Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

Technical Information

RMM621

Application Manager
Control – Compute – Log

Application

- Monitoring and control of filling plants
- Temperature monitoring in chemical/pharmaceutical processes
- Process monitoring in breweries
- Power industry
- Primaries
- Chemical industry
- Food industry

Your benefits

- Wide range of communication options (modem (landline network/cellular phone network), RS232/485, Ethernet, PROFIBUS® interface optional)
- Control/calculation of processes and process values
- Calculation of mathematical equations in process engineering
- Monitoring of sensor values
- Logging function for measured values, counter readings, error messages and parameter changes with date and time
- Configuration and operation using the PC software ReadWin® 2000
- Thanks to its modular design, the unit can be adapted at any time to suit altering needs and requirements, software can be extended through options
- Operated hours counter
- Large backlit LC display
- Prompt display of error messages
- Transmitter power supply
- Intrinsically safe inputs (optional)

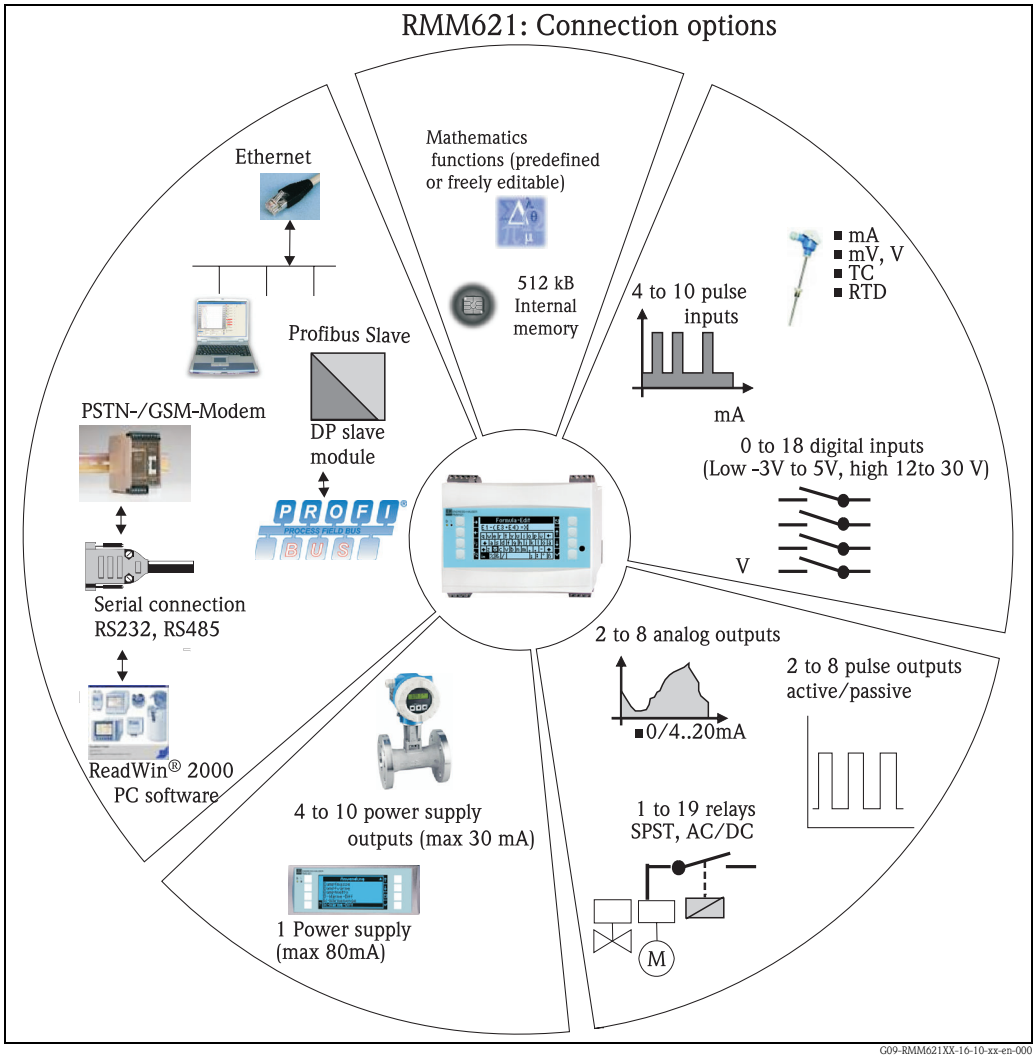
TI124R/09/en
71003463

Endress+Hauser
People for Process Automation

Function and system design

Measuring principle

Electronic recording, display, balancing, saving, event and alarm monitoring of analog and digital input signals. Values and states determined are output by means of analog and digital output signals. Remote transmission of alarms, input values and calculated values using a PSTN or GSM modem.



Possible methods of connecting RMM621

Inputs:
- Voltage, temperature, thermocouple
- Current (0/4 to 20 mA)
- PFM
- Pulse
- Digital inputs

Outputs:
- Current (0/4 to 20 mA)
- Digital (passive)
- Pulse
- Relay
- Loop power supply

Measuring system

Note!
The number of inputs, outputs, relays and transmitter power supplies contained in the basic device can be individually extended using a maximum of three plug-in cards.

