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DATA SHEET

CU-LH

Produal

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Produal Proxima® CU-LH multifunctional control unit



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Produal Proxima® CU-LH is a control unit for advanced room and zone control applications that demand more functionality than traditional controllers can provide. With this control unit you can control, for example, heating, cooling and ventilation using a wide range of actuators.

The control unit has two separate controllers and a cascade controller. The unit has three operation modes for energy saving control functions. You can configure the outputs, setpoints and the controller dead zone separately for each operation mode.

The control unit inputs (3 pcs) are multifunctional, and they support passive NTC10 sensors, 0...10 Vdc transmitter signals and contact functions. You can select the input functions separately for each input, for example, to read temperature or CO_2 measurement, change operation mode using contact functions, override outputs, activate alarm functions, or detect occupancy

The control unit outputs (4 pcs) are multifunctional. They support 0...10 Vdc and 24 Vac actuators with different output functions, such as heating, cooling, 6-way valve control, 3-point actuator, fan speed or VAV.

You can connect up to two room units to one control unit for controlling up to two rooms with the same unit. The control unit supports the following devices as room units:

- Produal Proxima® RU
- RT and RTX
- TRI
- ROU-S

If you need strain relief for the cables, use the CA-SR strain relief set.

The control unit supports the following communication protocols: Modbus RTU (-MODand -BAC models) and BACnet MS/TP (-BAC models).

You can configure the control unit settings with the MyProdual smartphone application together with the MyTool Connect dongle, which speeds up the commissioning. You can save the control unit configuration to Produal MyCloud cloud service by using the application. You can also update the control unit firmware using the MyProdual application.

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Technical specifications

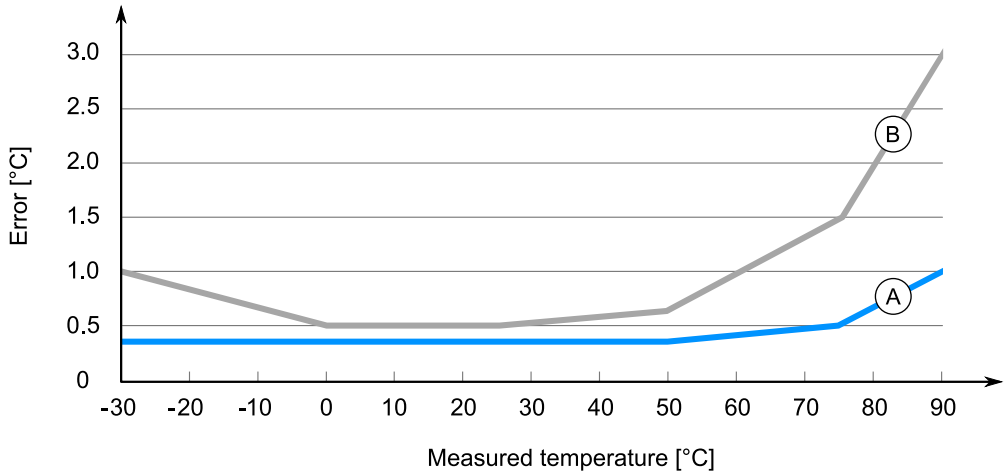
Property	Value
Supply	24 Vac/dc (22...26 V), < 2 VA **Note:** Only the DC functions work when using DC supply voltage. To get full functionality, use AC supply.
Multifunctional inputs	The device has 3 input connectors.
Voltage input	3 x 0...10 Vdc, freely scalable within this range. See the voltage input accuracy from the chapter Voltage input accuracy on page 4.
Resistive temperature input	3 x NTC 10 (-30...100 °C). See the temperature input accuracy from the chapter NTC 10 input accuracy on page 4.
Resistive input	3 x 0...300 kΩ, ±3...10 %
Digital input	3 x resistive contact input
Room units	The device has a room unit connector, which supports up to two room units.
Controller	Two P/PI controllers, cascade controller
Control functions	Temperature control (heating, cooling, heating and cooling, changeover, thermostat), fan control, ventilation control and floor heating control.
Outputs	The device has 4 output connectors.
Voltage output	4 x 0...10 Vdc (-0.5...+2 mA), freely scalable within this range
PWM output	2 x triac output (switched to 0 V, 24 Vac / 1 A)
Supply output	2 x 24 Vac, total load < 6 A
Modbus communication (-MOD and -BAC models)	
Protocol	Modbus RTU
Bus speed	9600*/14400/19200/38400/57600/115200 bit/s
Data bits	8
Parity	none*/odd/even
Stop bits	1* or 2
Unit load	UL 1/4
BACnet communication (-BAC models)	
Protocol	BACnet MS/TP
Bus speed	9600*/19200/38400/57600/76800/115200 bit/s
Data bits	8
Parity	none*/odd/even
Stop bits	1
Unit load	UL 1/4

