



751 Compact Controller 100 Series

Max Performance in a Minimum Space

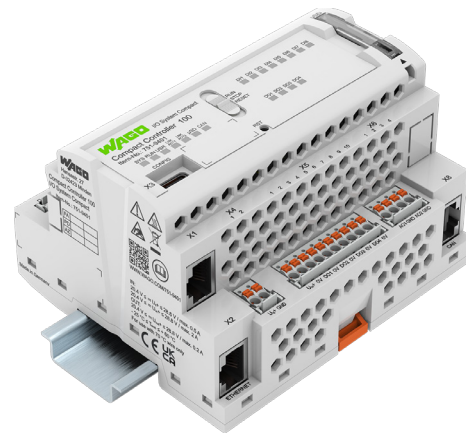


COMPACT CONTROLLER 100 SERIES

WAGO's Compact Controller 100 family offers powerful programming in a small-scale PLC, combined with on-board I/O.

Carefully engineered for a wide range of applications, these devices are cost effective and easy to use.

The two Ethernet ports provide unparalleled flexibility and support the most popular fieldbuses to help engineer your application.



Device	Part Number
Compact Controller 100	751-9301
Compact Controller 100 with CANopen	751-9401
Compact Controller 100 Expansion Kit	8003-0099 /0000-0644
Micro SD Card 2 GB	758-879/000-3102
MicroSD Card 8 GB	758-879/000-3108

Powerful control

Powerful Cortex Processor

- 751-9301 Single Core
- 751-9401 Dual Core

Onboard memory

- Ample internal memory
- Micro SD Card for extra storage

Help protect assets with built-in network security

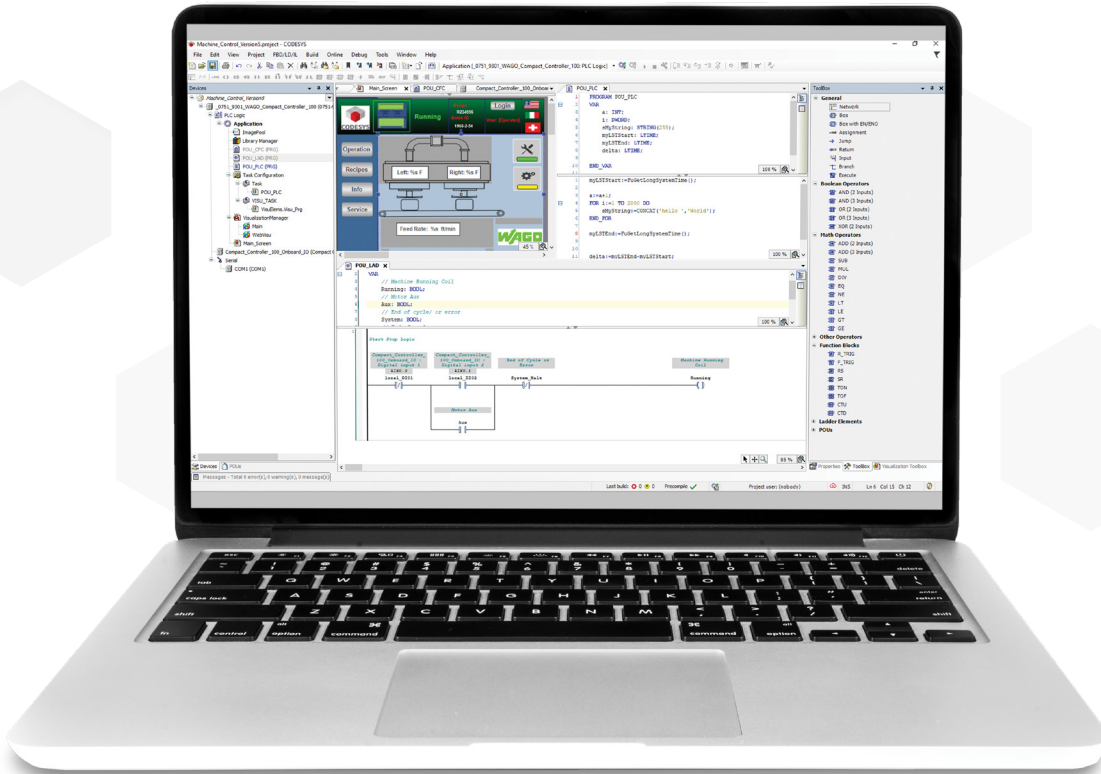
- Built-In Firewall
- Support of VPNs
- Enable/Disable communication ports

