

INSTALLING IU-9100-840x INTERFACE UNIT AND RP-9100-840x REPEATER

IU-9100 INTERFACE UNIT

- RS-232 to RS485 converter for System 91 Bus (for master device) and for BACnet MS/TP Bus (for monitoring physical signals only).

RP-9100 REPEATER

- Repeats and regenerates the RS-485 signal between bus segments when more than 32 devices must connected to a System 91 or BACnet MS/TP bus and can be used to support a back-bone and branch segment RS485 network layout.

WARNING:

- The IU-9100 and RP-9100 units do not have a power supply switch. Therefore an appropriate switch to isolate the device should be included in the power supply line to the IU-9100 and RP-9100.
- To avoid electrical shock, personal injury or damage to equipment, isolate power supply voltages above 30V before removing the cover.
- Connections and adjustments should be made by authorized and trained personnel only.
- These units are designed for use only in operating control systems. When operating control failure would result in personal injury or loss of property, it is the responsibility of the installer to add devices or systems that protect against, or warn of, control failure.

WIRING:

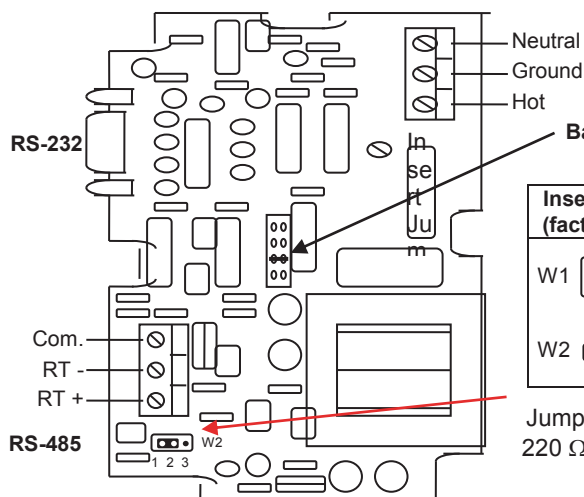
- Make sure that the line power supply voltage is in accordance with the power supply specified for the device – see Table 1.
- All wiring should conform to local codes and must be carried out by authorized personnel only.
- When using multi-stranded wire apply a metal ferrule to the exposed wire end.

TECHNICAL SPECIFICATIONS

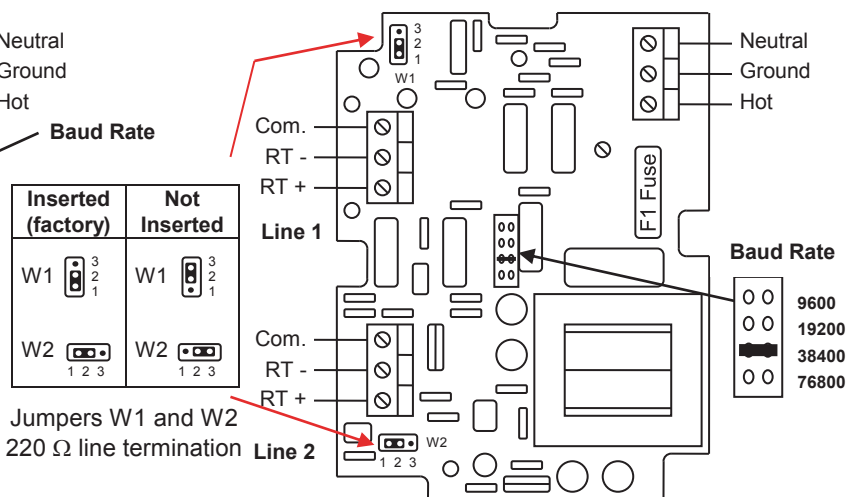
Power Supply:	24, 110 or 230 VAC at 50-60 Hz
Power consumption:	3 VA
Transmission speed:	9600, 19200, 38400, or 76800 Baud
Data transmission:	Bi-directional on signal sense
Max. cable length from IU to PC:	10 m shielded (1,5 m cable supplied with unit)
Max. devices on RS485 bus segment:	32 including IU-9100 / RP-9100
Max. common mode rejection:	1500 VRMS 50 Hz for 1 minute
Ambient operating limits:	0 to +55 °C / +32° to +130 °F
Relative humidity:	10 to 90 % RH, non condensing
Ambient storage limits:	-25 ° to +70 °C / -77 ° to +158 °F
Weight:	0,5 kg / 1.1 lb
Enclosure material:	ABS / Polycarbonate - self-extinguishing
Protection:	IP 30
Approvals:	- 89/336/EEC, EMC Directive: EN 61000-6-3, EN 61000-6-2 - 72/23/EEC, Low Voltage Directive: EN 60730

Table 1: Power Voltage and F1 Fuse Value

Model	Power Voltage	F1 Fuse Value
IU-9100-8401	230 VAC	T 200 mA 250 V
IU-9100-8403	110 VAC	T 400 mA 250 V
IU-9100-8404	24 VAC	T 1 A 250 V
RP-9100-8401	230 VAC	T 200 mA 250 V
RP-9100-8403	110 VAC	T 400 mA 250 V
RP-9100-8404	24 VAC	T 1 A 250 V



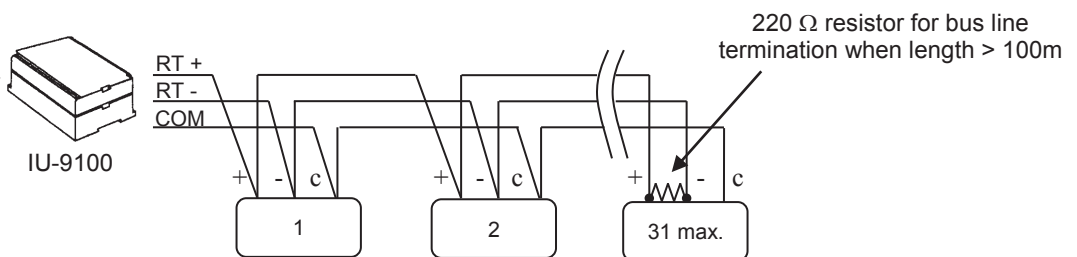
IU-9100-840x Interface Unit



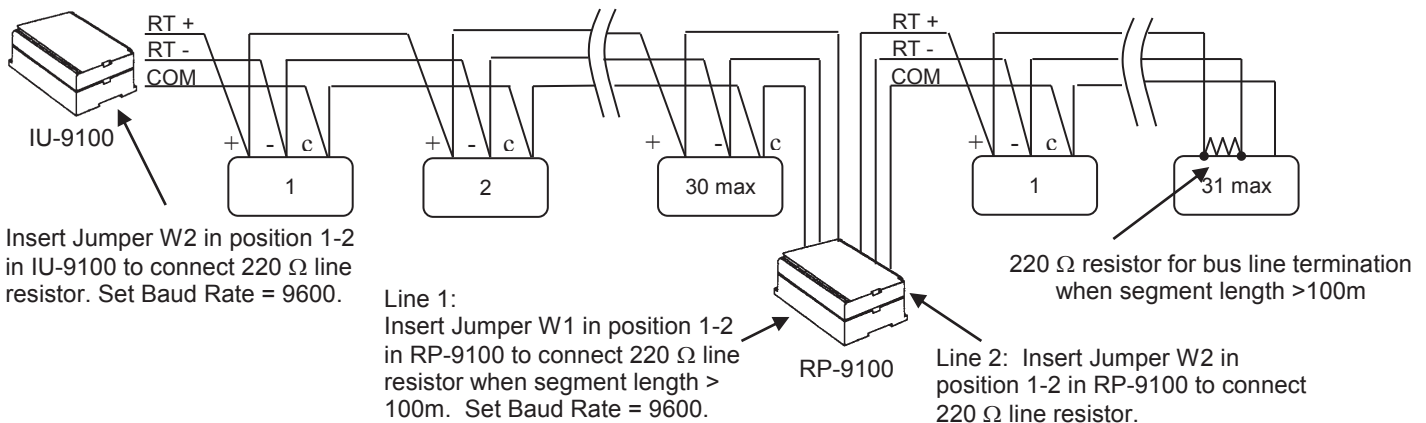
RP-9100-840x Repeater

SYSTEM 91 RS485 BUS LAYOUT WITH UP TO 32 DEVICES

Insert Jumper W2 in position 1-2 in IU-9100 to connect 220 Ω line resistor. Set Baud Rate = 9600.



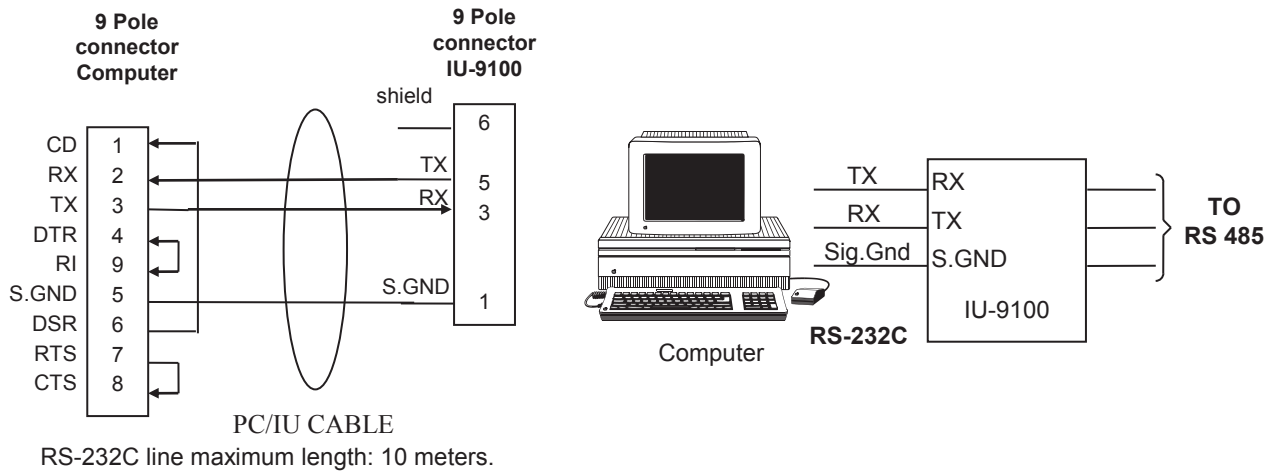
SYSTEM 91 RS485 BUS LAYOUT WITH MORE THAN 32 DEVICES



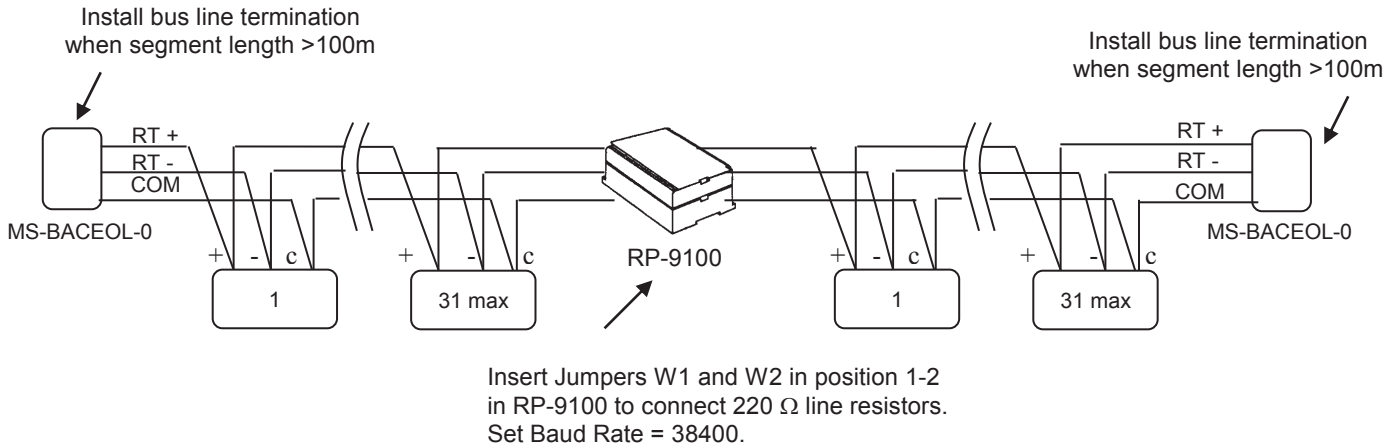
IMPORTANT:

Terminate each bus segment with a 220 Ω resistor at both ends when the segment length is greater than 100m. Maximum segment length without repeaters is 1200 m. Maximum number of devices in segment is 32 including IU-9100 / RP-9100.

PC/IU-9100 CONNECTION WIRING DIAGRAM

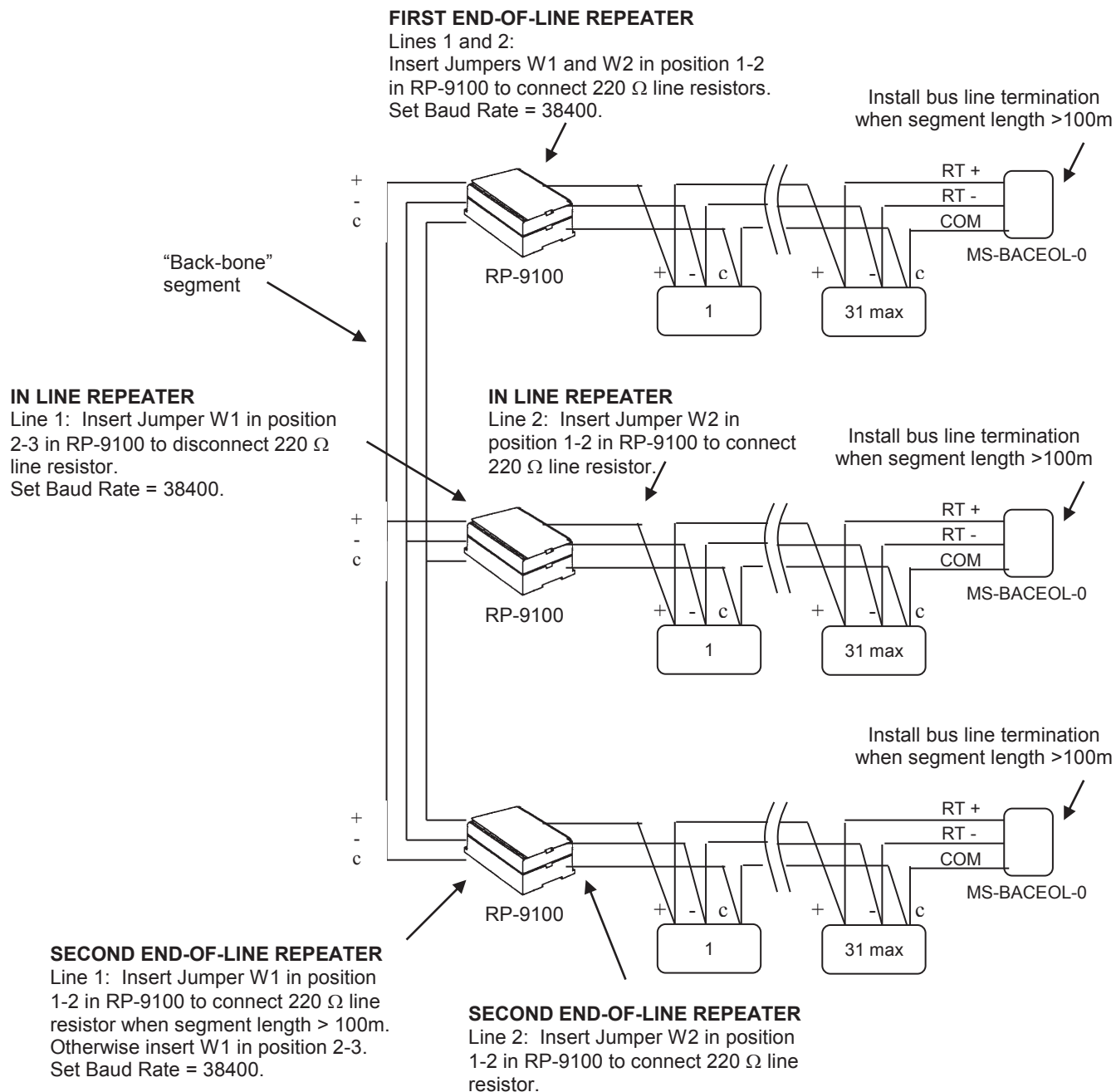


MS/TP RS485 BUS LAYOUT WITH MORE THAN 32 DEVICES



IMPORTANT:

Terminate each bus segment with an MS-BACEOL-0 at the end furthest away from the RP-9100 repeater when the segment length is greater than 100m. Always insert the W1 and W2 jumpers in RP-9100 to properly terminate the bus segments. Maximum segment length without repeaters is 450 m. Maximum number of devices in segment is 32 including RP-9100.

MS/TP RS485 BACK-BONE AND BRANCH SEGMENT LAYOUT**IMPORTANT:**

When the back-bone segment length is greater than 100m, terminate both ends using the W1 jumper in RP-9100. Other repeaters on the back-bone (or other devices) between the end-of-line repeaters must not have a bus terminating resistor installed. Maximum number of devices on back-bone is 32. Maximum number of devices in an MS/TP network is 127 master devices and 255 total master and slave devices. There must be no more than two repeaters between any two devices.

Terminate the bus segment from a repeater with an MS-BACEOL-0 at the end furthest away from the RP-9100 repeater when the segment length is greater than 100m. Always insert the W2 jumper in RP-9100 to properly terminate the bus segment. Maximum segment length without repeaters is 450 m. Maximum number of devices in segment is 32 including RP-9100.

Bus segments that are less than 100m in length require only one termination resistor.