The RMM621 directly supplies power to connected two-wire transmitters (prerequisite: TPS or current cards used). The inputs and the transmitter power supply (for current cards) for Ex applications are also optionally available as intrinsically safe versions.
Configuration of the inputs, outputs, limit values, the display as well as commissioning and maintenance of the device takes place via 8 softkeys with the backlit dot matrix display, using RS232/RS485 interface, PC software ReadWin® 2000 or an external operating unit. Online help makes onsite operation easier.
The configurable color change of the background lighting visualizes alarm value violations or faults. A functional expansion of the device by means of expansion cards can be made at any time.
We recommend common industrial modems that have an RS232 interface if using the telealarm functionality. The measured values and events/alarms are coded in accordance with the serial protocol and then transmitted. (Protocol can be requested)

Input

Measured variable

Voltage (analog input and digital input), current (analog input), PFM, pulse

Input signals

Any measured variable (e.g. flow, level, pressure, temperature, density) implemented as an analog signal

Measuring range

Measured variable	Input
Current	■ 0/4 to 20 mA +10% overreach ■ Max. input current 150 mA ■ Input impedance < 10 Ω ■ Accuracy 0.1% of full scale value ■ Temperature drift 0.04% / K (0.022%/ °F) ■ Signal attenuation low-pass filter 1st order, filter constants adjustable 0 to 99 s ■ Resolution 13 Bit
Current (U-I-TC expansion card)	■ 0/4 to 20 mA +10% overreach ■ Max. input current 80 mA ■ Input impedance < 10 Ω ■ Accuracy 0.1% of full scale value ■ Temperature drift 0.04% / K (0.022%/ °F)
PFM	■ Frequency range of 0.01 Hz to 18 kHz ■ Signal level – low: 2 to 7 mA – high: 13 to 19 mA ■ Measurement method: period length/frequency measurement ■ Accuracy 0.01% of measured value ■ Temperature drift 0.01% over complete measuring range
Pulse	■ Frequency range of 0.01 Hz to 18 kHz ■ Signal level 2 to 7 mA low; 13 to 19 mA high with approx. 1.3 kΩ dropping resistor at max. 24 V voltage level
Voltage (digital input)	■ Voltage level – low: -3 .. 5V – high: 12 .. 30V (to DIN 19240) ■ Input current typically 3 mA with overload and reverse polarity protection ■ Scanning rate: 4 x 4 Hz (Terminals 83, 85, 93, 95) ■ 2 x 20kHz (Terminals 81, 91)
Voltage (analog input)	■ Voltage: 0..10 V, 0..5 V, ±10 V, measured error ±0.1% of measuring range, input impedance > 400 kΩ ■ Voltage: 0..100 mV, 200 mV, 0..1 V, ±1 V; measured error ±0.1% of measuring range, input impedance > 1 MΩ

Measured variable	Input		
Resistance thermometer (RTD) to ITS 90	Designation	Measuring range	Accuracy (4-wire connection)
	Pt100	-200 to 800 °C (-328 to 1472 °F)	0.03% of full scale value
	Pt500	-200 to 250 °C (-328 to 482 °F)	0.1% of full scale value
	Pt1000	-200 to 250 °C (-328 to 482 °F)	0.08% of full scale value
	■ Type of connection: 3 or 4-wire system ■ Measuring current 500 µA ■ Resolution 16 Bit ■ Temperature drift 0.01% / K (0.0056% / °F)		
Thermocouples (TC)	Type	Measuring range	Accuracy
	J (Fe-CuNi), IEC 584	-210...999.9 °C (-346...1832 °F)	± (0.15% oMR +0.5 K) as of -100 °C ± (0.15% oMR +0.9 °F) as of -148 °F
	K (NiCr-Ni), IEC 584	-200...1372 °C (-328...2502 °F)	± (0.15% oMR +0.5 K) as of -130 °C ± (0.15% oMR +0.9 °F) as of -202 °F
	T (Cu-CuNi), IEC 584	-270...400 °C (-454... 752 °F)	± (0.15% oMR +0.5 K) as of -200 °C ± (0.15% oMR +0.9 °F) as of -328 °F
	N (NiCrSi-NiSi), IEC 584	-270...1300 °C (-454...1386 °F)	± (0.15% oMR +0.5 K) as of -100 °C ± (0.15% oMR +0.9 °F) as of -148 °F
	B (Pt30Rh-Pt6Rh), IEC 584	0...1820 °C (32...3308 °F)	± (0.15% oMR +1.5 K) as of 600 °C ± (0.15% oMR +2.7 °F) as of 1112 °F
	D (W3Re/W25Re), ASTME 998	0...2315 °C (32...4199 °F)	± (0.15% oMR +1.5 K) as of 500 °C ± (0.15% oMR +2.7 °F) as of 932 °F
	C (W5Re/W26Re), ASTME 998	0...2315 °C (32...4199 °F)	± (0.15% oMR +1.5 K) as of 500 °C ± (0.15% oMR +2.7 °F) as of 932 °F
	L (Fe-CuNi), DIN 43710, GOST	-200...900 °C (-346...1652 °F)	± (0.15% oMR +0.5 K) as of -100 °C ± (0.15% oMR +0.9 °F) as of -148 °F
	U (Cu-CuNi), DIN 43710	-200...600 °C (-328...1112 °F)	± (0.15% oMR +0.5 K) as of -100 °C ± (0.15% oMR +0.9 °F) as of -148 °F
	S (Pt10Rh-Pt), IEC 584	0...1768 °C (32...3214 °F)	± (0.15% oMR +3.5 K) for 0...100 °C ± (0.15% oMR +1.5 K) for 100...1768 °C ± (0.15% oMR +6.3 °F) for 0...212 °F ± (0.15% oMR +2.7 °F) for 212...3214 °F
	R (Pt13Rh-Pt), IEC 584	-50...1768 °C (-58...3214 °F)	± (0.15% oMR +3.5 K) for 0...100 °C ± (0.15% oMR +1.5 K) for 100...1768 °C ± (0.15% oMR +6.3 °F) for 0...212 °F ± (0.15% oMR +2.7 °F) for 212...3214 °F
	Error, internal temperature compensation: ≤ 3 °C (5.4 °F)		

Number

Number:
- 4 x 0/4 to 20 mA/PFM/pulse (in basic device)

Maximum number:
- Analog inputs: 10 (depends on the number and type of expansion cards)
- Digital inputs: 18 (depends on the number of integrated digital cards: 6/12/18 digital inputs)

Galvanic isolation

The inputs are galvanically isolated between the individual expansion cards and the basic device (see also "Galvanic isolation" under Output).

Note!
In the case of digital inputs, every terminal pair is galvanically isolated from one another.

Output

Output signal

Current, pulse, transmitter power supply (TPS) and switching output

Galvanic isolation

Basic device:

Connection with terminal designation	Power supply (L/N)	Input 1/2 0/4 to 20 mA/ PFM/pulse (10/11) or (110/11)	Input 1/2 TPS (82/81) or (83/81)	Output 1/2 0 to 20 mA/pulse (132/131) or (134/133)	Interface RS232/485 housing front or (102/101)	TPS external (92/91)	Digital input (94/95/96)
Power supply		2.3 kV	2.3 kV	2.3 kV	2.3 kV	2.3 kV	2.3 kV
Input 1/2 0/4-20 mA/PFM/pulse	2.3 kV			500 V	500 V	500 V	500 V
Input 1/2 TPS	2.3 kV			500 V	500 V	500 V	500 V
Output 1/2 0-20 mA/pulse	2.3 kV	500 V	500 V		500 V	500 V	500 V
Interface RS232/RS485	2.3 kV	500 V	500 V	500 V		500 V	500 V
TPS external	2.3 kV	500 V	500 V	500 V	500 V		500 V
Digital input (81/83/85 and 91/93/95)	2.3 kV	500 V	500 V	500 V	500 V	500 V	500 V
Input 1/2 U/I/TC	2.3 kV	500 V	500 V	500 V	500 V	500 V	500 V

Note!
The specified insulation voltage is the AC testing voltage U_{eff} which is applied between the connections.
Basis for assessment: IEC 61010-1, protection class II, overvoltage category II

Current - pulse output variable

Current

- 0/4 to 20 mA +10% overreach, invertible
- Load max. 500 Ω at 20 mA
- Accuracy 0.1% of full scale value
- Temperature drift: 0.01% / K (0.0056% / °F)
- Output ripple < 10 mV at 500 Ω for frequencies < 50 kHz
- Resolution 13 Bit
- Error signals 3.6 mA or 21 mA limit adjustable as per NAMUR NE43

Pulse

Basic device:
- Frequency range to 12.5 kHz
- Voltage level 0 to 1 V low, 12 to 28 V high
- Load min. 1 kΩ
- Pulse width 0.04 to 1000 ms

Expansion cards (digital passive, open collector):
- Frequency range to 12.5 kHz
- $I_{max.}$ = 200 mA
- $U_{max.}$ = 24 V ± 15%
- $U_{low/max.}$ = 1.3 V at 200 mA
- Pulse width 0.04 to 1000 ms

Number

Number:
- 2 x 0/4 to 20 mA/pulse (in basic device)
- With ethernet option: no output present in basic device

Max. number:
- 10 x 0/4 to 20 mA/pulse (depends on the number of expansion cards)
- 6 x digital passive (depends on the number of expansion cards)

Signal sources

All available multifunctional inputs (current, PFM or pulse inputs) and results can be freely allocated to the outputs.

Switching output

Function

Limit relay switches in these operating modes: minimum, maximum safety, gradient

Switch behavior

Binary, switches when the alarm value is reached (potential-free NO contact)

Relay switching capacity

Max. 250 V AC, 3 A / 30 V DC, 3 A

Note!
When using relays on expansion cards, a mixture of low voltage and extra-low voltage is not permitted.

Switching frequency

Max. 5 Hz

Switching threshold

Freely programmable

Hysteresis

0 to 99%

Signal source

All available inputs and calculated variables can be allocated freely to the switching outputs.

Number of output states

> 100,000

Scan rate

250 ms

Number

1 (in basic device)
Max. number: 19 (depends on the number and type of expansion cards)

