



The BACnet MS/TP Controller (750-829) connects the WAGO I/O System to the BACnet protocol and supports the B-BC BACnet device profile per DIN EN ISO 16484-5. It communicates with other BACnet devices via BACnet MS/TP.

The controller provides the three following functionalities:

- 1. Native server: For each channel, appropriate BACnet objects are generated automatically for the digital and analog I/O modules that are connected to the controller.
- 2. Application server: Other supported BACnet objects can be created via IEC 61131-3 programming environment and made available to a BACnet network.
- 3. Application client: Using the client functionality, objects and their properties can be accessed by other BACnet devices.

- The IEC 61131-3 programmable controller is multitasking-capable and features a capacitor-backed RTC.
- The ETHERNET service interfaces can be used for IEC downloads, for example. Furthermore, two ETHERNET interfaces and an integrated switch allow the ETHERNET fieldbus to be wired in a line topology, eliminating the need for additional network devices, such as switches or hubs. Both interfaces support autonegotiation and Auto-MDI(X).
- An integrated Webserver provides configuration options to the user, while displaying the controller's status information. The Webserver cannot be used via BACnet MS/TP.

For initial start-up, access to the Web-Based Management (WBM) via standard Web browser is required to set the baud rate and activate the MS/TP fieldbus. Further configuration and commissioning is performed via WAGO BACnet Configurator's Windows software (V1.8 or higher) and requires an additional BACnet router within the network.

- The Protocol Implementation Statement (PICS) contains all supported objects, services and properties. The controller supports a maximum of 250 BACnet objects.
- A slide switch enables the switching on of a terminating resistor together with the BIAS network on the RS-485 interface.

## Notes

Note	The WAGO BACnet Configurator can be downloaded for free at <a href="http://www.wago.com">www.wago.com</a> .
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## Technical data

Communication	BACnet MS/TP Modbus (TCP, UDP) ETHERNET
ETHERNET protocols	HTTP BootP DHCP DNS SNTP FTP SNMP SMTP
Visualization	Web-Visu
CPU	32 bits
Programming languages per IEC 61131-3	Instruction List (IL) Ladder Diagram (LD) Function Block Diagram (FBD) Continuous Function Chart (CFC) Structured Text (ST) Sequential Function Chart (SFC)
Programming environment	WAGO-I/O-PRO V2.3 (based on CODESYS V2.3)
Configuration options	WAGO-I/O-CHECK BACnet Configurator Web-Based Management
Network length (max.)	limited by IEEE 802.3 specification
Baud rate	BACnet MS/TP: 38.4 kBd (9600, 19200, 38400*, 57600, 76800, 115200 Bd (per BACnet standard); * Factory setting)
Bus segment length (max.)	BACnet MS/TP: 1200 m; Depends on baud rate/cable (per BACnet standard) 1200 m at ≤ 76800 baud; 1000 m at
Transmission medium (communication/fieldbus)	ETHERNET: Twisted pair S-UTP, STP; 100 Ω; Cat. 5e
Program memory	1024 KB
Data memory	1024 KB
Non-volatile software memory	32 KB
Memory for fieldbus input variables (max.)	512 bytes
Memory for fieldbus output variables (max.)	512 bytes
Number of modules per node (max.)	99
Number of modules without a bus extension (max.)	64
Input and output process image (fieldbus) max.	1020 words/1020 words
Device-specific	BACnet device profile: B-BC (BACnet building controller); BACnet revision: 1.7
Powerfail RTC buffer	6 days (min.)
Indicators	LED (LINK/ACT) green: Network connection via ports 1 ... 2; LED (MS/BT, NS) red/green: Status of node/BACnet, network; LED (I/O, USR) red/green/orange: Local data bus status, status programmable by user; LED (A, B) green: Status of system power supply, field supply
Supply voltage (system)	24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP® connection)
Input current (typ.) at nominal load (24 V)	500 mA
Power supply efficiency (typ.) at nominal load (24 V)	90 %
Current consumption (5 V system supply)	450 mA
Total current (system supply)	1700 mA
Supply voltage (field)	24 VDC (-25 ... +30 %); via power jumper contacts
Current carrying capacity (power jumper contacts)	10 A
Number of outgoing power jumper contacts	3
Isolation	500 V system/supply; BACnet MS/TP: 1500 V (per BACnet standard)
WSPCert certification	in Vorbereitung

