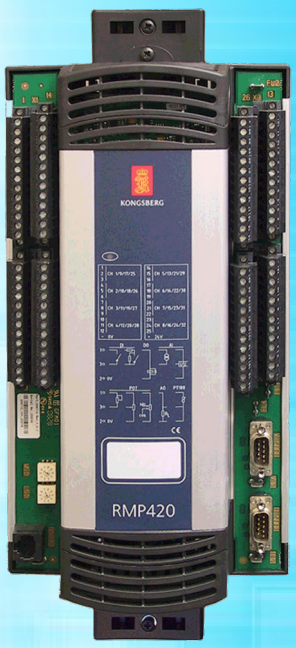
RMP420



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BENEFITS

- Over-voltage protection
- Extensive module diagnostics
- I/O channels online configurable
- Soft and hard fail-safe
- Dual watchdog
- Certified for use in hazardous area zone 2
- RIO module and I/O loop, powered from the same source
- Automatic recovery protection e.g. automatic start of faulty channels
- Easy installation and replacement
- Simple and safe FW upgrade
- Status LED

RMP420-Remote Multipurpose Input/Output

RPM420 is a multipurpose I/O module for use in Alarm monitoring and Integrated Control Systems. RMP420 is designed for 32 field input channels in single topologies. Its interface towards the host control computer (RCU) is provided by redundant I/O bus.

The module is approved for Ex Zone 2 applications.

Functions

- 32 software configurable multipurpose solid-state channels.
- Analog and Digital Input and Output (AI, AO, DI and DO).
- 2 or 3 wire Resistance Temperature Detector (RTD).
- 2 channels can be configured as pulse/frequency/encoder input.
- Short-circuit protected I/O loop power output.
- Dual Remote I/O process BUS interface for redundant communication with host computer(s).
- Communication ports galvanically insulated from other module circuitry.
- Loop monitoring (per channel).

TECHNICAL DATA

KM Article number	RMP420: 306712
Electrical	
Input supply voltage:	24 VDC (18-31.2 V)
Power consumption:	• Power: 10 W Typical • Loop power: Configuration dependable
Power connectors:	• Screw terminals • Cable cross-section: 2.5 mm² • Max. torque 0.4-0.5 Nm
RBUS interface	
RBUS connectors:	2x9 pin male D-Sub, RS485, galvanic isolated
Input/output	
No. of I/O channels:	32
I/O configuration:	Multipurpose. Channels are individually configured
Digital Input (DI)	
Loop voltage:	Input supply voltage
Input loop current:	Max. 4 mA @ 24 VDC loop voltage
Channel "Off" current:	<0.5 mA
Channel "On" current:	>3 mA
Max input voltage:	Input supply voltage
Max. input signal freq.:	10 ms pulse
Compliance:	Namur compliant, PNP/NPN compliant
Digital Output (DO)	
Loop voltage:	Input supply voltage
Loop driver device:	Short Circuit Proof High Side Driver
Loop driver trip current:	approx. 1.4 A @ 20°C (reset by command)
Loop driver "Off" leakage:	Max. 0.1 mA @ 24 VDC input supply voltage
Loop monitoring current:	Max. 2 mA @ 24 VDC input supply voltage
Analog Input (AI)	
Voltage input range:	0-4 V, 0-10 V
Input resistor to ground:	3 MΩ
Current input range:	0-20 mA
Automatic protection:	26 mA
Input resistor to ground:	150 Ω ±1 %
Measurement accuracy:	±0.15% of full scale
PT100 interface	
Temp. range:	-200 to 600°C
Resolution:	±0.5°C
Accuracy:	±0.4% of full scale
Temperature drift:	±50 ppm/°C
Max. wire resistance:	25 ohm/wire
Response time	1000 ms

Analaog Output (AO)	
Voltage output range:	0-10 V ±0.5% (internal resistance: 1 kohm)
Current output range:	0-20 mA
Minimumlocal resistance:	500 ohm
Measurement accuracy:	±0.35% of full scale
Pulse/Frequency interface	
Max. input range:	Pulse count freq.:10 kHz Encoder count Up/Down: 2.5 kHz rev. (4 counts/ revolution)
Duty cycle:	Pulse width: min. 11µ @ 10 kHz range
Pulse lever transmission:	Namur: 1on >2.1 mA, 1off <1.2 mA. Rin <2.2 kohm, 1max = 3 mA,
Current:	1ohm >9 mA, 1off <7 mA, Rin <1 kohm, 1max = 13 mA
Accuracy (oscillator):	100 ppm over the whole temp. range (-15 to +70°C) 25 ppm typical @ 2°C
Fail safe	
HW Fail safe:	Min. 65 ms
Internal Test Error:	Instantly set
Soft Fail safe (down counter):	100 ms - 65 sec. (6 sec. default)
Compliance	• IACS E10 • IEC 60945 • IEC 60355 • IEC/EN60079-0,-7
Type approval	Presafe 18ATEX12094X (II 3G Ex ec IIC T4 Gc)
Environmental specifications	
Ambient temp. and humidity:	
Temp. operation:	-15°C to +70°C
Temp. storage:	-25°C to +70°C
Humidity operation:	Up to 98% RH
Humidity storage:	Up to 98% RH
Protection standards:	IP 20 (IEC 60529)
Mechanical	
HxWxD:	355x158x87 mm
Weight:	1.35 kg
DIN rail vertical mounted:	35 7.5/15
Life cycle prediction	
Predicted failure rate @ GB 25°C (60% confident, based on chip suppliers data):	38.5 years
Predicted failure rate @ NS 35°C (Environmental derating based on Rome Laboratory toolkit):	10.4 years

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