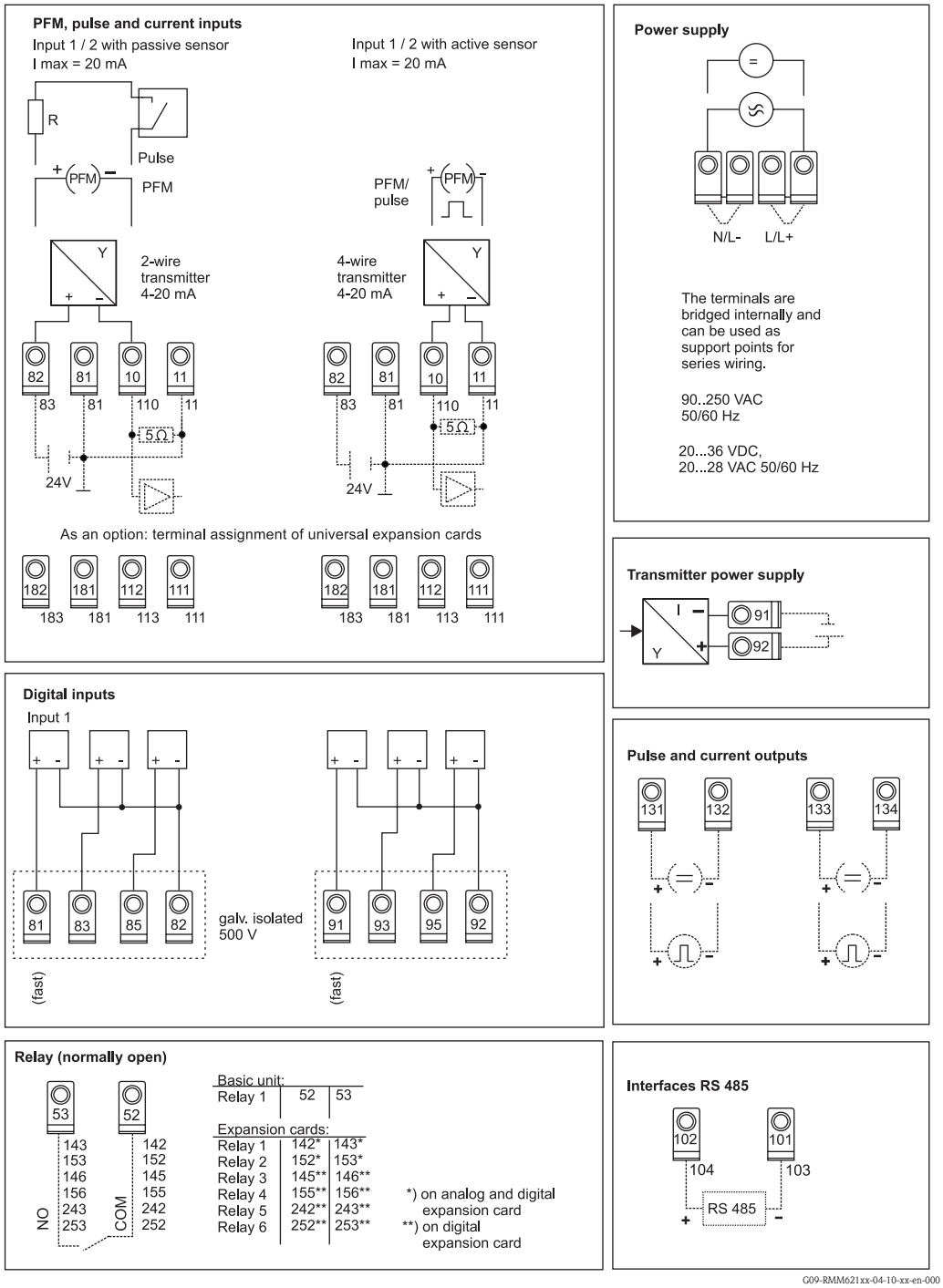
Transmitter power supply and external power supply

- Transmitter power supply unit (TPS), terminals 81/82 or 81/83 (optional current expansion cards 181/182 or 181/183):
  Max. output voltage 24 V DC ± 15%
  Impedance < 345 Ω
  Max. loop current 22 mA (at U_{out} > 16 V)
- Technical data RMM621:
  HART® communication is not impaired
  Number: 4 TPS in the basic device
  Max. number: 10 (depends on the number and type of expansion cards)
- Additional power supply (e.g. external display), terminals 91/92:
  Supply voltage 24 V DC ± 5%
  Max. current 80 mA, short-circuit proof