### Connection data

Connection technology: communication/fieldbus	BACnet MS/TP: 1 x Male connector; 4-pole; Modbus (TCP, UDP): 2 x RJ-45
Connection technology: system supply	2 x CAGE CLAMP®
Connection technology: field supply	6 x CAGE CLAMP®
Connection type 1	System/field supply
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 type 2	Communication/fieldbus: BACnet MS/TP
Solid conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor 2	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inches
Connection technology: device configuration	1 x Male connector; 4-pole

### Physical data

Width	61.5 mm / 2.421 inches
Height	100 mm / 3.937 inches
Depth	71.9 mm / 2.831 inches
Depth from upper-edge of DIN-rail	64.7 mm / 2.547 inches

### Mechanical data

Weight	168.9 g
Housing material	Polycarbonate; polyamide 6.6
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	without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); 5000 m (max.)
Relative humidity (without condensation)	95 %
Mounting position	any
Mounting type	DIN-35 rail
Vibration resistance	per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2
EMC emission of interference	per EN 61000-6-3
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Fire load	2.966 MJ
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	27-24-26-07
eCl@ss 9.0	27-24-26-07
ETIM 8.0	EC000236
ETIM 7.0	EC000236
PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
GTIN	4055143235310
Customs tariff number	85371091990

### Environmental Product Compliance

CAS-No.	11120-22-2 12060-00-3 1303-86-2 1317-36-8 25550-51-0 693-98-1 7439-92-1 79-94-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 2-methylimidazole 4-Methyl-1,2-cyclohexanedicarboxylic anhydride Diboron trioxide Lead Lead monoxide Lead silicate Lead titanium oxide (PbTiO <sub>3</sub> )
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Bulgaria)	e4ed94cb-c666-46e7-9f36-4aa8afba5209
SCIP notification number (Czech Republic)	92245d93-5f22-4f22-8006-53bbb3a657bd

### 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-PFC750
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	UL 508	E175199 Sec.1

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

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

Approvals for hazardous areas



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

Protocol and fieldbus specific certificates



Approval	Standard	Certificate Name
BACnet WSP Cert	-	BTL Listing 30379

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 750-829 <a href="#">↓</a>

Documentation

Manual			
System Manual WAGO I/O System 750/753	V 3.3.3 29.08.2023	pdf 8512.61 KB	<a href="#">↓</a>
System Manual Series 750/753			<a href="#">↓</a>
Product Manual WAGO BACnet Configurator	V 2.2.1 02.02.2023	pdf 9759.02 KB	<a href="#">↓</a>
Product Manual BACnet MS/TP Programmable Fieldbus Controller	V 1.2.0	pdf 13783.57 KB	<a href="#">↓</a>

Compatibility Information			
750-829 BACnet Con- formance Certificate		pdf 1156.29 KB	<a href="#">↓</a>
750-829 BACnet Tes- ting Laboratories Pro- duct Listing		pdf 81.95 KB	<a href="#">↓</a>
BACnet Protocol Imple- mentation Conforma- ce Statement (PICS)	V 2.1.0	pdf 831.53 KB	<a href="#">↓</a>

System Description			
Overview on WAGO-I/ O-SYSTEM 750 appro- vals		pdf 770.48 KB	<a href="#">↓</a>
750 Controller, General Product Information		pdf 507.50 KB	<a href="#">↓</a>

Additional Information			
BACnet objects, featu- res, services	V 1.0.2	pdf 1757.60 KB	<a href="#">↓</a>

