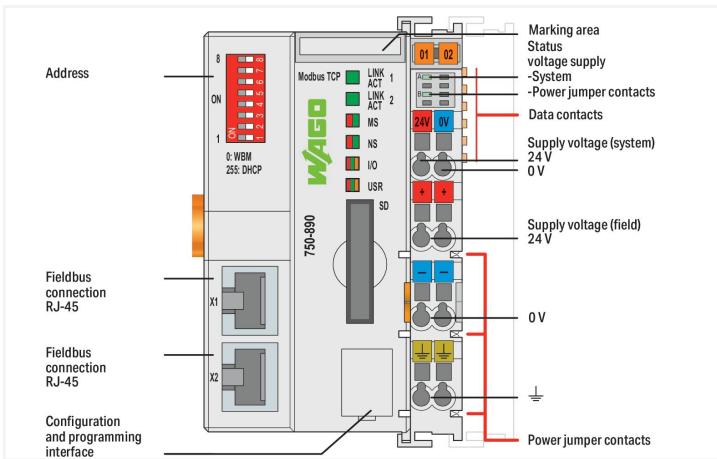
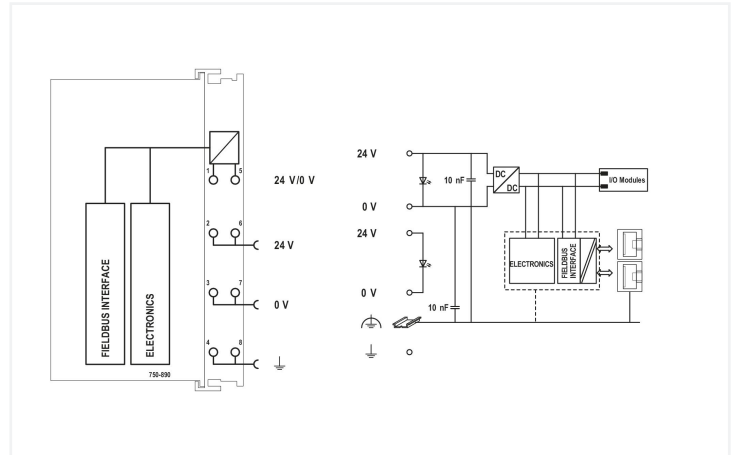


**Data Sheet | Item Number: 750-890**  
**Controller Modbus TCP; 4th generation; 2 x ETHERNET, SD Card Slot**



<https://www.wago.com/750-890>



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.

| Technical data     |   |
|--------------------|---|
| Communication      | Modbus (TCP, UDP)   |
| ETHERNET protocols | HTTP(S)<br>BootP<br>DHCP<br>DNS<br>SNTP<br>FTP(S)<br>SNMP |
| Visualization      | Web-Visu  |
| CPU                | 32 bits   |

## Technical data

|   |  |
|---|--|
| Programming languages per IEC 61131-3                 | Instruction List (IL)<br>Ladder Diagram (LD)<br>Function Block Diagram (FBD)<br>Continuous Function Chart (CFC)<br>Structured Text (ST)<br>Sequential Function Chart (SFC)   |
| Programming environment                               | WAGO-I/O-PRO V2.3 (based on CODESYS V2.3)  |
| Configuration options                                 | WAGO-I/O-CHECK<br>Web-Based Management<br>CODESYS Library  |
| Baud rate (communication/fieldbus 1)                  | 10/100 Mbit/s  |
| Baud 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 Memory Card)   |
| Memory card slot                                      | Push-push mechanism; cover lid (sealable)  |
| Number of modules per node (max.)                     | 250  |
| Number of modules without a bus extension (max.)      | 64   |
| Input and output process image (fieldbus) max.        | 1020 words/1020 words  |
| 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 |
| Supply voltage (system)                               | 24 VDC (-25 ... +30 %); via pluggable connector (CAGE CLAMP <sup>®</sup> 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)               | 440 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/field   |

## Connection data

|   |  |
|---|--|
| Connection technology: communication/fieldbus | Modbus (TCP, UDP): 2 x RJ-45                 |
| Connection technology: system supply          | 2 x CAGE CLAMP <sup>®</sup>                  |
| Connection technology: field supply           | 6 x CAGE CLAMP <sup>®</sup>                  |
| 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 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             | 151.6 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   | 4g per IEC 60068-2-6  |
| Shock resistance   | 15g per IEC 60068-2-27  |
| EMC immunity to interference   | per EN 61000-6-2, marine applications   |
| EMC emission of interference   | per EN 61000-6-3, marine applications   |
| Exposure to pollutants   | per IEC 60068-2-42 and IEC 60068-2-43   |
| Fire load  | 2.484 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                  | 4055143821407 |
| Customs tariff number | 85371091990   |

