

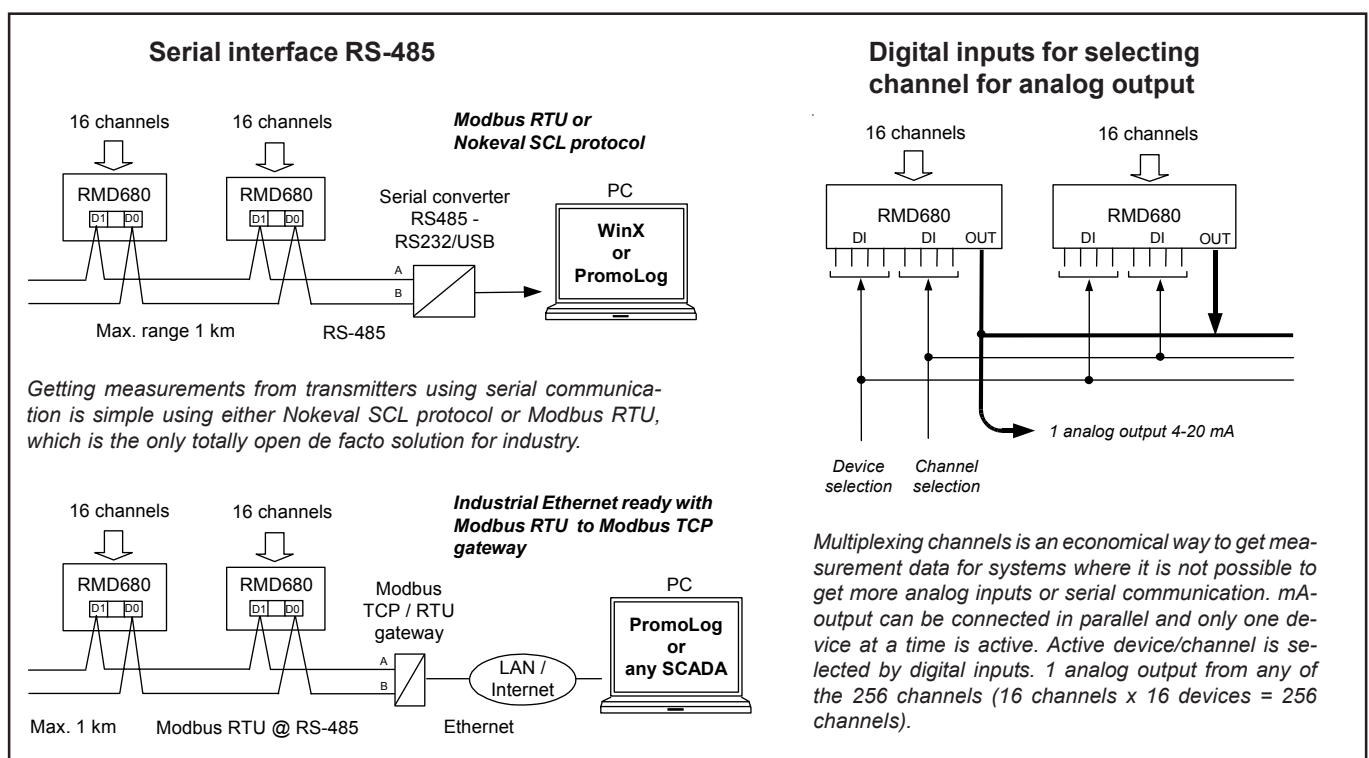
## RMD680 16-channel universal input transmitter and multiplexer with serial output RS-485

- Process inputs: 0/4..20mA, -20..+20mA, 0..10V, -10..+10V
- mV input range: -100..+100mV
- Thermocouples: B,C,D,E,G,J,K,L,N,R,S,T
- RTD sensors: Pt100, Pt1000, Ni, Cu, KTY83
- Resistance input range: 0..40000 ohm
- 1 analog output 0/4..20 mA or 0..10V, channel selection with digital inputs or min/max value
- 2 Alarm relays, with general alarms
- Digital display on front panel
- Programming with front panel keys or with serial interface RS-485
- Modbus RTU and Nokeval SCL serial protocols
- Power supply 24 VDC, galvanically isolated from inputs



Multichannel transmitter RMD680 has been designed for applications where lots of inputs have to be measured and transferred economically either to PC or PLC. Transmitter has 16 input channels, which can be programmed individually for different sensors. Measurement rate is 12 channels per second. Measurements can be read either by serial interface RS-485 using Modbus RTU or Nokeval SCL protocol or with one analog output. Up to 32 devices can be connected to the same serial bus without repeaters. It takes 50ms to read all channels from one device, thus 512 channels can be read in less than 2 seconds. When analog output is used, output channel is selected with a 4-bit digital input. Transmitter has also 4-bit digital input

for enabling its analog output thus total channel count can be increased to a maximum of 256 channels by connecting mA outputs of several devices in parallel. This way all channels from one device can be read in less than one second. Every channel can be configured totally individually. Channel inputs are differential thus channels don't affect on each other. Transmitter has two alarm relays, which can work as general alarms: if any channel passes alarm limit, relay activates. Device can be configured either with front panel keys or with serial interface using Mekuwin configuration software. Transmitter is compatible with WinX and PromoLog data-acquisition software and any third party software with Modbus communication.



