simex

# MULTICHANNEL CONTROLLERS, DATA RECORDERS

# MultiCon

## & SCADALite


2019 - 2020

Measure,
**Control** and Log Data

# Construction

## Hardware inputs/outputs

The biggest advantage of all devices from the MultiCon line is a big number of built-in inputs / outputs accessible in one compact device. The most developed version **CMC-99** has up to 48 measurement or digital inputs and 60 virtual channels whereas **CMC-141** has 50% more inputs / outputs and virtual channels.

Thanks to a well-thought-out module design you can choose among a wide range of cards and connect them to slots in the way you wish but you do not have to use all slots. You can also decide on your own how to use virtual channels, if they are going to be used for direct measurement readings, mathematical functions, timers, profile creation, set points or virtual objects.

We offer the following cards:

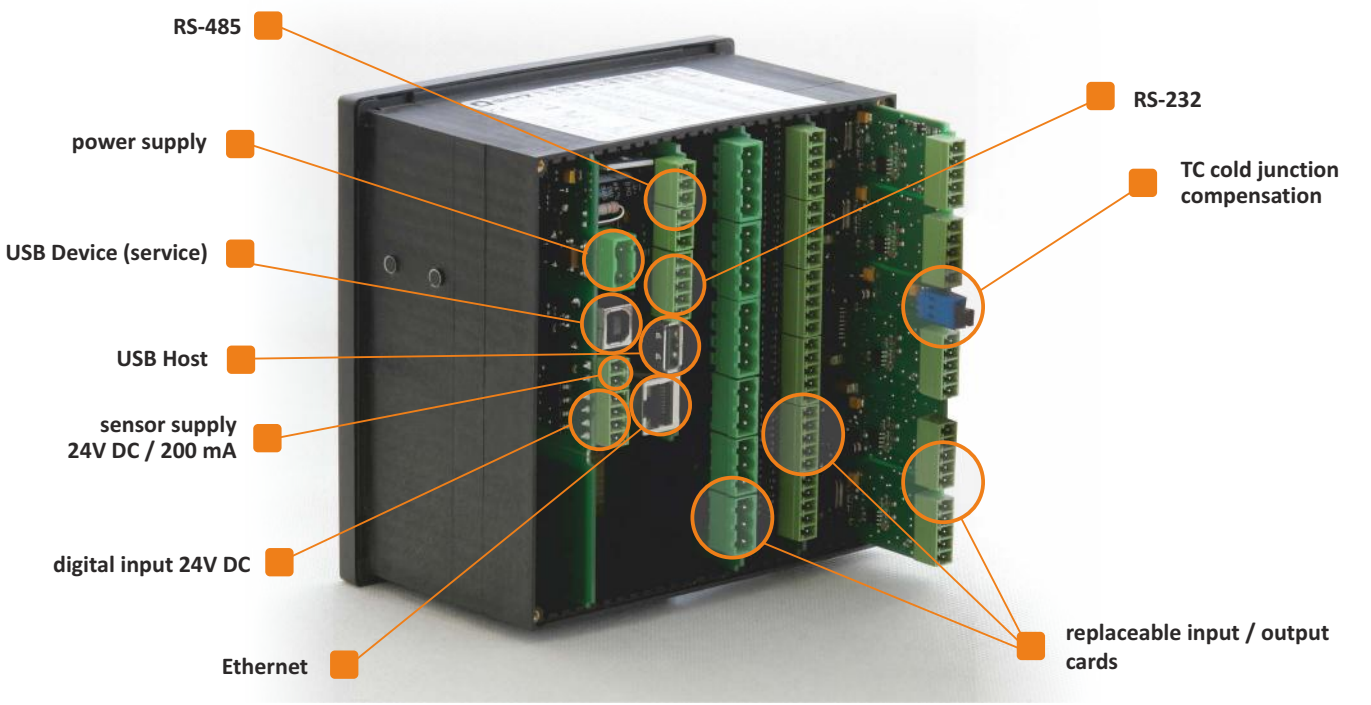
**inputs**:
- universal
- voltage
- current
- thermocouple
- RTD
- NTC
- digital
- counters
- totalizer
- rate

**outputs**:
- relay
- SSR
- current (4-20 mA) signals

**communication**:
- Ethernet
- RS-485
- RS-232
- USB Host

Should you need to update your application or add new functionalities in the future?
All you have to do is to send your device to an authorized distributor who will perform the changes you require.