Ultimate connectivity for industrial networking

- Two configurable RJ45 Ethernet ports
- One serial port
- USB-C service port
- CANopen port 751-9401

Ready for digital transformation applications

- Easy Cloud Server configuration
- Support of MQTT protocol



CODESYS V3.5 Engineering Tool

The Compact Controller 100s are programmed using market leading CODESYS V3.5 development software to help reduce time and costs. Engineers are able to use the most appropriate programming languages for their applications. In addition, the software is used to create web visualizations that can be used by equipment operators and maintenance staff to interface with machines.



Professional engineering software for IEC61131-3 compliant projects

- CODESYS V3.5 Programming Software at no cost
- Use the language of your choice (or any combination) - *Ladder Diagram, Sequential Function Chart, Function Block Diagram, Continuous Function Chart, Structured Text*



Build your own operator interfaces via HTML5 Web Visualizations

- Develop user interfaces via a web browser
- One software for logic and screen development, with common data tags



Expand your options via a Linux based real-time operating system

- Docker applications in parallel with IEC61131
- Add data handling apps like Node-RED

Adept Control



Machine Control

WAGO's Compact Controller 100 family is engineered to provide exceptional control performance within a compact footprint, making these controllers ideal for small machine automation applications.

IIoT Application

Perfect for plant floor digitalization projects thanks to its wide-ranging technologies including: MQTT protocol for connecting to Cloud Services as well as on-board network security.

HVAC Applications

These Compact Controller 100s support BACnet* and can be used as a gateway to other fieldbuses such as MODBUS TCP or even OPCUA for use in HVAC and building automation applications.

* Additional licensing required



High Performance

- Cortex A7 650 Mhz processor for a wide variety of functions
- Single and dual core options
- 4 GB Flash memory, 512 MB Ram



Two Configurable RJ45 Ethernet Ports

- Use as a switch or separated with unique IP address per port
- Support of popular Industrial Ethernet protocols: MODBUS TCP/UDP, Ethernet/IP & EtherCAT, OPCUA, MQTT, DNP3 and more



HTML5 Visualization

- Built-in web server for configuration and operator interface screens
- State-of-the-art technology for visualizations to be displayed on mobile devices like smartphones and tablets



IIoT Ready

- Easy to connect to Cloud servers with MQTT
- JSON function blocks for data handling



Cyber Security

- SSH and SSL/TLS encryption methods are integrated by default
- Built-in firewall provides additional protection against unwanted access
- Network broadcast protection & rate limiting



Micro SD Card Slot

- Expand memory capabilities up to 32 GB
- Save user program, application data, source code and device settings



Easy Handling

- USB-C service port for configuration & programming
- Start/stop/reset switch for system control