Multiplexing channels is an economical way to get measurement data for systems where it is not possible to get more analog inputs or serial communication. mA-output can be connected in parallel and only one device at a time is active. Active device/channel is selected by digital inputs. 1 analog output from any of the 256 channels (16 channels x 16 devices = 256 channels).

# Technical specification:

## RTD sensors:

Sensors	Pt100, Pt1000 or Ptxxx (xxx = selectable)
Range	-200..+700°C
Accuracy (pt100)	0.05% of FS + 0.15°C
Temperature coefficient	0.02°C / °C
Sensor connection	3-wire
Measurement current	0,25 mA, multiplexed
Sensor error correction	Adjustable for each channel

Sensors	Ni100 or Nixxx (xxx = selectable)
Range	-60..+180°C
Accuracy	0.05% of FS + 0.1°C
Sensors	Cu10 or Cuxxx (xxx = selectable)
Range	-200..+260°C
Sensor	KTY83
Range	-55..+175°C

## Thermocouples:

Sensor	Range	Linearization error
B	400..1800°C	±0.3°C
C (W5)	0..2300°C	±0.5°C
D (W3)	400..1800°C	±1.0°C
E	-100..900°C	±0.2°C
G (W)	1000..2300°C	±2.0°C
J	-160..950°C	±1.0°C
K	-150..1370°C	±0.5°C
L	-150..900°C	±0.5°C
N	0..1300°C	±0.1°C
R	0..1700°C	±0.5°C
S	0..1700°C	±0.5°C
T	-200..400°C	±1.0°C
Accuracy	0.05% of FS + 1°C + linearization error	
Line resistance effect	< 1 kΩ, no effect	

## Process inputs (freely scalable):

mA-inputs	0/4..20mA, ±20mA
Accuracy	0.008mA
Input resistance	70Ω

V-inputs	±1V, 2.5V(-1..+2.5V), ±10V
Accuracy	0.05% of FS + 0.01V
Input resistance	>1 MΩ

## Other inputs (freely scalable):

mV-inputs	±55, ±100mV
Accuracy	0,1% of FS + 0.01mV
Input resistance	>1 MΩ

Resistance inputs	0..400 Ω / 4 kΩ / 40 kΩ
Accuracy	TBD

## Serial interface:

Connection	RS-485 (2-wire)
Protocols	Modbus RTU, Nokeval SCL and Meku
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600
Bits	SCL:8N1 Modbus: 8E1, 8O1, 8N2
Reaction time	SCL: < 40ms Modbus: < 20ms
Maximum range	1000 m

## Alarms:

2 alarm relays, max 250VAC, 1A resistive  
General alarms selectable

## Digital inputs:

Output- and/or display channel selection  
4 bits for device address, 4 bits for channel

## Analog output:

Accuracy 0.05%, resolution 12 bits  
mA output load 600Ω  
Reaction time <40 ms after channel change

## Programming:

With serial interface RS-485 (PC) Meku protocol or directly with front panel keys

## General information:

Channel count 16 input channels, differential input  
Digital display 5 digit red LED-display, height 7,5 mm and 2 digit channel display

Galvanic isolation Input / Output 1 kV / 1 min  
Measurement rate 12 channels / s  
AD resolution 16 bits (±32767)

EMC immunity EN 61326  
EMC emissions EN 61326 class B

Operating temperature -10..60 °C  
Storage temperature -30..+70 °C  
Humidity 0..95 % non condensing  
Enclosure material Plastic Lexan 940 / Noryl VO 1550  
Installation DIN-rail, 35 mm  
Terminals connectors Detachable, 1.5 mm<sup>2</sup>

Weight 300g  
Power supply 24 VDC ±15 %, <120 mA

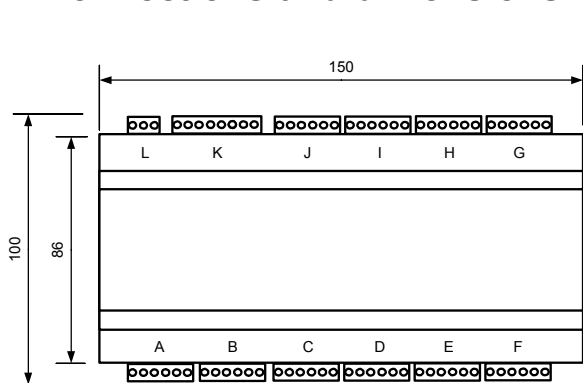
## How to order: RMD680 - 24V

Model \_\_\_\_\_  
Power supply \_\_\_\_\_

## Options:

Configuration software MekuWin (PC software)  
Programming socket USB-RS485 converter

## Connections and dimensions:



Every 6 pin connector has two channels, which are marked by letters. Connection diagram shows only first and last channel pairs.