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Property	Value
Commissioning tool	MyProdual **Note:** You need the MyTool Connect dongle for connecting the MyProdual application to the dev
Operating conditions	
Ambient temperature	0...50 °C **Important:** The maximum ambient temperature is 40 °C when there is maximum load (1 A) in two 24 Vac (PWM) outputs.
Ambient humidity	0...85 %rH (non-condensing)
Wiring terminals	2.5 mm^2, plug-in screw terminals
Housing	
Protection class	PC plastic
Materials	IP44
Colours	
White models	RAL9016
Black models	RAL9011
Mounting	on the wall surface or on 35 mm DIN rail
Product dimensions (w x h x d)	116 x 128 x 47 mm
Package dimensions (w x h x d)	130 x 130 x 50 mm
Total weight (including the package)	270 g
Warranty	5 years
CE UKCA	Refer to the EU Declaration of Conformity or the UK Declaration of Conformity for compliance information. You can find the declarations on this product's page at www.produal.com.
Company certificates	
Quality management	ISO 9001
Environmental management	ISO 14001

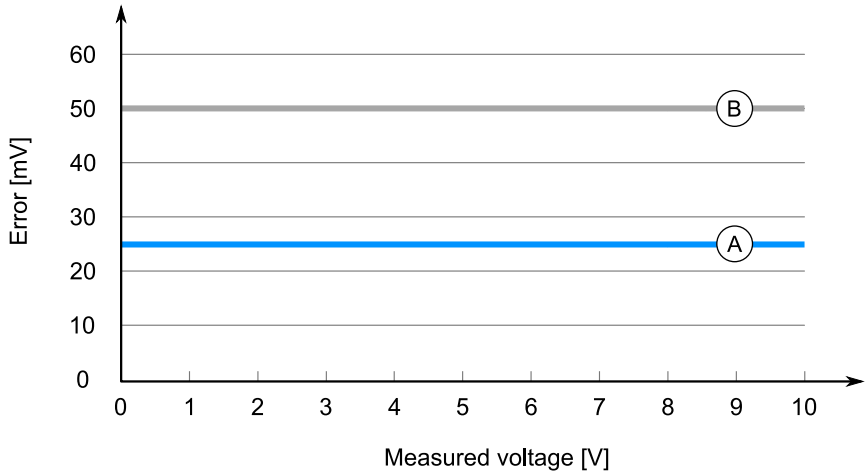
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NTC 10 input accuracy