## Sample configuration



# Specification

| | CMC-99 | CMC-141 | CMC-N16 |
|---|---|---|---|
| **Power supply/ consumption** | 19-50V DC, 16-35V AC or 85-260V AC/DC, typ. 15 VA, max. 20 VA | 19-50V DC, 16-35V AC or 85-260V AC/DC, typ. 25 VA, max. 35 VA | 19-50V DC, 16-35V AC or 85-260V AC/DC, typ. 15 VA, max. 20 VA |
| **Display** | 3.5” graphic TFT, 16-bit colour, 320 x 240 pxs, touchscreen navigation | 5.7” graphic TFT, 16-bit colour, 320 x 240 pxs, touchscreen navigation | 3.5” graphic TFT, 16-bit colour, 320 x 240 pxs, touchscreen navigation |
| **Measurement inputs** | • up to 9 universal, isolated: 0/4 ÷ 20 mA; 0/1 ÷ 5V, 0/2 ÷ 10V; thermocouples: J, K, S, T, N, R, B, E (PN-EN), L (GOST); -10 ÷ 25 mV, -10 ÷ 100 mV, 0 ÷ 600 mV; RTD (2/3/4 wire): Pt100, Pt500, Pt1000 (PN-EN), Pt'50, Pt'100, Pt'500 (GOST), Ni100, Ni500, Ni1000 (PN-EN), Cu50, Cu100 (PN-83M-53852), Cu'50, Cu'100 (PN-83M-53852); resistance 0 ÷ 300 Ω, resistance 0 ÷ 3 kΩ<br>• up to 48 analogue: 0/4 ÷ 20 mA, 0/1 ÷ 5V, 0/2 ÷ 10V<br>• up to 24 thermocouples: J, K, S, T, N, R, B, E (PN-EN); L (GOST); ± 25 mV, ± 100 mV, -10 ÷ 25 mV, -10 ÷ 100 mV<br>• up to 12 RTD: Pt100, Pt500, Pt1000 (PN-EN); Pt'50, Pt'100, Pt'500 (GOST); Ni100, Ni500, Ni1000 (PN-EN); Cu50, Cu100 (PN-83M-53852); Cu'50, Cu'100 (PN-83M-53852); resistance 0 ÷ 300 Ω, resistance 0 ÷ 3 kΩ<br>• up to 24 NTC: 0 ÷ 110 kΩ<br>• up to 12 counters: max. freq. 5 kHz<br>• up to 12 digital flowmeter / ratemeter: max. freq. 50 kHz<br>• up to 12 analogue flowmeter: 0/4 ÷ 20 mA<br>• mixed inputs: analogue-NTC temperature or analogue-digital: up to 12 x 0 ÷ 20 mA, 4 ÷ 20 mA and up to 12 x 0 ÷ 5V, 1 ÷ 5V, 0 ÷ 10V, 2 ÷ 10V and up to 24 x NTC or digital | • up to 15 universal, isolated: 0/4 ÷ 20 mA; 0/1 ÷ 5V, 0/2 ÷ 10V; thermocouples: J, K, S, T, N, R, B, E (PN-EN), L (GOST); -10 ÷ 25 mV, -10 ÷ 100 mV, 0 ÷ 600 mV; RTD (2/3/4 wire): Pt100, Pt500, Pt1000 (PN-EN), Pt'50, Pt'100, Pt'500 (GOST), Ni100, Ni500, Ni1000 (PN-EN), Cu50, Cu100 (PN-83M-53852), Cu'50, Cu'100 (PN-83M-53852); resistance 0 ÷ 300 Ω, resistance 0 ÷ 3 kΩ<br>• up to 72 analogue: 0/4 ÷ 20 mA, 0/1 ÷ 5V, 0/2 ÷ 10V<br>• up to 36 thermocouples: J, K, S, T, N, R, B, E (PN-EN); L (GOST); ± 25 mV, ± 100 mV, -10 ÷ 25 mV, -10 ÷ 100 mV<br>• up to 18 RTD: Pt100, Pt500, Pt1000 (PN-EN); Pt'50, Pt'100, Pt'500 (GOST); Ni100, Ni500, Ni1000 (PN-EN); Cu50, Cu100 (PN-83M-53852); Cu'50, Cu'100 (PN-83M-53852); resistance 0 ÷ 300 Ω, resistance 0 ÷ 3 kΩ<br>• up to 24 NTC: 0 ÷ 110 kΩ<br>• up to 12 counters: max. freq. 5 kHz<br>• up to 12 digital flowmeter / ratemeter: max. freq. 50 kHz<br>• up to 12 analogue flowmeter: 0/4 ÷ 20 mA<br>• mixed inputs: analogue-NTC temperature or analogue-digital: up to 24 x 0 ÷ 20 mA, 4 ÷ 20 mA and up to 24 x 0 ÷ 5V, 1 ÷ 5V, 0 ÷ 10V, 2 ÷ 10V and up to 24 x NTC or digital | • 2 or 4 universal, isolated: 0/4 ÷ 20 mA (also totalizer mode); 0/1 ÷ 5V, 0/2 ÷ 10V; thermocouples: J, K, S, T, N, R, B, E (PN-EN), L (GOST); -10 ÷ 25 mV, -10 ÷ 100 mV, 0 ÷ 600 mV; RTD (2/3 wire): Pt100, Pt500, Pt1000 (PN-EN), Pt'50, Pt'100, Pt'500 (GOST), Ni100, Ni500, Ni1000 (PN-EN), Cu50, Cu100 (PN-83M-53852), Cu'50, Cu'100 (PN-83M-53852); resistance 0 ÷ 300 Ω, resistance 0 ÷ 3 kΩ<br>• 2 universal pulse counter / ratemeter (max. freq. 5 kHz) |