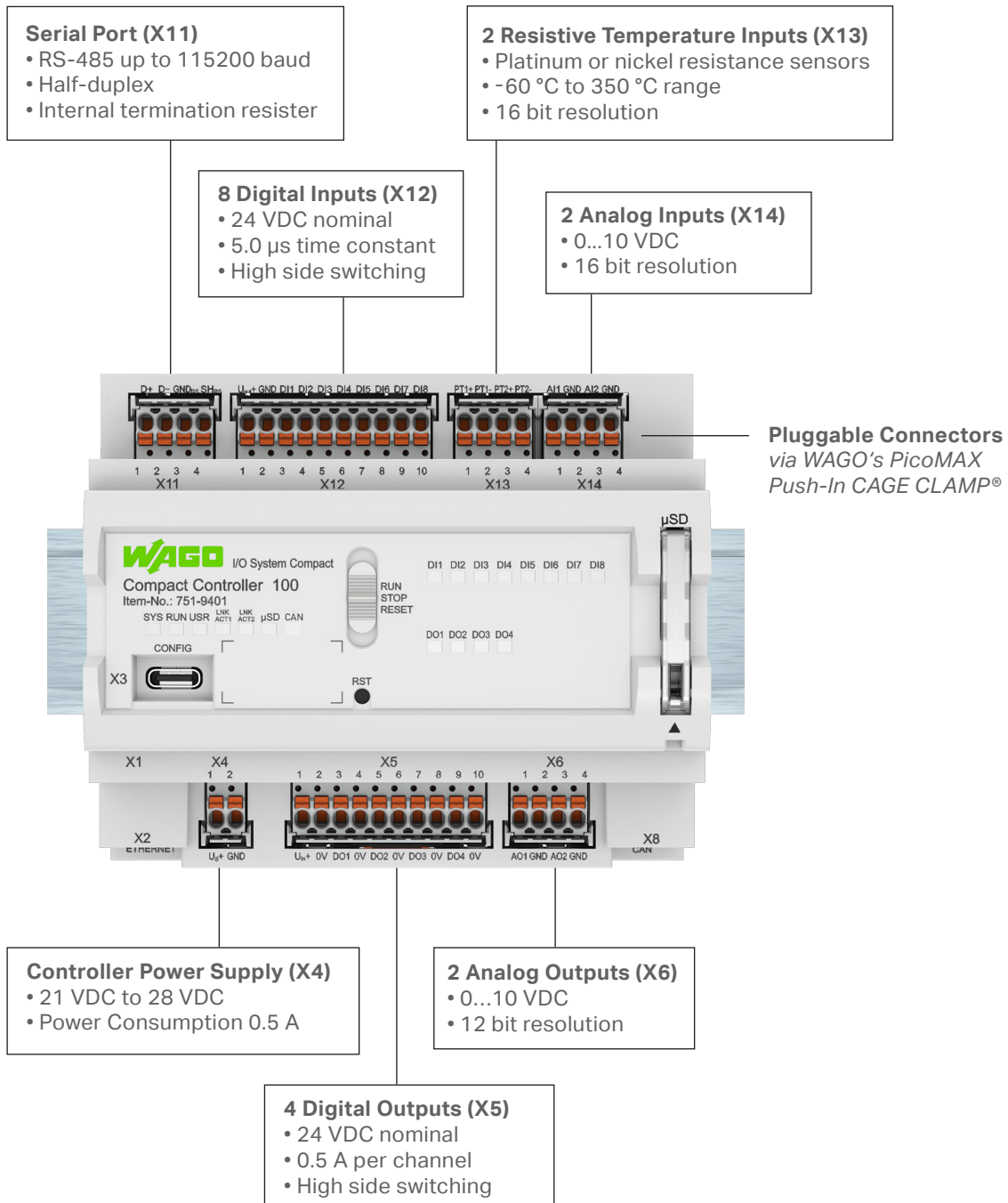
Maintenance-Free

- Easy to maintain
- No fan or battery that need maintenance

I/O Built-In



The Compact Controller 100 family's built-in I/O has the flexibility for your simple control applications. With small dimensions and a wide variety of I/O, you can fit the controller into small machine applications or use it for digital transformation projects.



