Package leaflet robusto-master RMC503

V1.4

Please keep save

Important information:

Please observe all guidelines in the respective manual before startup!
You can find the download file under
www.elrest.com >> Products & Solutions >> SPS / PLC >> robusto control >> master >> RMC503


Warning	Note for devices with the index = „ PROTOTYPE". Prototypes are used only for test purposes. **The RMC5XX is mounted on a 35 mm top hat rail acc. DIN EN 60715** **Bring the system into a safe, de-energized state before starting installation, disassembly or wiring of the device!** **THE TOP HAT RAIL MUST BE CONNECTED TO THE FUNCTION EARTH (FE).**

Device	Mounting position horizontal (standard)	Mounting position vertical	Mounting position desk
RMC503			
Operating temperature	50°C	50°C	40 °C

The functional earth of the RMCxxx has to be connected with the functional earth in the control cabinet. In this way the device is included in the earthing concept of the control cabinet.
The FE mounting bolt between the RJ45 sockets of X101 and X102 has to be used. For the connection
are particularly suited ultraflexible copper braiding tapes / ground strips, they are to be given preference over copper single conductor.
A M3 screw with an installation depth of 6 mm has to be used for mounting.
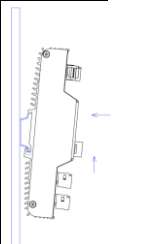
Mounting	Keep the RMC5XX over the top hat rail, so that the top hat rail applies in a right angle to the rear side of the device. The top hat rail must not be thicker than 1,5 mm. Put the device into the top hat rail and push against the spring force of the splay, till the upper part of the profile snaps over the upper part of the top hat rail. Release the device; it must fit free and robust on the top hat rail. Check the best fit by easy attempts at movement of the device.
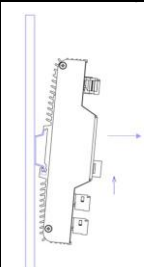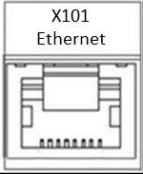
Disassembly:	All connecting plugs must be removed before the disassembly. For the disassembly push up the device, till the device can be tipped forward for the release. Push the device against the spring force of the splay till it can released from the upper part of the top hat rail. In this moment the device is no longer kept from the top hat rail, it must be kept by you to avoid falling down. Lower the device and remove it from the top hat rail.

X101: Gigabit Ethernet interface

This interface is executed as a RJ45 socket. The transmission rate is 100/1000 Mbit/s. The connections and the cables acc. CAT 5e and the guidelines for Ethernet interfaces.
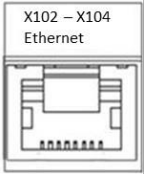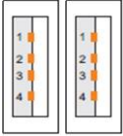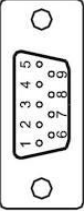
Interface X101	PIN	Allocation	Function
	1	BI_DA+	Bidirectional signal-pair DA+
	2	BI_DA-	Bidirectional signal-pair DA-
	3	BI_DB+	Bidirectional signal-pair DB+
	4	BI_DC+	Bidirectional signal-pair DC+
	5	BI_DC-	Bidirectional signal-pair DC-
	6	BI_DB-	Bidirectional signal-pair DB-
	7	BI_DD+	Bidirectional signal-pair DD+
	8	BI_DD-	Bidirectional signal-pair DD-

X102 – X104: Ethernet interfaces

The interfaces are executed as a RJ45 socket with switch functionality. The integrated 100 Mbit/s Ethernet- switch supports Auto – MDI(X). The connections and the cables acc. CAT 5e and the guidelines for Ethernet interfaces.

Interface X102- X104	PIN	Allocation	Function
	1	TX+	Transmit Data +
	2	TX-	Transmit Data -
	3	RX+	Receive Data +
	4	n.c.	none
	5	n.c.	none
	6	RX-	Receive Data -
	7	n.c.	none
	8	n.c.	none

X106A und X106B: USB 2.0 Host interface

The interfaces is executed as a USB 2.0-Host interface with Type A socket. Power supply max. 500 mA for each interface. The connection for this interface acc. the USB-specification, 2.0 High-Speed, max. transmission rate: 480 Mbit/s. The follwing table and illustration shows the pin assignment of this interface.

Interface X106	PIN	Allocation	Function
X106A 106B	1	USB_VCC1	USB + 5 VDC
	2	USB_N	USB data line D-
	3	USB_P	USB data line D-
	4	USB_GND	USB GND

X107: 1 x RS232, 2 x RS485

The interface is executed via a 9-pole D – Sub socket (male) and is galvanically isolated from the supply voltage of the device. It's designed with RS232 and 2 x RS485

Interface X107	PIN	Allocation	Function
	1	RS485 2	Differential signal A2(+)
	2	RS232	Receive Data
	3	RS232	Transmit Data
	4	RS485 2	Differential signal B2 (-)
	5	RS232	ISO-GND-RS232
	6	RS485 2	ISO-GND-RS485-2
	7	RS485 1	Differential signal B1 (-)
	8	RS485 1	Differential signal A1 (+)
	9	RS485 1	ISO-GND-RS485-1

X108: 1 x RS485

This interface is a D-sub 9 socket, implemented as RS485-3 with galvanic isolation. and 2 control LEDs.

Interface X108	PIN	Allocation	Function
	1	Unused	None
	2	Unused	Nonr
	3	RxD/TxD-P	A
	4	CNTR	Repeat control signal
	5	GND 5 V	Signal ground
	6	5 V	Power supply
	7	Unused	None
	8	RxD/TxD-N	B
	9	Unused	None

X109: Power supply with two LEDs for control

Power supply for the system -CPU:
The labels „24V-S" und „GND-S" mark the both pins in the 4-pole WAGO-plug (714-104)
The connector is protected against reverse. The cable length max. 3 m / 0,75 … 1,5 mm^2 (AWG 19 …14)
Power supply has to be compliant to IEC 364-4-41 bzw. HD 384.04.41 (VDE 0100, Teil 410) und SELV / PELV.

