Produal Proxima® CU - multifunctional control unit

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Produal Proxima® CU control unit is designed especially for more advanced room and zone control applications that demand more functionality than traditional controllers. The control unit supports the following communication protocols: Modbus RTU, Modbus TCP, BACnet MSTP and BACnet IP. The control unit is built on the Produal PUMP®.

The control unit is equipped with two separate control loops and a cascade controller loop. The unit has three operation modes for energy saving control functions. The outputs, set points and the controller dead zone can be configured differently for each operation mode.

The control unit outputs are multifunctional, and they support 0...10 Vdc, 0...20 mA and 24 Vac actuators with different output functions, such as heating, cooling, 6-way valve control, 3-point actuator, fan speed or VAV.

The control unit inputs are multifunctional, and they support passive NTC10 or PT1000 sensors, 0...10 Vdc transmitter signals and contact functions. The input functions can be selected separately for each input e.g. for temperature and CO_2 measurement or contact functions for operation mode changes, output override or alarm functions etc.

The control unit settings can be configured with Produal MyTool® Android application which speeds up the commissioning. The controller configuration can be saved to Produal MyCloud cloud service by using the application.

Up to two Produal Proxima® RU room units can be connected to one control unit for controlling up to two rooms from the same unit.

Technical specifications

Property	Value
Supply	24 Vac/dc (22...26 V), < 7 VA NOTE **Note:** Only the DC functions work when using DC supply voltage. To get full functionality, use AC supply.
Inputs	6 x universal input (NTC 10 / Pt1000 / Resistive / Digital / 0...10 Vdc)
Outputs	6 x universal output
0...10 Vdc / 2...10 Vdc	-0,5...+2 mA

Property	Value
4...20 mA / 0...20 mA	< 700 Ω
24 Vac	PWM, < 1 A
Supply output	2 x 24 Vac, total load < 8 A
Communication	Modbus RTU / BACnet MSTP / Modbus TCP / BACnet IP
	PUMP expansion socket
Default Ethernet network settings	
IP address	192.168.1.1
Subnet mask	255.255.255.0
Commissioning tool	Produal MyTool® GET IT ON Google Play
Operating conditions	
Temperature	-5...50 °C
Humidity	0...90 %rH (non-condensing)
Wiring terminals	1,5 mm^2, spring terminals
Mounting	on the wall surface or on 35 mm DIN rail
Housing	ABS, IP22
Dimensions (w x h x d)	186 x 136 x 55 mm

Wiring

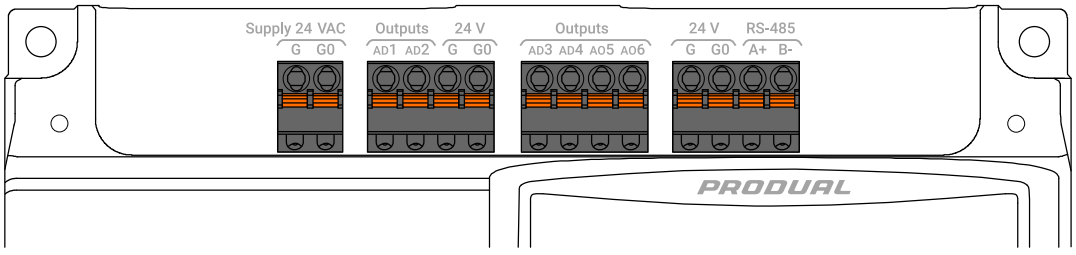
CAUTION **CAUTION:** Device wiring and commissioning can only be carried out by qualified professionals. Always make the wirings while the power is switched off.

The device terminals are grouped according to the functions to avoid any wiring mistakes. There are extra G and G0 terminals for connecting the separate supply voltage for other devices.

The terminals are designed for maximum of 1,5 mm^2 cable area. Please note that the cables for communication (RS-485) should be twisted pair (2x2 pairs). The cable length to the room units should not exceed 10 m.