Bid Text			
750-829	19.02.2019	xml 9.79 KB	<a href="#">↓</a>
750-829	19.05.2015	doc 39.00 KB	<a href="#">↓</a>
ausschreiben.de 750-829			<a href="#">↓</a>

### CAD/CAE-Data

CAD data		CAE data	
2D/3D Models 750-829	<a href="#">↓</a>	EPLAN Data Portal 750-829	<a href="#">↓</a>
		WSCAD Universe 750-829	<a href="#">↓</a>
		ZUKEN Portal 750-829	<a href="#">↓</a>

### Engineering-Software

Configuration and Commissioning Software			
WAGO-IO-PRO Demo-Version (759-912) / Serie 750, 758 und 762	V 2.3.9.68 17.02.2022	zip 122524.17 KB	<a href="#">↓</a>
(759-316) WAGO Ethernet Settings / Serie 750	06.18.01.01 02.09.2021	zip 26678.54 KB	<a href="#">↓</a>
WAGOupload	1.16.1.0 02.02.2022	zip 12111.45 KB	<a href="#">↓</a>

### Runtime Software

Firmware			
0750-0829, Controller BACnet MS/TP	V 14 19.10.2021	zip 2294.62 KB	<a href="#">↓</a>

### Libraries

Library			
Libraries for Building Automation CODESYS 2.3	2023-09-14 14.09.2023	zip 44926.41 KB	<a href="#">↓</a>

### 1 Compatible Products

#### 1.1 Optional Accessories

##### 1.1.1 Cables and connectors

###### 1.1.1.1 Connector plug



[Item No.: 750-979/000-011](#)  
Connector ETHERNET; RJ-45; Cat. 6A; angled; Code T568A; AWG 22; Strain relief



[Item No.: 750-979/000-021](#)  
Connector ETHERNET; RJ-45; Cat. 6A; angled; Code T568A; AWG 24; Strain relief



[Item No.: 750-979/000-012](#)  
Connector ETHERNET; RJ-45; Cat. 6A; angled; Code T568B; AWG 22; Strain relief



[Item No.: 750-979/000-022](#)  
Connector ETHERNET; RJ-45; Cat. 6A; angled; Code T568B; AWG 24; Strain relief



[Item No.: 750-977/000-011](#)  
Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568A; AWG 22



[Item No.: 750-978/000-011](#)  
Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568A; AWG 22; Strain relief



[Item No.: 750-977/000-021](#)  
Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568A; AWG 24



[Item No.: 750-978/000-021](#)  
Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568A; AWG 24; Strain relief

1.1.1.1 Connector plug



**Item No.: 750-977/000-012**  
 Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568B; AWG 22



**Item No.: 750-978/000-012**  
 Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568B; AWG 22; Strain relief



**Item No.: 750-977/000-022**  
 Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568B; AWG 24



**Item No.: 750-978/000-022**  
 Connector ETHERNET; RJ-45; Cat. 6A; straight; Code T568B; AWG 24; Strain relief



**Item No.: 750-975**  
 ETHERNET RJ-45 connector, IP20; ETHERNET 10/100 Mbit/s; for field assembly

1.1.2 Communication

1.1.2.1 Communication cable



**Item No.: 750-923**  
 Configuration cable; USB connector; Length: 2.5 m



**Item No.: 750-923/000-001**  
 Configuration cable; USB connector; Length: 5 m

1.1.3 DIN-rail

1.1.3.1 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

1.1.4 Marking

1.1.4.1 Group marker carrier



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

1.1.4.2 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

1.1.4.3 Marker carrier



**Item No.: 750-103**  
 Group marker carrier

1.1.5 Shield termination

1.1.5.1 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



## 1.1.6 Software

### 1.1.6.1 Basic version



**Item No.: 759-333**  
WAGO-I/O-PRO

**Item No.: 759-333/000-923**  
WAGO-I/O-PRO; USB-Set

## 1.1.7 System enclosure

### 1.1.7.1 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