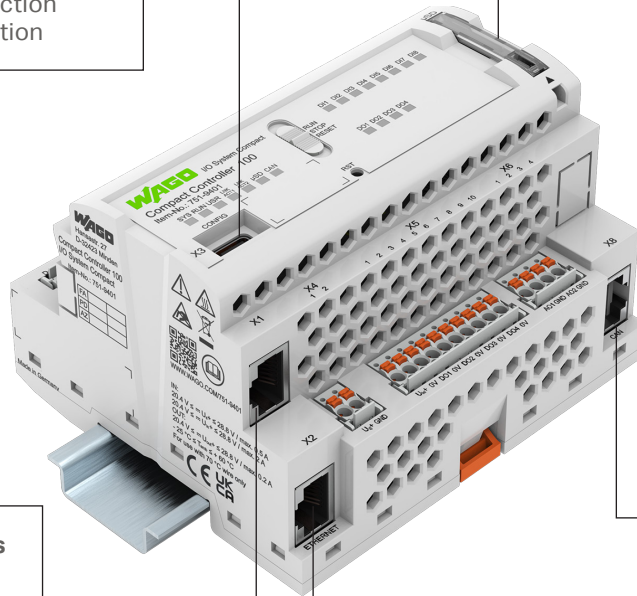
Communications & Storage Features

USB Programming Port

- USB-C connection
- Direct connection for configuration

Micro-SD Card Slot

- Expand memory for data collection
- Run OS from SD
- Update firmware

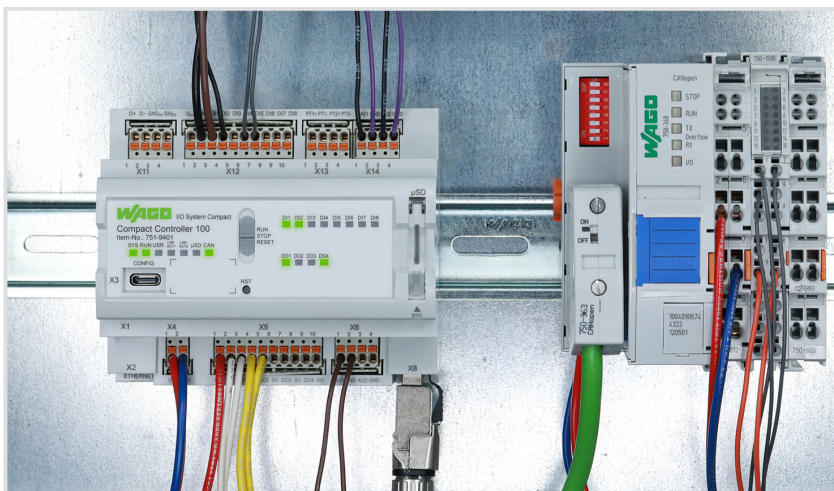


Two Ethernet Ports

- Configurable for your application
- Use as a switch
- Separate with 2x IP address
- Built in firewall
- Support of industrial protocols

CANopen Port (750-9401)

- RJ45 connection
- Connect to CANopen sensors
- Supports J1939 for engine monitoring
- Expand I/O with CAN coupler



Communication and memory expansion is easy with these Compact Controller 100s. The dual configurable Ethernet ports offer the flexibility you need for your applications. The CANopen port implements an interface to a wide variety of sensors, I/O and devices. The USB programming port provides direct connection for configuration and programming.

Cloud Connectivity

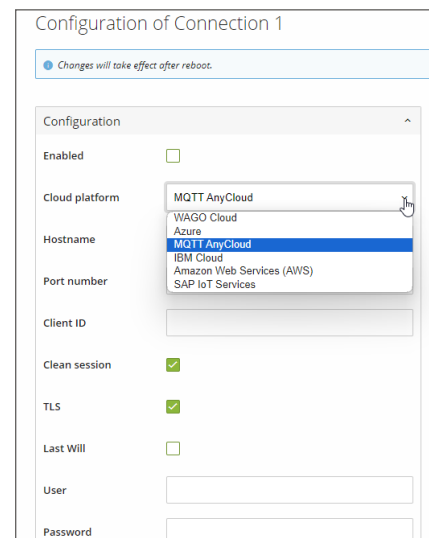
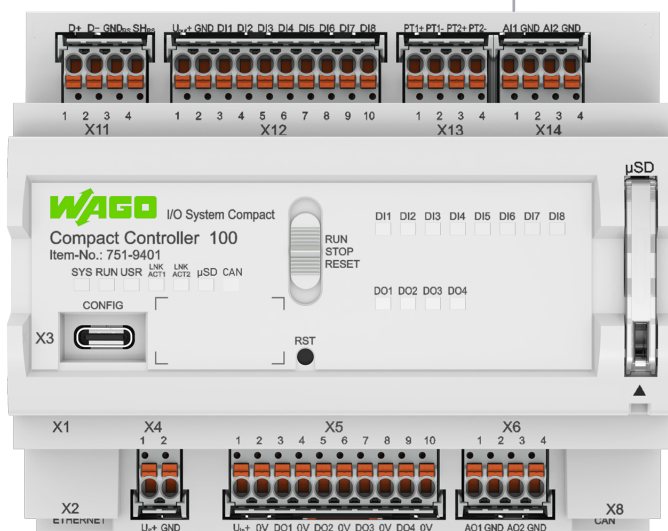
IIoT connectivity is easily accomplished using the Compact Controller 100's web-based management. Simply select the Cloud you want to connect to in a drop down, and fill in the communication details.

