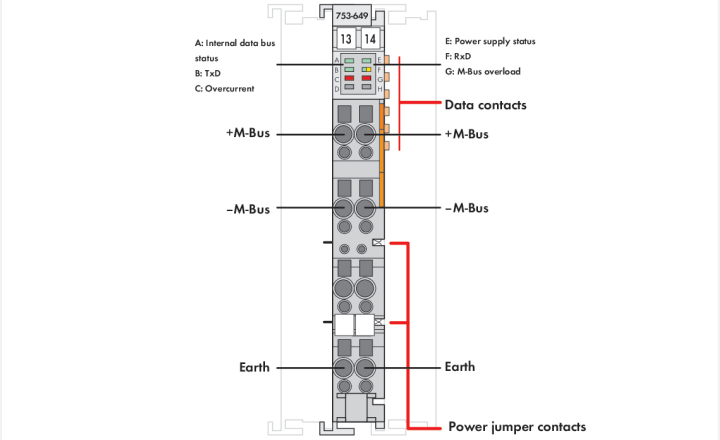
M-Bus Master

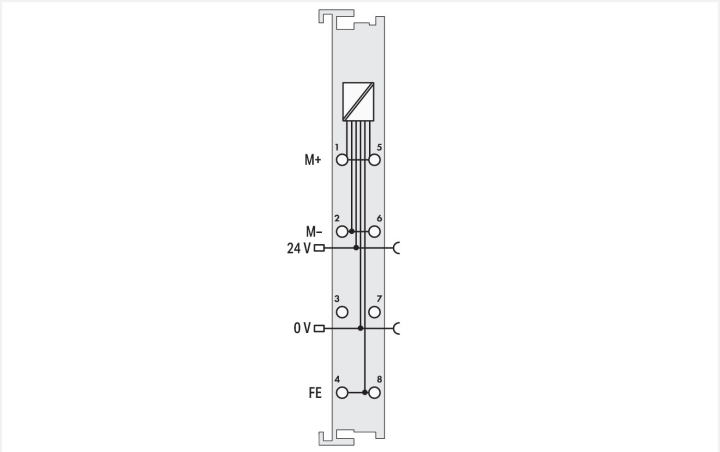
https://www.wago.com/753-649











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.

 Continued on next page

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 at2400 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
Transmission rate	300 Bd … 9.6 kBd (2400 baud (default setting))
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
Current consumption (system supply)	40 mA
Supply voltage (field)	24 VDC (-2.5 … +5 %); via power jumper contacts (power supply via blade contact; transmission (field side supply voltage only) 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: I/O	8 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type	Inputs/outputs
Solid conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Fine-stranded conductor	0.08 … 2.5 mm² / 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

Continued on next page

Material data

Housing material	Polycarbonate; polyamide 6.6
Fire load	0.934 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 left, horizontal right, horizontal top, horizontal bottom, vertical top and vertical bottom
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_2S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO_2 contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
GTIN	4055143622127
Customs tariff number	85389099990

Product Classification

UNSPSC	32151705
eCl@ss 10.0	27-24-26-08
eCl@ss 9.0	27-24-26-08
ETIM 9.0	EC001604
ETIM 10.0	EC001604
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 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

Continued on next page

Environmental Product Compliance

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 GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-MSM750
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	-	E175199

Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for hazardous areas

Approval	Standard	Certificate Name
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

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 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	

Continued on next page

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

e!COCKPIT Library Description WagoAppM_Bus	1.2.2.5 29.09.2023	pdf 1251.31 KB	

Library

Libraries for Building Automation CODESYS 2.3	2025-01-30 30.01.2025	zip 71441.83 KB	

Continued on next page

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.: 210-197
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



Item No.: 210-114
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.: 210-112
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.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; 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

Continued on next page

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); WxHxD (164x100x164 mm); 9 x M12, 4 x M20



Item No.: 850-835
IP65 enclosure; Polyester (RAL 7032); WxHxD (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 flange plate



Item No.: 850-815/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate



Item No.: 850-816/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate



Item No.: 850-817/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate