M095, M096 M-Bus / RS232 converter

Summary

M095 and M096 are microprocessor-controlled M-Bus converters for energy and media meter readouts over RS232. The converters facilitate automatic baud rate switching, galvanical separation of power part and both interfaces, and they can host up to 26 and 60 M-Bus devices.

Applications

- **integration od M-Bus water, electricity, gas, and heat meters into PLC or SCADA over RS232 interface**

Function

The M095 converter connects up to 26 M-Bus devices to a process station or supervisory system over RS232. The M096, which provides stronger power supply, may host up to 60 M-Bus meters. Maximum communication speed is 9600 bps, with fully automatic baud rate switching – it is not necessary to set anything at the converter.

All interfaces are mutually separated up to 1000 V DC. It is a very important feature which provides high reliability even in harsh industry environment with high EMC pollution. The M-Bus power source is protected against short-circuit and overvoltage (suppresors 600 W and GDT).

The M-Bus devices are connected over a 2-pole connector, regardless of polarity. The RS232 bus is connected over a CANNON 9 M connector with cross (zero-modem) cable.

Power supply

The M-Bus converters M095 and M096 may freeze occasionally if powered by an unsuitable low voltage stabilized power supply. The supply must meet the requirements of EN 61000-6-2 ed. 3:2006 (EMC for industrial environment), and EN 61000-4-11 ed.2:2005 (Voltage dips, short interruptions and voltage variations immunity tests).

For the converter to operate correctly, following requirements must be met:
- power supply rise time must be maximum 70 ms
- the rise (and fall) must be monotonous, in other words, during the rise time the voltage must not drop.

If the freezing problem should appear, the first choice is to power the M-Bus converters by a separate power supply or 24 V AC transformer which is not loaded by other circuits (I/O modules, DDC process stations, air damper actuators etc.) that may distort the power supply characteristics.

Technical data

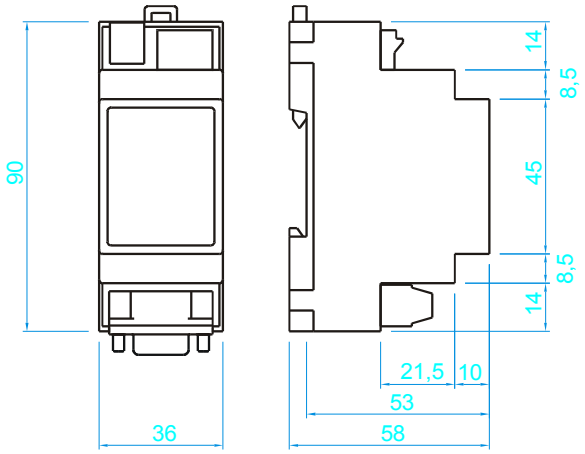
Power supply	20 V ÷ 24 V DC, 14 V ÷ 24 V AC, any polarity
Consumption	max. 6 VA
Working temperature	-20 ÷ 70°C
Relative humidity	5% ÷ 95% non-condensing
M-Bus	standard EN 1434-3, EN 13757-2; 300, 2400, and 9600 bps, automatic baud rate
Maximum bus length	1200 m
Number of M-Bus devices on the bus	**M095**: max. 26
	M096: max. 60
Short circuit protection	electronic with LED indication (ALR) and automatic reset
Overload sustainability	Sustainable to unlimited bus short-circuit
Galvanic separation	power part, RS232, and M-Bus are separated from each other up to 1000 V DC
LED	power (PWR), M-Bus transmit (Tx), M-Bus receive (Rx), M-Bus overload or short-circuit (ALR)
Dimensions	see below

Terminals, LED

1, 2	power, any polarity
TE	technical earth (optional)
M-Bus +	M-Bus, positive
M-Bus -	M-Bus, negative
RS232	RS232, CANNON9 M

ALR	M-Bus overload or short circuit, yellow LED
RX	data receive from M-Bus, green LED
TX	data transmit to M-Bus, red LED
PWR	power OK, green LED

Dimensions



Related products

IPLC301	process station MiniPLC
IPLC510	process station MiniPLC
IPCT.1	process station with touch screen display
IPCB.1	process station without display
RC-Vision	SCADA software
M020	RS232 / Ethernet converter, terminal server