A. Error in typical ambient temperature (15...35 °C).
B. Maximum error in the full ambient temperature range.

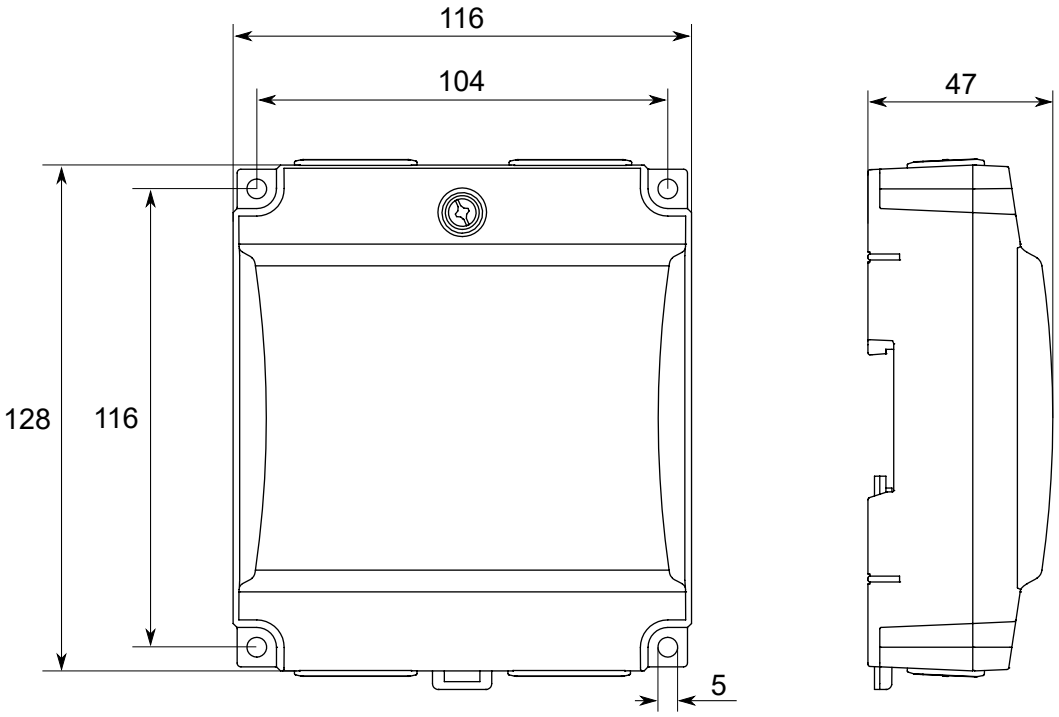
Voltage input accuracy



A. Error in typical ambient temperature (15...35 °C).
B. Maximum error in the full ambient temperature range.

Dimensions

All dimensions are in millimeters (mm).



Wiring

WARNING: Device wiring and commissioning can only be carried out by qualified professionals. Always make the device wirings in de-energised electricity network.

WARNING: External power sources and power wiring must be protected with a fuse or circuit breaker. Rating depends on the overall system load, but the maximum rating for the external circuit breaker is 16 A (limited by internal structure of the product).

WARNING: This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (separated extra low voltage) electricity network.

CAUTION: The product may only be connected to overvoltage category I, II or III electricity network according to IEC 60664-1.

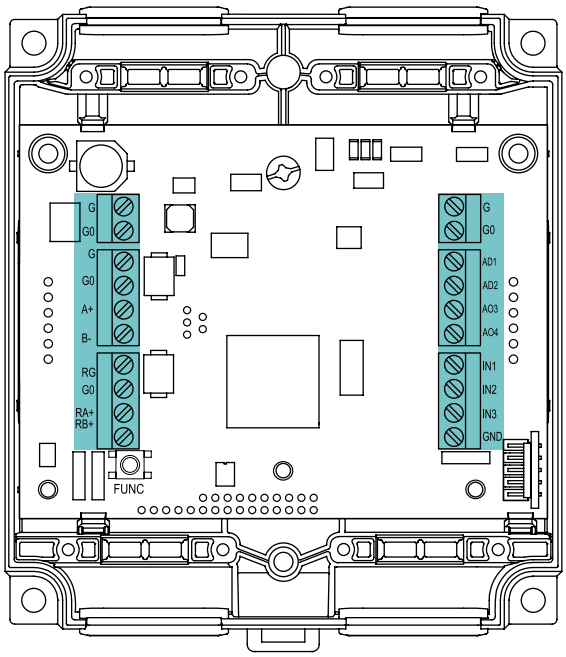
CAUTION: Ensure that all covers are closed before you connect the supply voltage to the product. Do not remove the covers when the supply voltage is connected.