### Environmental Product Compliance

|   |  |
|---|--|
| CAS-No.                                   | 1303-86-2<br>1314-23-4<br>1317-36-8<br>693-98-1<br>7439-92-1<br>79-94-7  |
| REACH Candidate List Substance            | 2-methylimidazole<br>Diboron trioxide<br>Lead<br>Lead monoxide<br>Tetrabromobisphenol A (TBBPA)<br>Zirconium Oxide |
| RoHS Exemption                            | 7(a)<br>7(c)-I<br>7(c)-II  |
| SCIP notification number (Austria)        | a178a5e7-7aff-4ef8-abf5-f8d37107fe10   |
| SCIP notification number (Belgium)        | d9ecd297-2f9a-4d3e-9968-c066008f9a1b   |
| SCIP notification number (Bulgaria)       | 931be9f0-8b76-4c63-9255-96fc8ab3940a   |
| SCIP notification number (Czech Republic) | d54b0132-d8dc-4522-a9ea-6037babd5cf8   |
| SCIP notification number (Denmark)        | 18c3a65f-467a-4c68-90af-a4d79db320c0   |
| SCIP notification number (Finland)        | 6add2a83-d722-4a88-9153-284078e24d59   |
| SCIP notification number (France)         | 1718cffd-7b94-4ff9-a003-84a3867e7824   |
| SCIP notification number (Germany)        | bf462bbd-4a5f-4400-9344-76aabf6a6cb0   |

## Environmental Product Compliance

|  |                                      |
|--|--------------------------------------|
| SCIP notification number (Hungary)     | b1f5ec24-598d-4315-94c3-b90084e3b0eb |
| SCIP notification number (Italy)       | 6eb37179-69b5-4b2d-a8c6-d3427e2fcd1a |
| SCIP notification number (Netherlands) | 9dd050c8-1497-49f0-8d72-1e37f6972b4a |
| SCIP notification number (Poland)      | 6f5382a3-a622-4087-94cb-2096b6aaf456 |
| SCIP notification number (Romania)     | f06ffb8c-98ba-4fbf-becc-ae69d9daa2aa |
| SCIP notification number (Sweden)      | c020dade-472e-4dd5-87ec-4779356cd263 |

## 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-PFC750             |
| UL<br>Underwriters Laboratories<br>Inc. (ORDINARY LOCATI-<br>ONS) | UL 61010-2-201         | E175199 Sec11                   |

### Approvals for marine applications



| Approval  | Standard                           | Certificate Name  |
|---|------------------------------------|-------------------|
| ABS<br>American Bureau of Ship-<br>ping                         | -                                  | 22-2219060        |
| BSH<br>Bundesamt fuer See-<br>schifffahrt und Hydrogra-<br>phie | -                                  | 1104              |
| BV<br>Bureau Veritas S.A.                                       | Rules for class. of Steel<br>Ships | 66711/A0          |
| DNV<br>DNV GL SE  | DNV-CG-0339,Aug.2021               | TAA0000194        |
| KR<br>Korean Register of Ship-<br>ping                          | -                                  | KR HMB05880-AC001 |
| LR<br>Lloyds Register EMEA                                      | -                                  | LR22180952TA      |
| PRS<br>Polski Rejestr Statków                                   | -                                  | TE/2236/880590/19 |
| RINA<br>RINA Germany GmbH                                       | -                                  | ELE343521XG001    |

### Approvals for hazardous areas



| Approval   | Standard       | Certificate Name                                       |
|--|----------------|--|
| ATEX<br>TUEV Nord Cert GmbH  | EN 60079-0     |  |
| CCC<br>CNEX  | CNCA-C23-01    | 2020312310000213 (Ex<br>ec IIC T4 Gc)                  |
| EAC<br>Brjansker Zertifizierungs-<br>stelle                        | TP TC 012/2011 | EAC RU C-DE.AM02.<br>B.00163/19 (2Ex e IIC T4<br>Gc X) |
| IECEX<br>TUEV Nord Cert GmbH                                       | IEC 60079-0    | IECEX TUN 14.0035 X (Ex<br>ec IIC T4 Gc)               |
| INMETRO<br>TÜV Rheinland do Brasil<br>Ltda.                        | IEC 60079-0    | BR-Ex_TÜV 12.1297 X                                    |
| UKEx<br>WAGO GmbH & Co. KG   | EN 60079-0     | UKCA_WA<br>GO22UKEX003X_ec                             |
| UL<br>Underwriters Laboratories<br>Inc. (HAZARDOUS LOCA-<br>TIONS) | UL 121201      | E198726 Sec.1  |

## Downloads

## Environmental Product Compliance


## Compliance Search

Environmental Product  
Compliance 750-890

## Documentation


## Manual


|  |                       |                   |   |
|--|-----------------------|-------------------|---|
| Product Manual Controller Modbus TCP; G4; 2ETH; SD | V 1.3.1<br>25.05.2022 | pdf<br>7409.85 KB |  |
|--|-----------------------|-------------------|---|

|                                       |                       |                   |   |
|---------------------------------------|-----------------------|-------------------|---|
| System Manual WAGO I/O System 750/753 | V 3.1.0<br>05.12.2022 | pdf<br>8495.90 KB |  |
|---------------------------------------|-----------------------|-------------------|---|


System Manual Series  
750/753


## System Description

|   |                  |   |
|---|------------------|---|
| Overview on WAGO-I/O-SYSTEM 750 approvals | pdf<br>770.48 KB |  |
|---|------------------|---|

|   |                  |   |
|---|------------------|---|
| 750 Controller, General Product Information | pdf<br>507.50 KB |  |
|---|------------------|---|


## Bid Text

|         |            |                  |   |
|---------|------------|------------------|---|
| 750-890 | 26.06.2019 | docx<br>19.63 KB |  |
|---------|------------|------------------|---|

|         |            |                |   |
|---------|------------|----------------|---|
| 750-890 | 19.02.2019 | xml<br>9.54 KB |  |
|---------|------------|----------------|---|

ausschreiben.de  
750-890

## Instruction Leaflet

|                                 |            |                  |   |
|---------------------------------|------------|------------------|---|
| CCC Ex (Additional information) | 26.04.2023 | pdf<br>159.76 KB |  |
|---------------------------------|------------|------------------|---|

## CAD/CAE-Data

## CAD data

2D/3D Models 750-890



## CAE data


EPLAN Data Portal  
750-890


ZUKEN Portal 750-890




## Engineering-Software

## Configuration and Commissioning Software

|   |                          |                     |   |
|---|--------------------------|---------------------|---|
| WAGO-IO-PRO Demo-Version (759-912) / Serie 750, 758 und 762 | V 2.3.9.68<br>17.02.2022 | zip<br>122524.17 KB |  |
|---|--------------------------|---------------------|---|

|  |                           |                    |   |
|--|---------------------------|--------------------|---|
| (759-316) WAGO Ethernet Settings / Serie 750 | 06.18.01.01<br>02.09.2021 | zip<br>26678.54 KB |  |
|--|---------------------------|--------------------|---|

|            |                        |                    |   |
|------------|------------------------|--------------------|---|
| WAGOupload | 1.16.1.0<br>02.02.2022 | zip<br>12111.45 KB |  |
|------------|------------------------|--------------------|---|

## Runtime Software

| Firmware              |                    |                   |  |
|-----------------------|--------------------|-------------------|--|
| 0750-089x, Controller | V 10<br>10.02.2022 | zip<br>4643.77 KB |  |

## 1 Compatible Products

### 1.1 Required Accessories

#### 1.1.1 Memory card

##### 1.1.1.1 Memory card



**Item No.: 758-879/000-2108**  
Memory Card SD; pSLC-NAND; 8 GB;  
Temperature range: -40 to 90°C

**Item No.: 758-879/000-001**  
Memory Card SD; SLC-NAND; 2 GByte;  
Temperature from -40 to 90 °C

### 1.2 Optional Accessories

#### 1.2.1 Cables and connectors

##### 1.2.1.1 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

### 1.2.2 Communication

### 1.2.2.1 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

### 1.2.3 DIN-rail

#### 1.2.3.1 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

### 1.2.4 Marking

#### 1.2.4.1 Group marker carrier



**Item No.: 750-106**

Group marker carrier

#### 1.2.4.2 Marker



**Item No.: 750-100**

Marker card; as a DIN A4 sheet; plain

**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

### 1.2.4.3 Marker carrier



**Item No.: 750-103**

Group marker carrier

### 1.2.5 Shield termination

#### 1.2.5.1 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.: 790-140**

Shield clamping saddle; diameter of compatible conductor

### 1.2.6 Software

#### 1.2.6.1 Basic version



**Item No.: 759-333**

WAGO-I/O-PRO



**Item No.: 759-333/000-923**

WAGO-I/O-PRO; USB-Set