Interface X109	PIN	Allocation	Function
1 2 3 4	1 2 3 4	24 V-S GND-S 24 V-P GND-P	Power supply system-CPU Reference potential (ground) Power supply internal I/O-Bus [*)] Reference potential (ground) [*)])* must be connected for RMC501 and RMC503

Functionearth (FE)

The housing has to be connected via the screw connection (on the lid),
corresponding low-resistance, to the funktion earth (FE).

FE
⊥
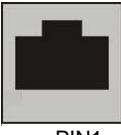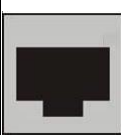
⚠️ The RMC5XX has to be included via its functional earth (FE) in the earthing concept.
- Connecting the top hat rail to FE
- FE screw corresponding low-resistance connecting with FE
- The cable screens of the communication ports, Ethernet, ,RS232-D-Sub and CAN are connected with their respective mating plug to FE.

X110A and X110B: 2x CAN with termination

X110A CAN0:This interface is lead out via a 8-pole RJ 45 plug, galvanically isolated from the supply voltage isolation. and linked with the termination switch S5.
X110B CAN1:This interface is lead out via a 8-pole RJ 45 plug, galvanically isolated from the supply voltage isolation. and linked with the termination switch S6.

CAN X110A CAN0	CAN110B CAN1	PIN	Allocation
PIN1	……..PIN1	1 2 3 4 5 6 7 8	CAN-L CAN-H GND (Signal Ground for CAN) NC NC NC NC NC

X105: µ SD Slot

The robusto master devices are equipped with a slot for µSD and µSDHC, located above left side of the device, below X101.
A cover flap nonexits.

S1 operating switch mode (BAS)

S1 RUN
STOP
RES

The switch has 3 positions::   RUN
                                 STOP
                                 RESET

Tasks with the operating switch mode:
- The processing of IEC applications can be controlled,
- Settings on the device.
- To release a reset on the device.

S2 – S6 Switch mode

For the interfaces X107, X108 and X110 can be switched the terminating resistors.

Status LED and Power – LED

They are explained in the device description.

Digital outputs X205 … X208

4 x socket 10-pole,
4 x yellow LEDs for the status display of the power supply, for each of the 8-bit groups
32 red LEDs for the outputs for the indication of the acitive output.
WAGO-714-140: Conductor crossection and contact spacing see data sheet WAGO.

……………………………………DOUT (24VDC/0,5A)…………………………………..………

X205	24V-205	GND-205	DOUT01	DOUT02	DOUT03	DOUT04	DOUT05	DOUT06	DOUT07	DOUT08	24V-206	GND-206	DOUT09	DOUT10	DOUT11	DOUT12	DOUT13	DOUT14	DOUT15	DOUT16	X206

X207	24V-207	GND-207	DOUT17	DOUT18	DOUT19	DOUT20	DOUT21	DOUT22	DOUT23	DOUT24	24V-208	GND-208	DOUT25	DOUT26	DOUT27	DOUT28	DOUT29	DOUT30	DOUT31	DOUT32	X208

Analog inputs X301 and X302

2 x female multipoint connector8 x 2-pole
AGO:713-1408: Conductor crossection and contact spacing see data sheet WAGO

X301	AIN01 / AI01-GND	AIN02 / AI02-GND	AIN03 / AI03-GND	AIN04 / AI04-GND	AIN05 / AI05-GND	AIN06 / AI06-GND	AIN07 / AI07-GND	AIN08 / AI08-GND		AIN09 / AI09-GND	AIN10 / AI10-GND	AIN11 / AI11-GND	AIN12 / AI12-GND	AIN13 / AI13-GND	AIN14 / AI14-GND	AIN15 / AI15-GND	AIN16 / AI16-GND	X302

………………………………………………………AIN …………………………………………………

Analog outputs: X303 – X304

2 x female multipoint connector 8 x 2-pole
WAGO 713-1408: Conductor crossection and contact spacing see data sheet WAGO.

…………………………………………………..………AOUT…………………………………………..………

X303	AOUT01 / AO01-GND	AOUT02 / AO02-GND	AOUT03 / AO03-GND	AOUT04 / AO04-GND	AOUT05 / AO05-GND	AOUT06 / AO06-GND	AOUT07 / AO07-GND	AOUT08 / AO08-GND		AOUT09 / AO09-GND	AOUT10 / AO10-GND	AOUT11 / AO11-GND	AOUT12 / AO12-GND	AOUT13 / AO13-GND	AOUT14 / AO14-GND	AOUT15 / AO15-GND	AOUT16 / AO16-GND	X304

X305: Power supply for analog in- and outputs

1 2   3   4

Power supply for the AIO's:
The labels „24V-305" and „GND-305" marks the both pins in the 4-poled WAGO-plug for supplying the analog in- and outputs. The connector is protected against polarity. WAGO: 714-104 The cable length to the power supply may not exceed 3m, and the conductor crossection amounts 0,75 … 1,5 mm².(AWG 19 …14)
Conductor crossection and contact spacing see data sheet WAGO.
Ensure a reliable electrical isolation of the low voltage for the 24 volt supply.
Use only produced powersupplies acc. IEC 364-4-41 or HD 384.04.41 (VDE 0100, part 410). They must fulfil the requirements to SELV acc. LPS acc. DIN EN 60950-1.

NOTICE	• The optionally buffering of the retain data at the prototype will be take place at a switch-off time > 200 ms.