

ClimaCheck analog module R560 with modbus

The ClimaCheck analog input module R560 is a state-of-the-art input module for data collection with modbus/RS485 communication. It is available either in a housing with contacts for portable applications with ClimaCheck Performance analysers or as DIN mounted. The flexibility makes it excellent to use when additional data points are required i.e. if several units should be measured simultaneously. The possibility to locate the module and one power meter remotely and connect with the standard serial cable to the ClimaCheck Performance Analyser reduce the wiring to a minimum.



Analog inputs and Pt1000

There are 8 analog inputs on the unit, configurable for temperature sensors (Pt1000), pressure transducers or other sensors with voltage (0-10V), current (4-20mA). To use 0 to 20 mA current measurement the corresponding DIP switch should be activated. The eight inputs can be configured independently.

The R560 is a microprocessor controlled with a RS485 bus for communication.

The input signals are processed and multiplexed into a 16 bit A/D converter.

Removable connectors are used for all signals as well as for data line so that mounting is fast and easy. The module has a DIN rail clip.

Two LEDs enable fast diagnostics – power and communication. All module settings are backed up in an EEPROM chip. The module is equipped with a watchdog circuit.

The communication circuits are protected against overvoltage and galvanically isolated from other parts of the module.

If the module is terminating the communication bus, i.e. it is the first or last in line, a

terminating 120 resistor may be switched on by activating the BUS END switches.

Power supply and contacts

In **ClimaCheck onsite** portable systems, the R560 unit is supplied with 24V DC via the serial communication cable connected to the panel with a 9-pin D-sub contact. There is also a second 9-pin D-sub to continue the bus to next unit if so desired.

In **ClimaCheck online** fixed installations, the R560 unit is supplied with 24 VDC from the common power supply but it can handle 10-35 V DC.

Contacts for Pt1000

ClimaCheck analog module R560 for portable systems have Teleplug contacts (3.5 mm female) mounted for all 8 inputs.

Contacts for Analog inputs

ClimaCheck analog module R560 for portable systems have DIN 5D female contacts mounted for the 4 first inputs.

Technical data

Power: 10 - 35 V DC, 14 - 24 V AC
Consumption: 2,5 W

Communication Modbus RTU RS485, 1200 ... 115200 bit/s

Galvanic isolation: 1 kV

Max. bus length: 1200 m

Max. amount of modules on the bus. 256

Number of analogue inputs: 8

Input ranges Pt1000*: (-50...150 °C), 20...1600 Ohm, 20...5000 Ohm, 0...10 V, 0...20 mA *Resistance ranges may be used for temperature measurement with Pt100, Pt1000, Ni1000/5000 and Ni100/6180 passive sensors. Linearisation must be done in controllers. In the R560 module there is recalculation to °C for the Pt1000 sensor only.

Sampling: 10 samples/s

Effective resolution: 16 bit

Measurement error: Absolute error max. 1 Ohm, which is appr. 0.25 K for a Pt1000 sensor in the most common measuring range (-20...100 °C)

The measurement deviation: for all measured variables is 0.25% of the whole range.

Input impedance: >10M

Housing Polycarbonate box (certification UL94V0) elbox 4

Terminals screw terminals M3 (bus, power), M2 (AI inputs)

Dimensions: 71(l) x 90(w) x 58(h) mm

Protection degree: IP20 (EN 60529)

Recommended wire: 0,14-1,5 mm²

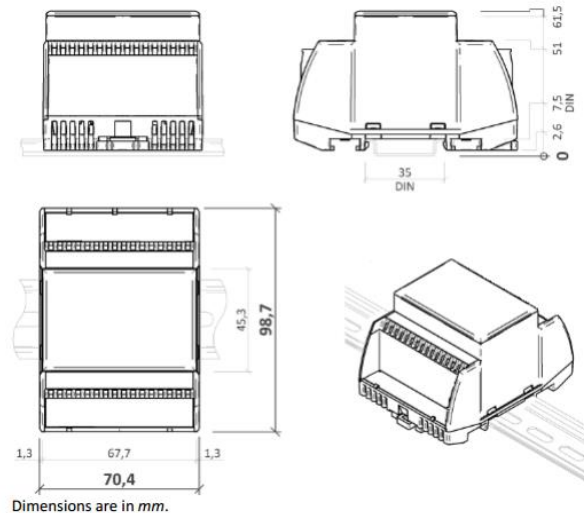
Ambient temperature External conditions: -5 - 60 °C; 5 - 95 % relative humidity; non-condensing gases and chemically non-aggressive conditions (according to EN 60721-3-3 climatic class 3K5)

Storage: -5 - 60 °C; 5 - 95 % relative humidity; noncondensing gases and chemically non-aggressive conditions (according to EN 60721-3-1 climatic class 1K3) Standards conformity EMC EN 61000-6-2 ed.3:2005, EN 61000 -6-4 ed.2:2006 + A1:2010 (industrial environment) Electrical safety EN 60950-1 ed.2:2006 + A11:2009 + A12:2011 + A1:2010 + A2:2014 + Opr.1:2012 + Z1:2016

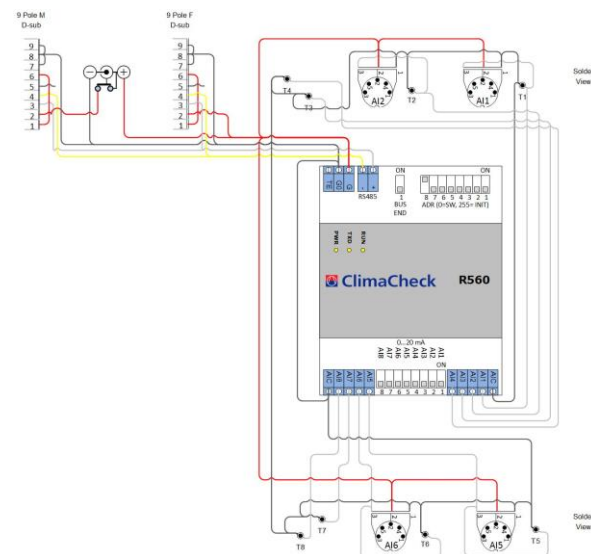
Hazardous substances reduction EN 50581:2012

EU legislation Council Directive 2014/35/EC,

The Low Voltage Directive (LVD) Council Directive 2014/30/EC, Electromagnetic Compatibility (EMC) Directive Council Directive 2011/65/EC, RoHS2 Directive



Wiring diagram of portable R560



For details on connection and configuration please refer to operating manual.