| **Digital inputs** | • up to 49 * | • up to 73 * | • up to 5 * |
| **Outputs** | • up to 8 analogue 4 ÷ 20 mA, passive, isolated, resolution 12 bit<br>• up to 16 SPST relay 1A/250V<br>• up to 4 SPDT relay 5A/250V<br>• up to 48 SSR | • up to 24 analogue 4 ÷ 20 mA, passive, isolated, resolution 12 bit<br>• up to 36 SPST relay 1A/250V<br>• up to 18 SPDT relay 5A/250V<br>• up to 72 SSR | • 2 or 4 analogue 4 ÷ 20 mA, passive, isolated, resolution 14 bit<br>• 2 or 4 SPST relay 1A/250V<br>• 2 or 4 SSR passive (OC with PWM)<br>• mixed outputs: 2 x REL / 2 x 4 ÷ 20 mA, 2 x REL / 2 x SSR passive, 2 x 4 ÷ 20 mA / 2 x SSR |
| **Sensor supply output** | • 1 x 24V DC ±5%, 200 mA max. | • 1 x 24V DC ±5%, 200 mA max. | • 1 x 24V DC ±5%, 200 mA max. |
| **Communication interface** | **Basic version**: RS-485, 1 x USB Host,<br>**ETU**: 1 or 2 x USB Host, 1 x Ethernet<br>**ACM**: 2 x RS-485, 1 x RS-485/232, 1 or 2 x USB Host, 1 x Ethernet | **Basic version**: RS-485, 1 x USB Host,<br>**ETU**: 1 or 2 x USB Host, 1 x Ethernet<br>**ACM**: 2 x RS-485, 1 x RS-485/232, 1 or 2 x USB Host, 1 x Ethernet | **Basic version**: RS-485, 1 x USB Host<br>**ETE**: 1 x Ethernet wired via gland to RJ45 built-in connector<br>**ETEC**: 1 x Ethernet wired to M12 connector<br>**ETR**: 1 x Ethernet wired via gland to RJ45 built-in connector + 2nd RS-485 port<br>**ETRC**: 1 x Ethernet wired to M12 connector + 2nd RS-485 port |
| **Protocols** | Modbus RTU Master or Slave, Modbus TCP Server, HTTP, Web Server, NTP | Modbus RTU Master or Slave, Modbus TCP Server, HTTP, Web Server, NTP | Modbus RTU Master or Slave, Modbus TCP Server, HTTP, Web Server, NTP |
| **IP rate protection** | IP 65 (device front side), options: IP 65 version including gasket for panel cut-out sealing or IP 54 transparent door with key.<br>IP 40 (front USB version). | IP 65 (device front side), optional IP 65 version including gasket for panel cut-out sealing or IP 54 transparent door with key.<br>IP 40 (front USB version). | IP 65 |
| **Operating temp.**<br>**Storage temp.** | 0°C ÷ +50°C (optional -20°C ÷ +50°C)<br>-10°C ÷ +70°C (optional -20°C ÷ +70°C) | 0°C ÷ +50°C (optional -20°C ÷ +50°C)<br>-10°C ÷ +70°C (optional -20°C ÷ +70°C) | 0°C ÷ +50°C (optional -20°C ÷ +50°C)<br>-10°C ÷ +70°C (optional -20°C ÷ +70°C) |
| **Data memory**<br>**Data recording speed** | internal 2 GB (option 4 GB)<br>from 0.1 s to 24 h with resolution 0.1 s | internal 2 GB (option 4 GB)<br>from 0.1 s to 24 h with resolution 0.1 s | internal 2 GB (option 4 GB)<br>from 0.1 s to 24 h with resolution 0.1 s |
| **Dimensions** | case (WxHxD): 96 x 96 x 100 mm<br>panel cut-out: 90.5 x 90.5 mm<br>installation depth: min. 102 mm<br>panel thickness: standard 7 mm or other depending on used board thickness brackets | case (WxHxD): 144 x 144 x 100 mm<br>panel cut-out: 137 x 137 mm<br>nstallation depth: min. 102 mm<br>panel thickness: standard 7 mm or other depending on used board thickness brackets | case (WxHxD):<br>166 x 161 x 103 mm (without glands)<br>166 x 191 x 103 mm (with glands)<br>wall mounted |

