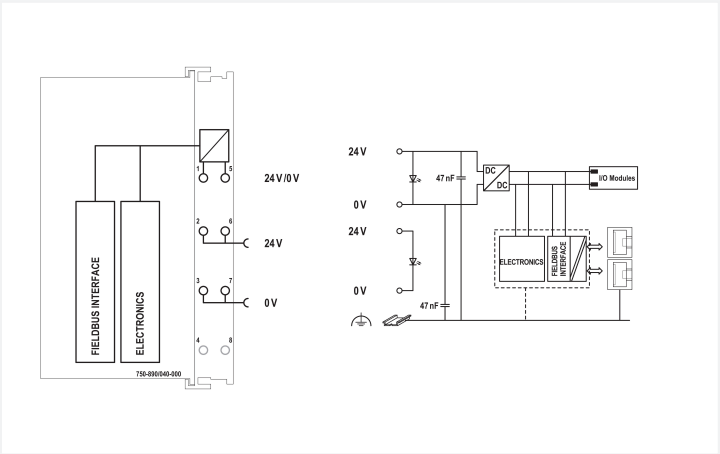
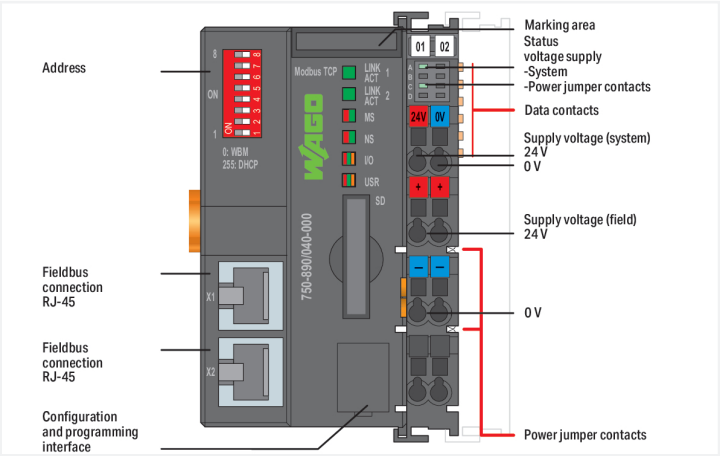
Data Sheet | Item Number: 750-890/040-000

Controller Modbus TCP; 4th generation; 2 x ETHERNET, SD Card Slot; Extreme

https://www.wago.com/750-890/040-000







The Modbus TCP Controller can be used as a programmable controller within ETHERNET networks in conjunction with the WAGO I/O System.
The controller supports all digital, analog and specialty modules found within the 750/753 Series, and is suitable for data rates of 10/100 Mbit/s.
Two ETHERNET interfaces and an integrated switch allow the 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).
The DIP switch configures the last byte of the IP address and may be used for IP address assignment.
This controller supports Modbus/TCP for use in industrial environments. It also supports a wide variety of standard ETHERNET protocols for easy integration into IT environments (e.g., HTTP(S), BootP, DHCP, DNS, SNTP, SNMP, (S)FTP).
An integrated Webserver provides user configuration options, while displaying the controller's status information.
The IEC 61131-3 programmable controller is multitasking-capable and features a capacitor-backed RTC.
A data memory of 8 MB is available.
The controller is equipped with a removable memory card slot. A memory card can be used to transfer device parameters or files (e.g., boot files) from one controller to another. The memory card can be accessed via FTP and be used as an additional drive.

The device is ideal for operation in extreme environments thanks to:

- An extended temperature range
- Greater immunity to impulse voltages and electromagnetic interference (depending on the application, a filter module may be needed; see the XTR System Manual)
- Higher vibration and shock resistance

Technical data

Communications	Modbus (TCP, UDP)
ETHERNET protocols	HTTP(S) BootP DHCP DNS SNTP FTP(S) SNMP
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* Web-Based Management CODESYS Library
Transmission rate	10/100 Mbit/s
Transmission medium (communication/fieldbus)	Twisted pair S-UTP; 100 Ω; Cat. 5; 100 m maximum cable length
Transmission performance	Class D per EN 50173
Program memory	8 MB
Data memory	8 MB
Non-volatile software memory	32 KB
Type of memory card	SD and SDHC up to 32 GB (all guaranteed properties only valid with WAGO's memory card)
Memory Card Slot	Push-push mechanism; cover lid (sealable)
Number of modules per node (max.)	64
Number of modules without a bus extension (max.)	64
Input and output process image (fieldbus) max.	1020 words/1020 words
Powerfail RTC buffer	6 days (min.)
Indicators	LED (LINK/ACT) green: Network connection via ports 1 … 2; LED (MS, NS) red/green: Status of node, network; LED (I/O, USR) red/green/orange: Local data bus status, status programmable by user; LED (A, B) green: System power supply status, field supply
Derating	Derating (supply voltage): Ambient temperatures under laboratory conditions: (-25 … +30 %); for -40 … +55 °C: 24 V (-25 … +20 %); for +55 … +70 °C: 24 V (-25 … +10 %); Lower limit in all temperature ranges: -27.5 % (including 15 % residual ripple)
Supply voltage (system)	24 VDC, SELV/PELV; via wiring interface (CAGE CLAMP® connection); External fuse required: 2 A slow-blow; Derating must be observed!
Input current (typ.) at nominal load (24 V)	500 mA
Power supply efficiency (typ.) at nominal load (24 V)	90 %
Current consumption (system supply)	440 mA
Total current (system supply)	1700 mA
Supply voltage (field)	24 VDC, SELV/PELV; via power jumper contacts (supply via CAGE CLAMP® connection; distribution via spring contact); External fuse required: 10 A slow-blow; Derating must be observed!
Current carrying capacity (power jumper contacts)	10 A
Number of outgoing power jumper contacts	2
Rated impulse withstand voltage	1 kV