NOTE **Note:** The supply voltage potential must be the same in the controller and in the connected 24 Vac actuators.

Top connectors



Supply 24 VAC

G	24 Vac/dc supply, < 7 VA NOTE **Note:** Only the DC functions work when using DC supply voltage. To get full functionality, use AC supply.
G0	0 V

Outputs

AD1	Output 1. 24 Vac (<1 A) / 0...10 Vdc (-0,5...+2 mA) output.

AD2	Output 2. 24 Vac (<1 A) / 0...10 Vdc (-0,5...+2 mA) output.

24 V

G	24 Vac supply output, <8 A (total load for all supply outputs)
G0	0 V

Outputs

AD3	Output 3. 24 Vac (<1 A) / 0...10 Vdc (-0,5...+2 mA) output.
AD4	Output 5. 24 Vac (<1 A) / 0...10 Vdc (-0,5...+2 mA) output.
AO5	Output 5. 0...20 mA (< 700 Ω) / 0...10 Vdc (-0,5...+2 mA) output.
AO6	Output 6. 0...20 mA (< 700 Ω) / 0...10 Vdc (-0,5...+2 mA) output.

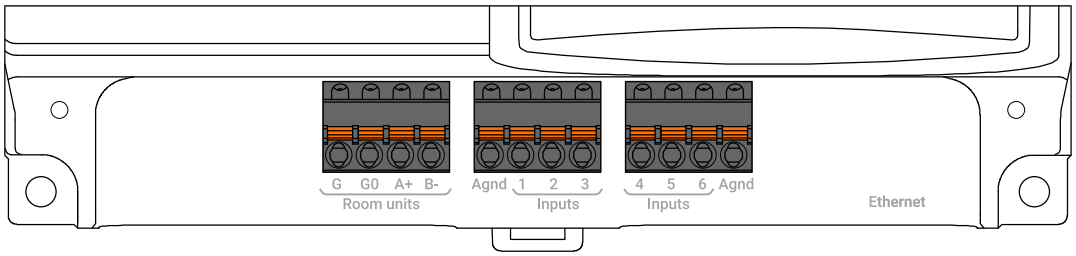
24 V

G	24 Vac supply output, <8 A (total load for all supply outputs)
G0	0 V

RS-485

A+	RS-485 bus connection for Modbus RTU and BACnet MSTP.
B-	

Bottom connectors



Room units

G	24 V supply for room unit.
G0	0 V
A+	RS-485 bus for room unit.
B-	

Inputs

Agnd	0 V
1	Input 1. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
2	Input 2. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
3	Input 3. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
4	Input 4. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
5	Input 5. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
6	Input 6. NTC10 / PT1000 / 0...10 Vdc / Resistive / Contact
Agnd	0 V