** one digital input is available in standard, integrated on PS32 or PS42 power supply.*

# CMC-N16 Ordering

**MultiCon CMC-N16-P/D/C/B/A-XXX**

- **options:**
  - **B1**: no options
  - **BC**: PCB conformal coating
  - **K1**: operating temperature -20°C ÷ +50°C including PCB conformal coating
- **memory:**
  - **0**: 2 GB
  - **1**: 4 GB
- **block A - analogue input**
- **block B - digital input**
- **block C - output**
- **block P - power supply**
- **block D - communication**

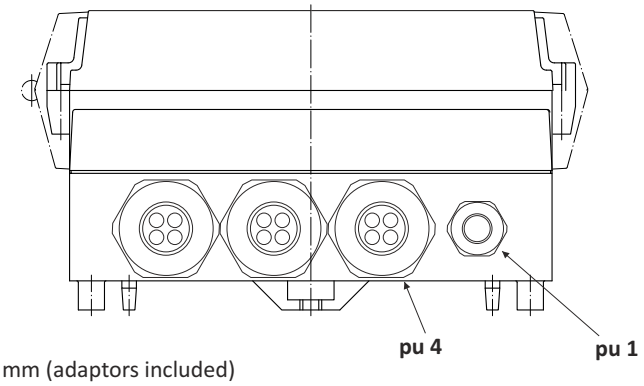
available blocks are listed below

**Optional:** **LKS-99/141** Data logging licence key
**ENS-99/141** „E-mail notifications" licence key

| Block type | Port usage (pu)* | Block description |
|---|---|---|
| **Block P - power supply** | | |
| **PS3** | **0** | 19 ÷ 50V DC, 16 ÷ 35V AC power supply |
| **PS4** | **0** | 85 ÷ 260V AC/DC power supply |
| **Block D - communication** | | |
| **E** | **0** | Empty |
| **ETE** | **1** | Ethernet wired via gland to RJ45 built-in connector |
| **ETEC** | **1** | Ethernet wired to M12 connector |
| **ETR** | **2** | Ethernet wired via gland to RJ45 built-in connector + second RS-485 port |
| **ETRC** | **2** | Ethernet wired to M12 connector + second RS-485 port |
| **Block C - output** | | |
| **E** | **0** | Empty |
| **R21** | **2** | 2 x SPST relay 1A/250V output |
| **R41** | **4** | 4 x SPST relay 1A/250V output |
| **COP2** | **2** | 2 x 4 ÷ 20 mA output, passive, isolated |
| **COP4** | **4** | 4 x 4 ÷ 20 mA output, passive, isolated |
| **OC2** | **2** | 2 x SSR output, passive (OC with PWM) |
| **OC4** | **4** | 4 x SSR output, passive (OC with PWM) |
| **R21COP2** | **4** | 2 x SPST relay 1A/250V output + 2 x 4 ÷ 20 mA output, passive, isolated |
| **R21OC2** | **4** | 2 x SPST relay 1A/250V output + 2 x SSR output, passive (OC with PWM) |
| **COP2OC2** | **4** | 2 x 4 ÷ 20 mA output, passive, isolated + 2 x SSR output, passive (OC with PWM) |
| **Block B - digital input** | | |
| **E** | **0** | Empty |
| **DU2** | **2** | 2 x universal pulse counter/ratemeter input or 4 x digital input |
| **D4** | **4** | 4 x digital input |
| **Block A - analogue input** | | |