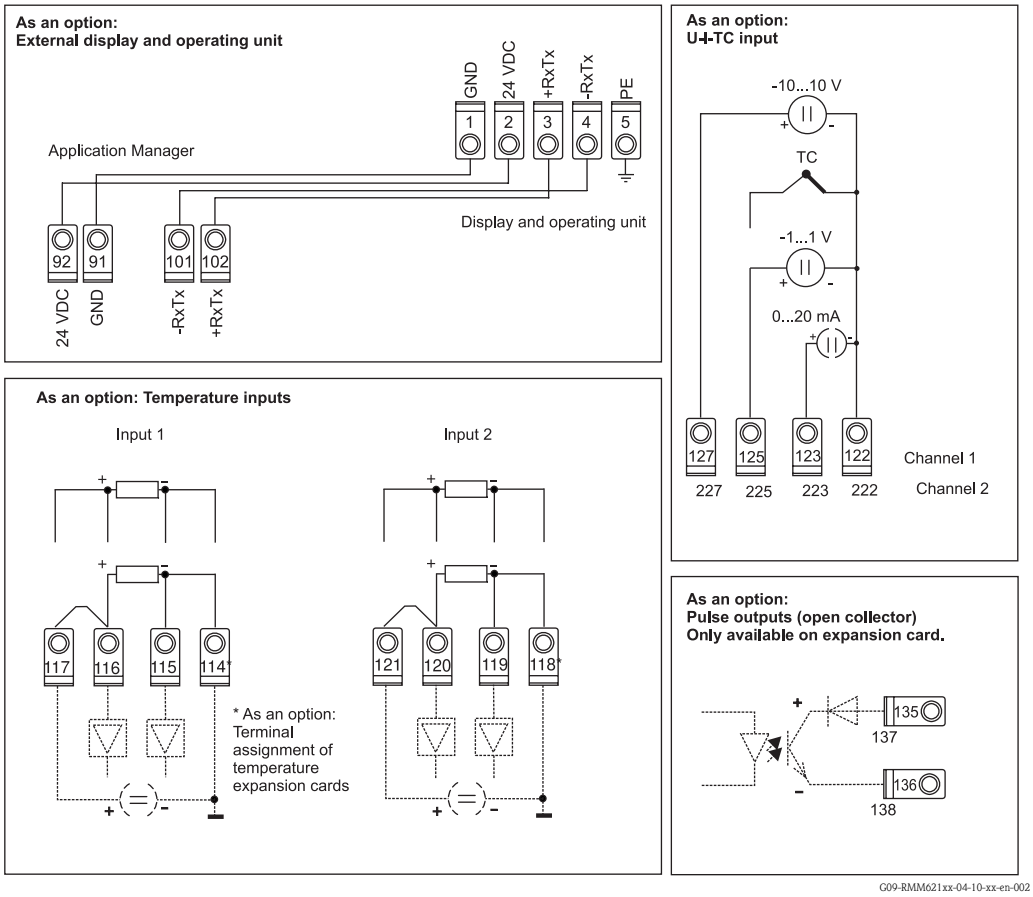
Number 1
Source resistance < 10 Ω

Electrical connection

Electrical connection (circuit diagrams)



Terminal assignment of RMM621 - basic device and expansion cards



Terminal assignment of RMM621 - expansion cards

Supply voltage

- Low-voltage power unit: 90 to 250 V AC 50/60 Hz
- Extra-low voltage power unit: 20 to 36 V DC or 20 to 28 V AC 50/60 Hz

Power consumption

8 to 38 VA (depending on the version)

Connection data interface

RS232

- Connection: jack socket 3.5 mm, front-panel
- Transmission protocol: ReadWin® 2000
- Transmission rate: max. 57,600 baud

RS485

- Connection: plug-in terminals 101/102 (in basic device)
- Transmission protocol: (serial: ReadWin® 2000; parallel: open standard)
- Transmission rate: max. 57,600 baud

Optional: additional RS485 interface

- Connection: plug-in terminals 103/104
- Transmission protocol and transmission rate as standard interface RS485

Optional: Ethernet interface

Ethernet interface 10/100BaseT, connector type RJ45, connection via screened cable, IP address allocated via Setup menu in the device. Connection using interface with devices in office environment.
Safety distance: Office Equipment Standard IEC 60950-1 must be observed.
Connection to a PC: possible using "crossover" cables.

Note!
If the RMM621 has an Ethernet interface, no analog outputs are available on the base unit (slot E)!

Performance characteristics

Reference operating conditions

- Power supply 230 V AC ± 10%; 50 Hz ± 0.5 Hz
- Warm-up period > 30 min
- Ambient temperature range 25 °C ± 5 °C (77 °F ± 9 °F)
- Humidity 39% ± 10% RH

Installation

Installation instructions

Mounting location

In cabinet on DIN rail IEC 60715

Caution!
When using extension cards, venting with an air current of at least 0.5 m/s is necessary.

Orientation

No restrictions

Environment

Ambient temperature range

–20 to 50 °C (–4 to 122 °F)

Storage temperature

–30 to 70 °C (–22 to 158 °F)

Climate class

To IEC 60 654-1 Class B2 / EN 1434 Class 'C' (condensation not permitted)