Continued on next page

Connection Data

Connection technology: communication/fieldbus	Modbus (TCP, UDP): 2 x RJ-45
Connection technology: system supply	2 x CAGE CLAMP®
Connection technology: field supply	4 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type	System/field supply
Solid conductor	0.25 … 2.5 mm² / 24 … 14 AWG
Fine-stranded conductor	0.25 … 2.5 mm² / 24 … 14 AWG
Strip length	8 … 9 mm / 0.31 … 0.35 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

Mounting type	DIN-35 rail

Material data

Housing material	Polycarbonate; polyamide 6.6
Fire load	1.769 MJ
Weight	149.9 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	-40 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Ambient temperature (installation)	-20 … +70 °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.)
Mounting position	Horizontal left, horizontal up, vertical top and vertical bottom
Relative humidity (without condensation)	95 %
Relative humidity (with condensation)	Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for wind-driven precipitation, water and ice formation)
Vibration resistance	According to type test for marine classification (ABS, BV, DNV, IACS, LR): acceleration: 5g, IEC 60068-2-6, EN 60870-2-2, IEC 60721-3-1, -3, EN 50155, EN 61373
Shock resistance	per IEC 60068-2-27 (10g/16 ms/half-sine/1,000 shocks; 25g/6 ms/half-sine/1,000 shocks), EN 50155, EN 61373
Corrosion Resistance	Conformal Coating: yes EN/IEC 60068-2-60: Method 4 ISA S71.04: G3 Group A
EMC immunity to interference	per EN 61000-6-1, -2; EN 61131-2; marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5
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

Continued on next page

Commercial data

PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
GTIN	4055143978279
Customs tariff number	85371091990

Product Classification

UNSPSC	32151705
ETIM 9.0	EC000236
ETIM 10.0	EC000236
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1 79-94-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 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)	e9c74d93-64d5-4f8a-bb1c-e83023bc1f87
SCIP notification number (Belgium)	3a22b634-7aaf-45cc-9454-7ff74f3afdca
SCIP notification number (Bulgaria)	9b076bb0-6765-4f1d-bd52-603cc6244792
SCIP notification number (Czech Republic)	9b3cbeed-c670-4d90-b41a-5caf3597c25a
SCIP notification number (Denmark)	3d215b4a-840d-49c5-b7ff-db25d54b3559
SCIP notification number (Finland)	3b8921de-154e-4ce3-a86e-ae86bd83538c
SCIP notification number (France)	ba384246-91de-4324-9737-d638d435e66a
SCIP notification number (Germany)	e7730f93-4c36-42b2-94fb-5b4d0397bd59
SCIP notification number (Hungary)	4aa8214c-eefa-4966-96bd-751a131561ad
SCIP notification number (Italy)	fc6de0b7-f779-4143-8739-b08bab42dc8e
SCIP notification number (Netherlands)	471a262e-69da-44d5-a75f-3903aa8f6405
SCIP notification number (Poland)	a8b6c67c-bb92-42be-8260-072ef5ad0778
SCIP notification number (Romania)	b9cae33a-65dc-4755-8928-d1f3431aadf6
SCIP notification number (Sweden)	3b9183f0-aed4-4ae6-8868-973a60aede16

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-PFC750
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	-	-
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Continued on next page

Approvals for marine applications

Approval	Standard	Certificate Name
PRS Polski Rejestr Statków	-	TE/1099/880590/23

Approvals for hazardous areas

Approval	Standard	Certificate Name
CCC CNEX	CNCA-C23-01	2020312310000214 (Ex ec IIC T4 Gc)
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX005X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance
750-890/040-000

Documentation

Manual

Product Manual Controller Modbus TCP; 4th Generation; 2 x ETHERNET, SD Card Slot; XTR	V 1.1.1 25.05.2022	pdf 6231.80 KB

System Description

750 XTR Controller, General Product Information	pdf 458.11 KB

Bid Text

750-890/040-000	xml 12.99 KB
750-890/040-000	docx 20.41 KB

Instruction Leaflet

CCC Ex (Additional information)	26.04.2023	pdf 144.58 KB

CAD/CAE-Data

CAD data

2D/3D Models
750-890/040-000

CAE data

EPLAN Data Portal
750-890/040-000

ZUKEN Portal
750-890/040-000

Continued on next page

Engineering-Software

Configuration and Commissioning Software			
WAGO Ethernet Settings			
(759-316) WAGO Ethernet Settings / Serie 750	06.18.01.01 02.09.2021	zip 26678.54 KB	
WAGOupload	1.16.1.0 02.02.2022	zip 12111.45 KB	

Runtime Software

Firmware			
0750-089x, Controller	V 11 24.08.2023	zip 4696.31 KB	

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



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

Continued on next page

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.: 210-197
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.: 210-115
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.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

1.1.4 Marking

1.1.4.1 Group marker carrier



Item No.: 750-107
Group marker carrier

1.1.4.2 Marker



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

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1.1.4.3 Marker carrier



Item No.: 750-103
Group marker carrier

1.1.5 Memory card

1.1.5.1 Memory card

Item No.: 758-879/000-2116
Memory Card SD; pSLC-NAND; 16 GB; Temperature range: -40 to 85°C

1.1.6 Shield termination

1.1.6.1 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

1.1.8 System enclosure

1.1.8.1 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