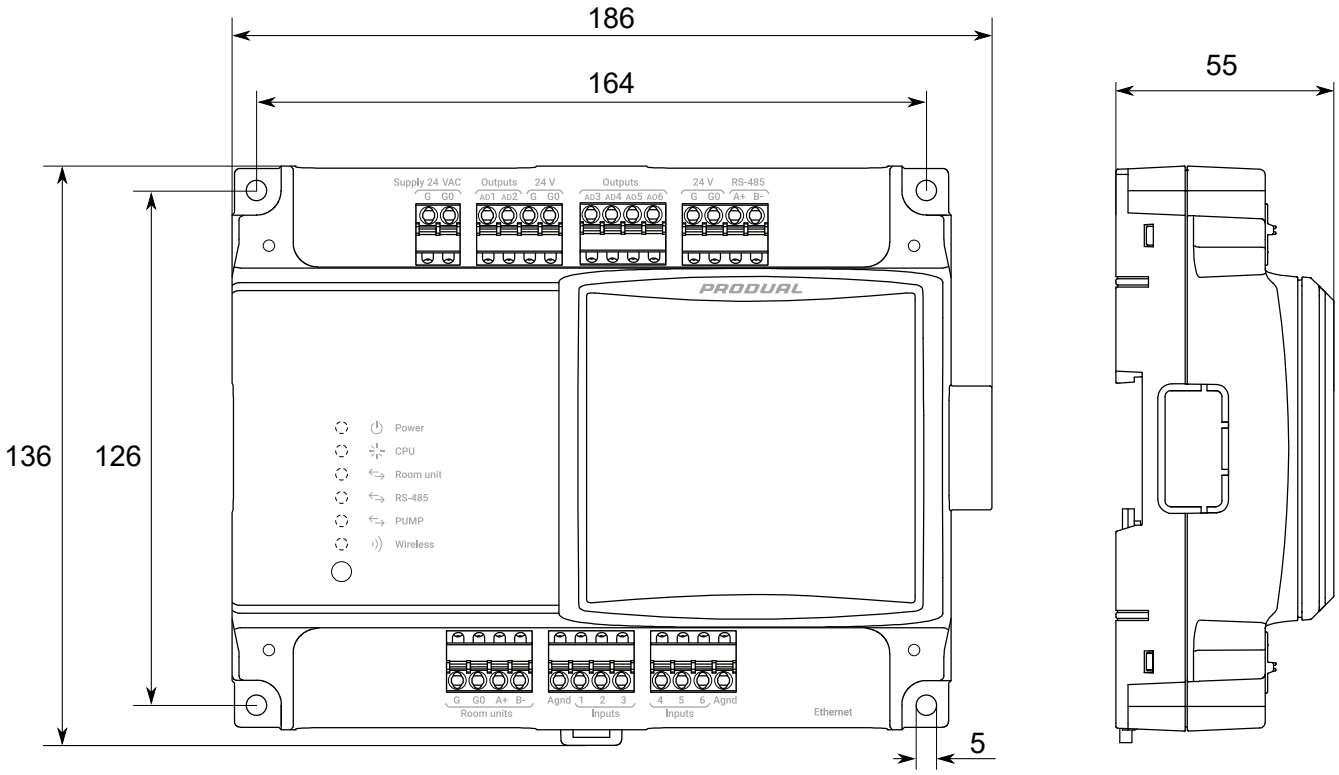
Ethernet

Ethernet	RJ-45 connector for Modbus TCP and BACnet IP.

Ordering information

	Type	Product number	Description
	CU	520101000	Control unit, white
	CUB	520101003	Control unit, black
	CUCC	5201010400	Cable covers (includes two covers and four fixing screws)

Dimensions



Supported standards and directives

Standard	Description
2014/30/EU	Electromagnetic Compatibility (EMC).
2014/53/EU	Radio Equipment Directive (RED)
2011/65/EU	Restriction of Hazardous Substances (RoHS2) Directive.
EN 300 328 V2.1.1	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of directive 2014/53/EU
EN 301 489-1 V2.1.1	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements.
EN 301 489-17 V2.1.1	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission systems

Standard	Description
EN 61000-6-2:2006	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments.
EN 61000-6-3:2007/ A1:2011	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.
EN 61000-4-2:2009	Electromagnetic compatibility (EMC). Testing and measuring techniques - Electrostatic discharge immunity test.
EN 61000-4-3:2006/ AMD2:2010	Electromagnetic compatibility (EMC). Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test.
EN 61000-4-4:2012	Electromagnetic compatibility (EMC). Testing and measurement techniques - Electrical fast transient/burst immunity test.
EN 61000-4-5:2014	Electromagnetic compatibility (EMC). Testing and measurement techniques - Surge immunity test.
EN 61000-4-6:2014	Electromagnetic compatibility (EMC). Testing and measurement techniques. Immunity to conducted disturbances, induced by radio-frequency fields.
EN 61000-4-8:2010	Electromagnetic compatibility (EMC). Testing and measurement techniques. Power frequency magnetic field immunity test.
EN 61000-4-11:2004	Electromagnetic compatibility (EMC). Testing and measurement techniques. Voltage dips, short interruptions and voltage variations immunity tests.