| **E** | **0** | Empty |
| **FUN2** | **2** | 2 x universal input (also totalizer on 0/4 ÷ 20 mA input), isolated |
| **FUN4** | **4** | 4 x universal input (also totalizer on 0/4 ÷ 20 mA input), isolated |

** Note: maximum port usage is 10, one option per each block only, total „pu" acceptable is D+C+B+A < or = 10.*

**Glands lay-out:**
**pu 0-1**: 1 x M25 + 1 x M16
**pu 2-5**: 2 x M25 + 1 x M16
**pu 6-10**: 3 x M25 + 1 x M16

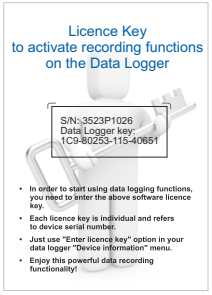



**Cable diameter for glands:**
**M25**: 1 x 13-18 mm or 3 x 7 mm or 4 x 6 mm (adaptors included)
**M16**: 1 x 4-8 mm or M12 Ethernet connector (refers to ETEC and ETRC communication block)

**Ordering examples:**
CMC-N16-PS4/ETE/R21/DU2/FUN4-0B1
CMC-N16-PS3/ETR/E/E/E-0B1

# Accessories



| | | |
|---|---|---|
| **STD-99, STD-141** | A transparent door with IP 54 rate and a key. The door and its frame are manufactured using the injection moulding technology which ensures that they fit perfectly. The material has been selected to eliminate corrosion and ensure maximum durability. |  |
| **SRH-99, SRH-141** | Assembly brackets for installation of the MultiCon e.g. in control cabinets with typical 35 mm bus bars. |  |
| **DAQ Manager** | Software for managing the recorded data. Its fully functional and free of charge version can be downloaded from our website or ordered as a payable CD-ROM version. |  www.MultiCon24.eu |
| **Board thickness brackets** | **SPH-07:** 1 ÷ 7 mm board thickness brackets (2 pcs) **standard included with device**<br><br>**SPH-05:** 1 ÷ 5 mm board thickness brackets (2 pcs)<br><br>**SPH-45:** 1 ÷ 45 mm board thickness brackets (2 pcs) |  |
| **Pendrive** | An unusually small and light USB flashdrive has been designed with easy storage and transport in mind. **MF** fits perfectly the MultiCon controller's casing with closed IP 54 rate door.<br><br>**MF-8** : mini pendrive / memory stick, **8 GB** + strap |  |
| **Licence keys** | **LKS-99/141**: Data logging licence key<br>**ENS-99/141**: E-mail notifications licence key<br><br>Also available 30 day, free trial versions of licence keys. |   |
| **SCL-N16** | CMC-N16 case lock |  |