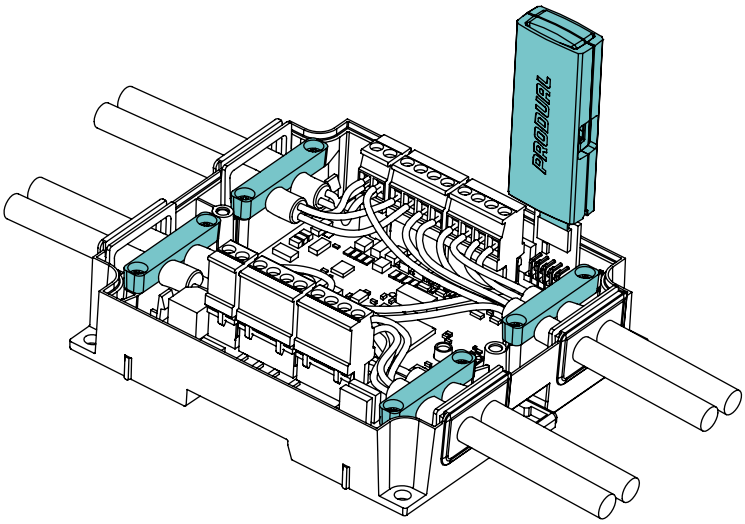
Important: This product has no capability to detect an abnormal condition of input or output ports. External supervising (automated/human) may be needed depending on the application where this product is used.

The device terminals are grouped according to the functions to avoid any wiring mistakes. You can get supply voltage for other devices by connecting them to the extra supply voltage connectors.

Use maximum of 2.5 mm^2 wires for wiring. Use twisted pair cables (2x2 pairs) for communication (RS-485). Use 10 m or shorter cables length to room unit connections.

Note: The supply voltage potential must be the same in this device and in the connected 24 Vac actuators.





Connectors on the left side:

G	24 Vac/dc supply, < 2 VA **Note:** Only the DC functions work when using DC supply voltage. To get full functionality, use AC supply.
G0	0 V

G	24 Vac supply output, <6 A (total load for all supply outputs)
G0	0 V
A+	RS-485 bus connection for Modbus RTU or BACnet MS/TP.
B-	

RG	24 Vac supply output for room unit, <0.25 A.
G0	0 V
RA+	RS-485 bus connection for room unit.
RB-	

Connectors on the right side:

G	24 Vac supply output, <6 A (total load for all supply outputs)
G0	0 V

AD1	Output 1. 24 Vac (switched to 0 V, 1 A) / 0...10 Vdc (-0.5...+2 mA) output.
AD2	Output 2. 24 Vac (switched to 0 V, 1 A) / 0...10 Vdc (-0.5...+2 mA) output.
AO3	Output 3. 0...10 Vdc (-0.5...+2 mA) output.
AO4	Output 4. 0...10 Vdc (-0.5...+2 mA) output.

IN1	Input 1. NTC10 / 0...10 Vdc / Resistive / Contact
IN2	Input 2. NTC10 / 0...10 Vdc / Resistive / Contact
IN3	Input 3. NTC10 / 0...10 Vdc / Resistive / Contact

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GND	0 V

Ordering information

	Type	Product number	Description
	CU-LH-MOD	52011W10000	Control unit, white, Modbus RTU
	CU-LHB-MOD	52011B10000	Control unit, black, Modbus RTU
	CU-LH-BAC	52011W2000	Control unit, white, Modbus RTU/BACnet MS/TP
	CU-LHB-BAC	52011B2000	Control unit, black, Modbus RTU/BACnet MS/TP
	CA-SR	5201A00S00	Cable strain relief set
	MYT-CON	510002000	MyTool Connect, a Bluetooth dongle for MyProdual connection.

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