Zentro Core M-014

Technical Manual

Part number ZN-COREM-001 · Document number ZT-MA-CORE-M014-001-EN · Revision A

CONTENTS

Companion documents: ZT-DS-CORE-M014-001-EN · ZT-IG-CORE-M014-001-EN

1 THE PRODUCT AND WHAT IT IS FOR

Zentro Core M-014 is a Linux-based programmable logic controller for control, regulation and monitoring in building, HVAC and automation systems. It provides 20 digital inputs with pulse counters, 14 relay outputs, 4 transistor outputs with PWM, one analogue input and one analogue output, together with an RS-485 serial interface and a 1-Wire bus for temperature sensors. The unit mounts on a 35 mm DIN rail inside a closed distribution enclosure and is powered from 24 V DC.

Category	**Programmable logic controller (PLC) on a Linux operating system**
Processor	**Quad-core 1.5 GHz**
Memory	**8 GB**
Storage	**microSD**
Total I/O points	**40**

2 INDICATORS AND CONFIGURATION

User LEDs	**4**

3 COMMUNICATION AND ADDRESSING

RS-485 channels	**1**
RS-485 bit rate	**2 400 – 115 200 bps**
Protocols	**Modbus TCP · Modbus RTU · open programming interface · SysFS**
Ethernet	**1 × 1 Gbit**
USB	**2 × USB 2.0 + 2 × USB 3.0**
Wireless	**Wi-Fi IEEE 802.11 b/g/n · Bluetooth 5.0 BLE · internal antenna**
1-Wire	**One bus · RJ45 connector · Vcc 5 V, up to 50 mA · up to 15 sensors per channel**

4 OPERATION, SERVICE AND FAULTS

> **WARNING**
> Disconnect the supply before any wiring work. Working on a live circuit risks personal injury and irreversible damage to the unit.

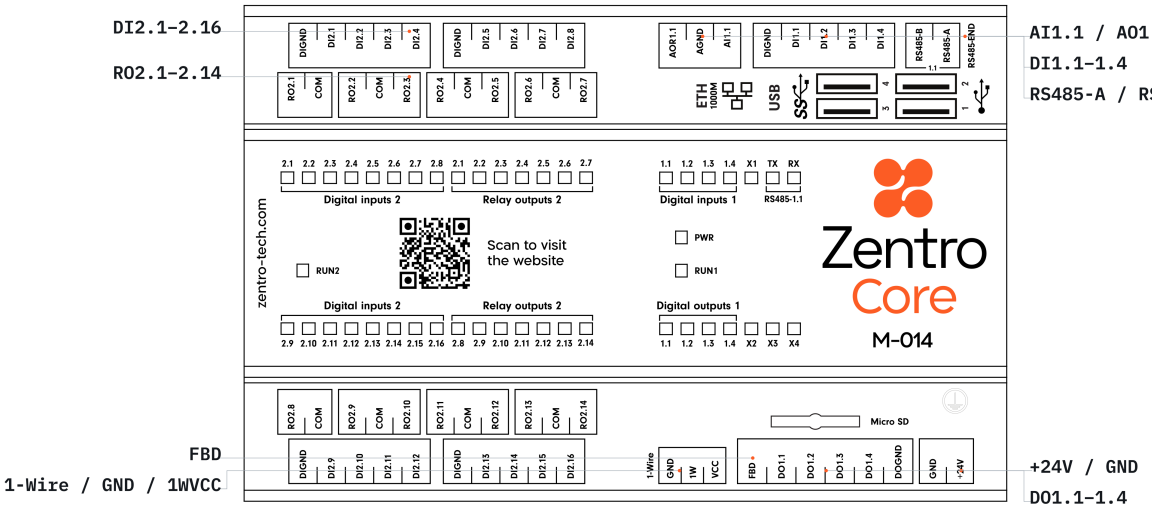
Removal from the DIN rail

Disconnect the supply and every field cable, release the DIN rail clip with a flat screwdriver, pull the bottom of the unit outwards and lift it off the rail.

Frequently asked

How many I/O points does the controller have?	40 physical I/O points: 20 digital inputs, 14 relay outputs, 4 transistor outputs, one analogue input and one analogue output.
How is the point count extended?	Through expansion modules on the RS-485 line using Modbus RTU. An expansion module defaults to 19 200 bps, 8N1, Modbus address 15.
Can the controller be mounted in any position?	No. It mounts on a 35 mm DIN rail inside a closed enclosure, vertically, with at least 80 mm clearance from the enclosure walls where there is no forced ventilation.
Are the relay outputs protected?	No. The relays have no short-circuit protection. An inductive load requires external protection — an RC circuit, a varistor or a diode. The transistor outputs have an internal flyback diode at the FBD terminal, intended only for loads within the digital output group.
How many 1-Wire sensors can be connected?	Up to 15 per channel. For multiple sensors use a dedicated hub and 24 AWG 0.5 mm cable. Between hubs, use shielded cable with the screen bonded to neutral.
Does the controller require earthing?	Yes. It is Class I equipment. Connect an earth conductor to the marked point on the enclosure using a cable lug and an M4 screw; the DIN rail must also be earthed.
What is Direct Switch?	A mechanism that links a digital input to the corresponding output in the same section, executed by the section processor independently of the control program. It supports identity, negation and toggle, and works only between an input and an output carrying the same section number, one to one.

5 DIMENSIONS AND MECHANICAL INSTALLATION



Front face, terminals and indicators

DI1.1–1.4	Digital inputs — common DIGND
DO1.1–1.4	Transistor outputs — common DOGND
AI1.1 / AO1.1	Analogue input and output — common AGND
RS485-A / RS485-B / RS485-END	Serial line
1-Wire / GND / 1WVCC	Sensor bus
FBD	Flyback diode for the digital outputs
+24V / GND	Supply
DI2.1–2.16	Digital inputs, section 2 — common DIGND ×4
RO2.1–2.14	Relay outputs, section 2 — common COM
Dimensions (W × H × D)	**141 × 90 × 55.5 mm**
Dimensions note	**Excluding the DIN rail holder**
Weight	**378 g**
Enclosure	**Aluminium**

6 STANDARDS AND COMPLIANCE

Compliance	**The product carries the CE marking.**
Compliance	**Complies with EU directives LVD 2014/35/EU, EMC 2014/30/EU and RoHS 2015/863/EU.**
Standard	**Conforms to EN 60730-1:2016 · EN IEC 61000-6-2:2019 · EN IEC 61000-6-3:2021.**
Compliance	**Conformity assessed and certified by an accredited test institute, valid to 2029-11-28.**
Performance	**Ingress protection IP 20 per IEC 529.**
Performance	**Safety extra-low voltage (SELV) supply, 24 V DC.**
Performance	**4 000 V isolation between relay contacts and control circuitry.**

Compliance evidence is supplied on request.

7 REVISION HISTORY

Revision	Date	What changed	Approved by
A	2026-08-04	First issue — generated from the canonical record.	Not yet approved