Electr. safety

To IEC 61010-1: environment < 2000 m (6560 ft) height above MSL

Degree of protection

- Basic device: IP 20
- Remote operating and display unit: front IP 65

Electromagnetic compatibility

Interference emission

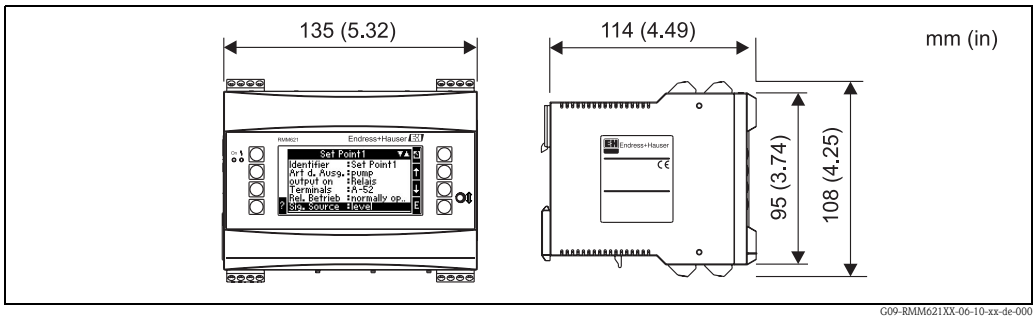
IEC 61326 Class A

Interference immunity

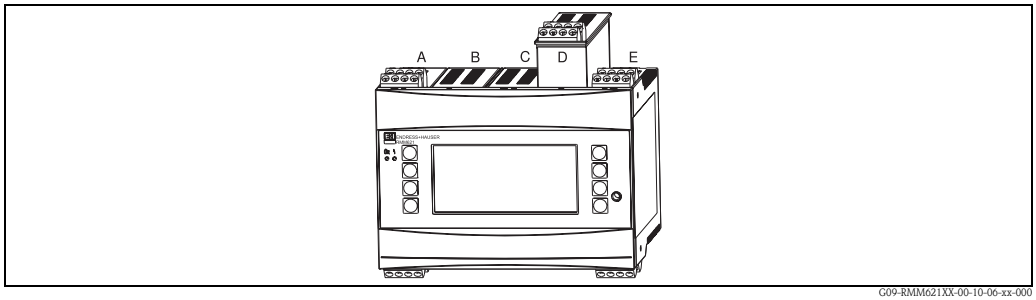
- Power failure: 20 ms, no impact
- Starting current limitation: $I_{max}/I_n \leq 50\%$ (T50% ≤ 50 ms)
- Electromagnetic fields: 10 V/m to IEC 61000-4-3
- Conducted HF: 0.15 to 80 MHz, 10 V to IEC 61000-4-3
- Electrostatic discharge: 6 kV contact, indirectly to IEC 61000-4-2
  - Burst (power supply): 2 kV to IEC 61000-4-4
  - Burst (signal): 1 kV/2 kV to IEC 61000-4-4
  - Surge (power supply AC): 1 kV/2 kV to IEC 61000-4-5
  - Surge (power supply DC): 1 kV/2 kV to IEC 61000-4-5
  - Surge (signal): 500 V/1 kV to IEC 61000-4-5

Mechanical construction

Design, dimensions



Housing for DIN rail to IEC 60715



Device with expansion cards (optional or available as an accessory)
- *Slots A and E are integral parts of the basic device*
- *Slots B, C and D can be expanded using expansion cards*

Weight

- Basic device: 500 g (17.6 oz) (maximum configuration with expansion cards)
- Remote operating unit: 300 g (10.6 oz)

Material

Housing: plastic PC, UL 94V0

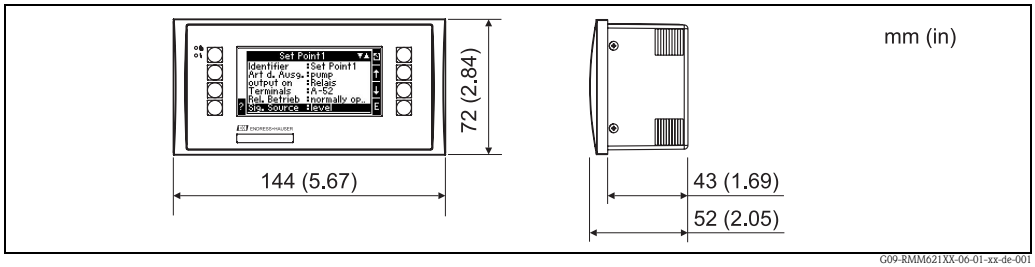
Terminals

Coded, pluggable screw terminals; core size 1.5 mm^2 (16 AWG) solid, 1.0 mm^2 (18 AWG) flexible with ferrules (applies to all connections).

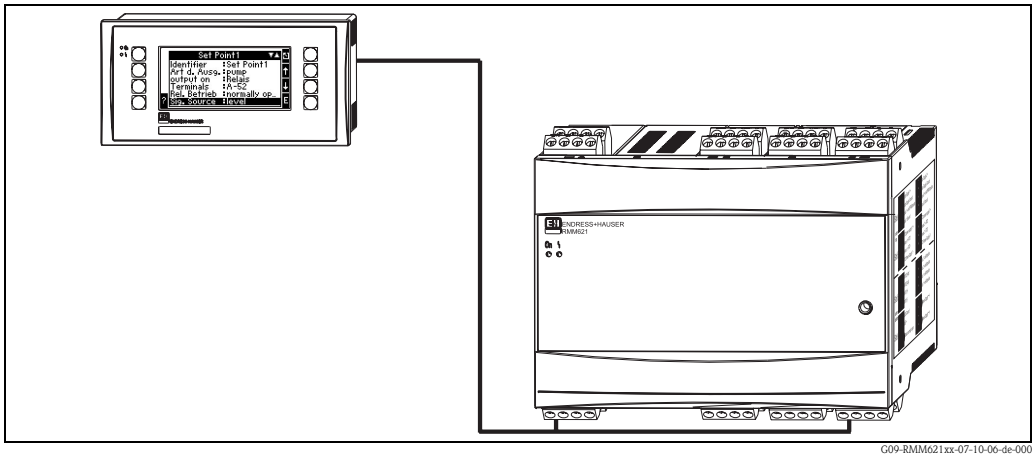
Human interface

Display elements

- Display (optional):
  160 x 80 DOT matrix LCD with blue background lighting. Color changes to red in the event of an error (configurable)
- LED status display:
  Operation: 1 x green (2 mm (0.08"))
  Fault message: 1 x red (2 mm (0.08"))
- Operating and display unit (optional or as accessory):
  An operating and display unit can also be connected to the device in the panel mounted housing (dimensions BxHxD = 144 x 72 x 43 mm (5.67" x 2.83" x 1.69")). Connection takes place at the integrated RS485 interface using the connection cable (l = 3 m (9.8 ft)) contained in the accessories kit. It is possible to have parallel operation of the operating and display unit with the device-internal display in RMM621.