Supports connections for:

- Microsoft Azure
- Amazon Web Services
- IBM Cloud
- Generic MQTT Connections



MQTT
ETHERNET



Industrial Protocols Supported

The two Ethernet ports on the Compact Controller 100s support the most popular industrial protocols. Exchange data with remote devices such as sensors or variable frequency drives over Modbus, Ethernet/IP or EtherCAT. The communication is ideal for fundamental control and monitoring a few control devices.

Microgrids and Renewable Energy

The Compact Controllers are ideal for microgrids and renewable energy controls, supporting common protocols used in applications. The controllers can be enabled via a license to support DNP3, IEC60870 and IEC61850. These protocols connect to field devices for local control and monitoring. The controllers use the second Ethernet port as a gateway to higher level system via OPCUA, MQTT or via supported fieldbuses.

HVAC and Building Automation

With the onset of smart buildings, these Compact Controller 100s can help building controls engineers meet the requirements of modern BAS applications. The controller supports BACnet communications via a license, offering an effective way to interface building automation supervisory systems.

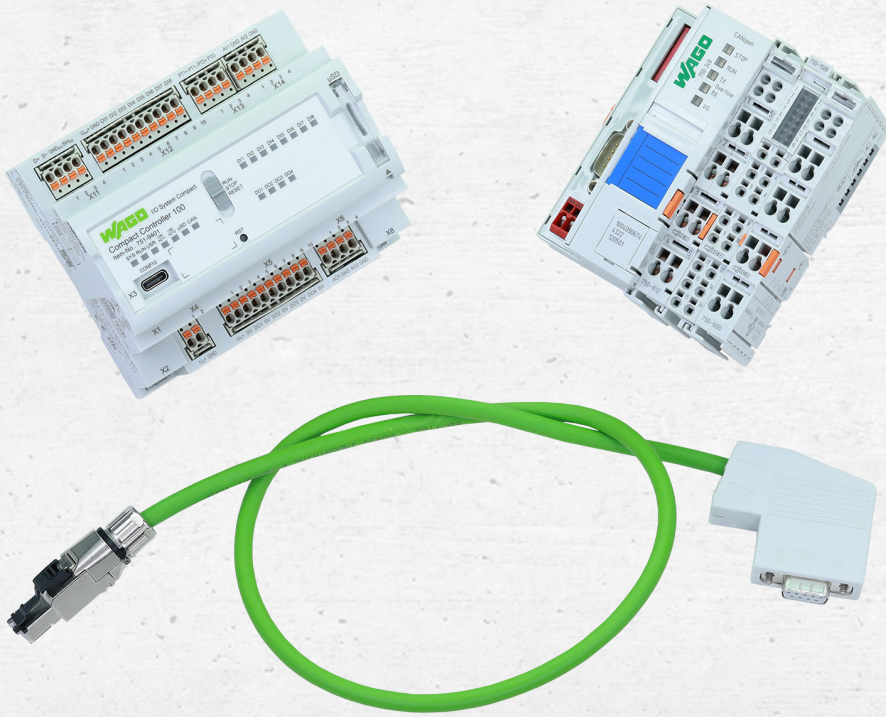
SCADA Systems

OPCUA and MQTT are the standards for connecting to SCADA and Cloud servers. Our family of Compact Controller 100s supports both of these. It may be beneficial in some SCADA applications to take advantage of the MQTT based protocol SPARKPLUG. This can easily be added to either Compact Controller 100 via a license.

Available add-on licenses for the Compact Controller 100

Description	License	Comment
BACnet 300 M	2759-2283/211-1000	BACnet 256 tag objects
BACnet 300 S	2759-2273/211-1000	BACnet 48 tag objects
IEC 60870 Server	2759-290/211-1000	Simultaneously maintain up to 4 connections to the control system
IEC 60870 Master M	2759-293/211-1000	Support connections up to 16IEC 60870-5 devices
IEC 61850 Server	2759-2240/211-1000	Creation of gateway converter & supports GOOSE Publisher
IEC 61850 Client M	2759-2243/211-1000	Process data from up to 4 servers with each 10 requests
DNP3 Server	2759-2290/211-1000	Send digital, analog & count values to the controller
DNP3 Master M	2759-2293/211-1000	Maintain connections for up to 4 DNP3 devices
Sparkplug	2759-247/210-1000	Add MQTT-based Sparkplug & define both topic and payload





I/O Expansion Kit

For applications that require additional I/O, the CANopen coupler kit is just what you need. This kit includes a CANopen coupler with an I/O module with 8 digital inputs and 8 digital outputs. If you need additional I/O, you can choose from over 500 I/O modules from WAGO's 750 and 753 series. The kit is mounted onto a DIN rail and comes with a 3-foot communication cable. The cable connects to the RJ45 CANopen port on the Compact Controller 100 and the other end with a 9 pin D-sub to the CANopen Coupler.

Adding the I/O within your CODESYS 3.5 program is a breeze. Just add the CAN bus, coupler and I/O in the communications tree for straight forward setup. You can even add tag names for the I/O points from this tree and use them in your program.

Kit Bill of Material (8003-0099/0000-0644)

Part Number	Description
751-9401	Compact Controller 100 with CANopen
750-348	CANopen Coupler
750-602	Supply Module
750-1506	8 DI / 8 DO
750-600	End Module
N/A	Communication Cable 3 ft.



SCAN HERE
for instructions

CODESYS Development System

Our Compact Controller 100 family is programmed with CODESYS V3.5, the leading software platform for IEC61131-3 compliant project engineering. This system combines advanced programming with the capabilities of professional software development for modern control applications.

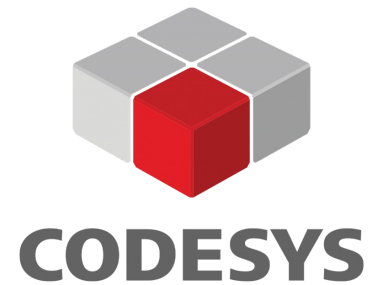
Supported IEC61131-3 Languages include:

Ladder Diagram, Structured Text, Function Block Diagram, Continuous Function Chart and Sequential Function Chart

WAGO offers the CODESYS Development System free of charge. Download at WAGO.com/us

Features of the development environment:

- Tools for creating structured & efficient applications
- WAGO and CODESYS libraries with documentation
- Multi-Controller development in one application
- Task system to optimize application performance
- Customizable windows
- Color-coded syntax & automatic syntax checking
- Integrated debugging & tracing tools
- Security built-in: file encryption, encrypted communications



Development of HMI screens directly in the IEC61131-3 environment

Developing a human machine interface (HMI) and a PLC application will enable users to operate and maintain their systems in a very efficient manner. The HTML5 based visualizations are hosted within both of the Compact Controller 100s and can be viewed using most web browsers on your PC and mobile devices. With the logic and HMI development tools using a common database, engineering development time and maintenance costs can be reduced.

Visualizations

- Create modern and professional visualization screens quickly
- Integrated alarm management tools
- Language, images and unit conversion switching
- Multi-level access
- Common element libraries such as gauges, push buttons, & trends





Accessories



Compact, Reliable Power Supply

WAGO offers the 787-2850 Power Supply which delivers 1¼ A at 24 VDC. With the same housing dimensions as the Compact Controller 100s, it is an ideal pairing. The combination controller & power supply has a compact footprint to fit well within the physical limits of smaller machines.



WAGO Micro SD Card

Industrial applications call for industrial memory. WAGO offers a 2 GB & 8 GB Micro SD card (758-879/000-3108) that are rated at -40 °C to +90 °C.

WAGO Corporation
N120 W19129 Freistadt Road
Germantown, Wisconsin 53022
Telephone: 800 / DIN Rail (346-7245)
Fax: 262 / 255-3232
info.us@wago.com
www.wago.us

Canada
WAGO Corporation
Tel. 800/DIN Rail (346-7245)
Fax 262/255-3232
www.wago.ca

Mexico
WAGO Corporation
Queretaro
Tel. 001/800/309/5975
+ 52/442/221/5946
Fax + 52/442/221/5063
www.wago.mx

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