Operating and display unit for panel mounting (optional or available as an accessory)



Operating and display unit in panel mounted housing

Operating elements	Eight front-panel softkeys interacting with the display (function of the keys is shown on the display).
Remote operation	RS232 interface (front-panel jack socket 3.5 mm (0.14 in)): configuration via PC with PC operating software ReadWin® 2000. RS485 interface
Real time clock	■ Deviation: 30 min per year ■ Power reserve: 14 days

Certificates and approvals

CE mark	The measuring system meets the requirements of the EC directives. Endress+Hauser confirms that the device has been tested successfully by affixing to it the CE mark.
Ex approval	Information about currently available Ex versions (ATEX, FM, CSA, etc.) can be supplied by your E+H Sales Centre on request. All explosion protection data are given in separate documentation which is available on request.
Other standards and guidelines	■ IEC 60529: Degrees of protection through housing (IP code) ■ IEC 61010: Protection measures for electrical equipment for measurement, control, regulation and laboratory procedures ■ EN 61326 (IEC 1326): Electromagnetic compatibility (EMC requirements) ■ NAMUR NE21, NE43 Association for Standards for Control and Regulation in the Chemical Industry

Ordering information

Product structure

RMM621	**Application Manager** Functions: mathematic, logic, open loop control, data logging Basic functions: 1x RS232 + 1x RS485. 3x LPS = Loop power supply. Inputs A:2x0/4-20mA/PFM/pulse. Output A:1x Relay SPST, 1x loop power. Inputs E:2x0/4-20mA/PFM/pulse. Output E:2x0/4-20mA/pulse, not, if Ethernet. - max. 3 application - free parameterable formula editor.

	Approval:	
	A	Non-hazardous area
	B	ATEX II(1)GD(EEx ia)IIC
	C	FM ASI I, II, III/1/ABCDEFG
	D	CSA (Ex ia) I, II, III/1/ABCDEFG

		Display; operation:	
		1	not selected; w/o button + software ReadWin 2000
		2	Alphanumeric; button 8
		3	Seperat; Panel 72x144mm, RS485
		4	Seperat; Panel 72x144mm, 2x RS485

			Power supply:	
			1	90-250VAC
			2	20-36VDC, 20-28VAC

				Slot B:	
				A	Not used
				B	Input: 2x 0/4-20mA/PFM/pulse + LPS Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
				C	Input: 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
				D	Input: 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
				E	Input: 2x U,I, TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
				G	Input: Ex-i, 2x0/4-mA/PFM/pulse + LPS Output: 2x0/4-20mA/pulse, 2x digital, 2x relay SPST
				H	Input: Ex-i, 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
				I	Input: Ex-i, 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
				J	Input: Ex-i, 2x U,I,TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST

					Slot C:	
					A	Not used
					B	Input: 2x 0/4-20mA/PFM/pulse + LPS Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
					C	Input: 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
					D	Input: 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
					E	Input: 2x U,I, TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
					G	Input: Ex-i, 2x0/4-mA/PFM/pulse + LPS Output: 2x0/4-20mA/pulse, 2x digital, 2x relay SPST
					H	Input: Ex-i, 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
					I	Input: Ex-i, 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
					J	Input: Ex-i, 2x U,I,TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST

RMM621-							⇐ order code (part 1)

Slot D:	
A	Not used
B	Input: 2x 0/4-20mA/PFM/pulse + LPS Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
C	Input: 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
D	Input: 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
E	Input: 2x U,I, TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
G	Input: Ex-i, 2x0/4-mA/PFM/pulse + LPS Output: 2x0/4-20mA/pulse, 2x digital, 2x relay SPST
H	Input: Ex-i, 2x Pt100/500/1000 Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST
I	Input: Ex-i, 2xDigital 20kHz, 4xDigital 4Hz Output: 6x relay SPST
J	Input: Ex-i, 2x U,I,TC Output: 2x 0/4-20mA/pulse, 2x digital, 2x relay SPST

Software:	
AA	Mathematic
AB	Mathematic + Telealarm
YY	Special version, to be specified

Operating language:	
A	German
B	English
C	French
D	Italian
E	Spanish
F	Dutch

Communication:	
1	1x RS232 + 1x RS485
2	1x RS232 + 1x RS485 + cable + Software Readwin
3	1x RS232 + Profibus-DP Slave-Modul
4	1x RS232 + cable + Profibus-DP Slave-Modul external + software Readwin
5	1x RS232 + 2x RS485
6	1x RS232 + 2x RS485 + cable
A	1x RS232 + 1x RS485 + Ethernet
B	1x RS232 + 1x RS485 + Ethernet + cable + software Readwin
C	1x RS232 + Profib.DP Slave-Module + Ethernet
D	1xRS232 + cable + Profib.DP Slave Modul + Ethernet + software Readwin
E	1x RS232 + 2x RS485 + Ethernet
F	1x RS232 + 2x RS485 + cable+ Ethernet
G	1x RS232 + 1x RS485 + ModBus
H	1x RS232 + 1x RS485 ModBus + Ethernet

Factory calibration certificate:	
1	Not selected
2	With

RMM621-	⇐ order code (complete)

Product structure selection aid The following table contains an overview of the order codes for the expansion cards:

	Expansion cards product structure	Number of inputs	Number of outputs
Basic device	RMM621-xxxAAAxxxx	4x 0/4..20 mA/PFM/pulse + TPS	1 x relay SPST, 1 x TPS 2x0/4..20mA/pulse (standard) or No 0/4..20mA/pulse if ethernet option selected
Basic device + 1 expansion card	**1 analog current expansion card (incl. sensor power supply)** RMM621-xxxBAAxxxx (non-Ex) RMM621-xxxGAAxxxx (Ex)	6x 0/4..20 mA/PFM/pulse + TPS	3 x relay SPST, 1 x TPS, 2 x digital 4x0/4..20mA/pulse (standard) or 2x0/4..20mA/pulse if ethernet option selected
	1 U-I-TC expansion card (incl. sensor power supply) RMM621-xxxEAAxxxx (non-Ex) RMM621-xxxJAAxxxx (Ex)	Always 4x 0/4..20 mA/PFM/pulse + TPS; 2x 0/4..20 mA or 0..10 V, 0..5 V, ±10 V, 0..100 mV,.200 mV, 0..1 V, ±1 V, ±150 mV or TC	3 x relay SPST, 1 x TPS, 2 x digital 4x0/4..20mA/pulse (standard) or 2x0/4..20mA/pulse if ethernet option selected
	1 digital expansion card RMM621-xxxDAAxxxx (non-Ex) RMM621-xxxIAAxxxx (Ex)	4x 0/4..20 mA/PFM/pulse + TPS 2 x digital to 20 kHz, 4 x digital to 4 Hz	7 x relay SPST, 1 x TPS 2x0/4..20 mA/pulse (standard) or no 0/4..20mA/pulse if ethernet option selected
Basic device + 2 expansion cards	**2 analog current expansion cards (incl. sensor power supply)** RMM621-xxxBBAxxxx (non-Ex) RMM621-xxxGGAxxxx (Ex)	8x 0/4..20 mA/PFM/pulse	5 x relay SPST, 1 x TPS, 4 x digital 6x0/4..20mA/pulse
	2 digital expansion cards RMM621-xxxDDAxxxx (non-Ex) RMM621-xxxIIAxxxx (Ex)	4x 0/4..20 mA/PFM/pulse + TPS 4 x digital to 20 kHz, 8 x digital to 4 Hz	13 x relay SPST, 1 x TPS 2x0/4..20mA/pulse
Basic device + 3 expansion cards	**3 analog expansion cards** RMM621-xxxBBBxxxx (non-Ex) RMM621-xxxGGGxxxx (Ex)	10 x 0/4..20 mA/PFM/pulse + TPS	7 x relay SPST, 1 x TPS, 6 x digital 8x0/4..20mA/pulse
	3 digital expansion cards RMM621-xxxDDDxxxx (non-Ex) RMM621-xxxIIIxxxx (Ex)	4x 0/4..20 mA/PFM/pulse + TPS 6 x digital to 20 kHz, 12 x digital to 4 Hz	19 x relay SPST, 1 x TPS 2x0/4..20mA/pulse
Combinations			
Basic device + 2 expansion cards	**1 analog / 1 digital expansion card** RMM621-xxxBDAxxxx (non-Ex) RMM621-xxxGIAxxxx (Ex)	6x 0/4..20 mA/PFM/pulse + TPS 2 x digital to 20 kHz, 4 x digital to 4 Hz	9 x relay SPST, 1 x TPS, 2 x digital 4x0/4..20mA/pulse

	Expansion cards product structure	Number of inputs	Number of outputs
Basic device + 3 expansion cards	**2 analog / 1 digital expansion cards** RMM621-xxxBBDxxxx (non-Ex) RMM621-xxxGGIxxxx (Ex)	8 x 0/4..20 mA/PFM/pulse + TPS 2 x digital to 20 kHz, 4 x digital to 4 Hz	11 x relay SPST, 1 x TPS, 4 x digital 6x0/4..20mA/pulse
	1 analog / 2 digital expansion cards RMM621-xxxDDBxxxx (non-Ex) RMM621-xxxIIGxxxx (Ex)	6x 0/4..20 mA/PFM/pulse + TPS 4 x digital to 20 kHz, 8 x digital to 4 Hz	15 x relay SPST, 1 x TPS, 2 x digital 4x0/4..20mA/pulse

Accessories

- Display- and operating keys: in offset housing for panel mounting 144x72mm
  Order No.: RMM621A-AA
- RS232 interface cable, 3.5mm plug, with PC software ReadWin to PC connection
  Order No.: RMM621A-VK
- Profibus-DP slave module for DIN rail
  Order No.: RMM621A-P1
- Adhesive label printed (max.2x16 char.)
  Order No.: 51004148
- Metal TAG
  Order No.: 51002393
- Label paper tag 3x16 char
  Order No.: 51010487

Expansion cards

The device can be extended with max. 3 universal cards and/or digital cards and/or current cards and/or Pt100 cards.

Extension card digital, 6x dig. In 6x Rel. Out, cpl. incl. terminal + fixing frame	Order No.: RMM621A-DA
Extension card digital ATEX approval, 6x dig. In 6x Rel. Out, cpl. incl. terminal + fixing frame	Order No.: RMM621A-DB
Extension card 2x U,I,TC Outp. 2x0/4mA/Imp., 2x Dig., 2x Rel. SPST	Order No.: RMM621A-CA
Extension card 2x U,I,TC, ATEX approval Outp. 2x0/4mA/Imp., 2x Dig., 2x Rel. SPST	Order No.: RMM621A-CB
Extension board temperature (Pt100/Pt500/Pt1000) cpl. incl. connector + fixing frame	Order No.: RMM621A-TA
Extention card temp.ATEX approval, (Pt100/500/1000) cpl. incl. terminals	Order No.: RMM621A-TB
Extension board universal(PFM/impuls/analog/loop power) cpl. incl. connector and fixing frame	Order No.: RMM621A-UA
Extention card univ.ATEX approval (PFM/pulse/analog./LPS) cpl. incl. terminal	Order No.: RMM621A-UB

Documentation

❑'Mathematics Module RMM621' Operating Instructions (BA217R/09)
❑'System Components' brochure (FA016K/09)

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