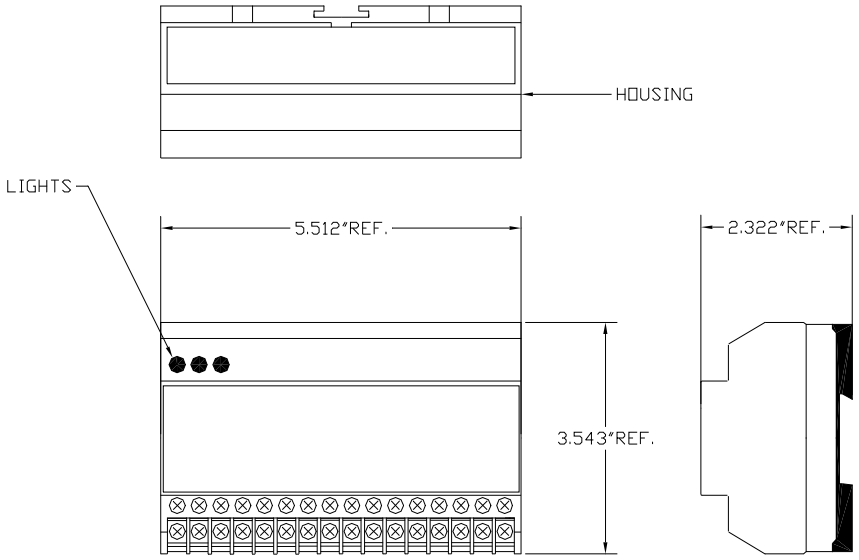
3.13 RTD Module Installation

3.13.1 Location

The mounting location for the Remote RTD Module should be chosen to give easy access to the RTD wiring, control terminals and indicator LEDs as well as providing a location to mount the power supply. The Remote RTD Module is specifically designed to be mounted close to the equipment it is monitoring. This eliminates long RTD wire lengths which save time and money on installation and wiring. The Benshaw Remote RTD Module is designed to mount on industry standard 35mm wide by 7.5mm deep DIN rail.

Figure 25: Remote RTD Module Mechanical Layout



3.13.2 Modbus Address

Set the rotary switch on the top of the Remote RTD Module to the desired Modbus address. Up to 2 modules can be connected to the MVRMX^3 starter. The address set by the rotary switch must match the setting in RTD 01 or RTD 02. For example, setting both the rotary switch and RTD 01 to 16 would make the connected module be module #1. The connected RTDs would then represent #1 to #8 in the RTD programming.

3.13.3 Power Connections

The 24VDC power source is connected to the following terminals.

- 24VDC-: Negative connection to 24VDC power supply
- 24VDC+: Positive connection to 24VDC power supply
- "⏚": Chassis ground connection

3.13.4 RS-485 Communication

The RS-485 communications wiring should use shielded twisted pair cable. The shield should only be terminated at one end. The connections are as follows:

MX RJ45	Module	Description
pin 5	A(-)	RS-485 negative communications connection
pin 4	B(+)	RS-485 positive communications connection
pin 8	Com	RS-485 common connection

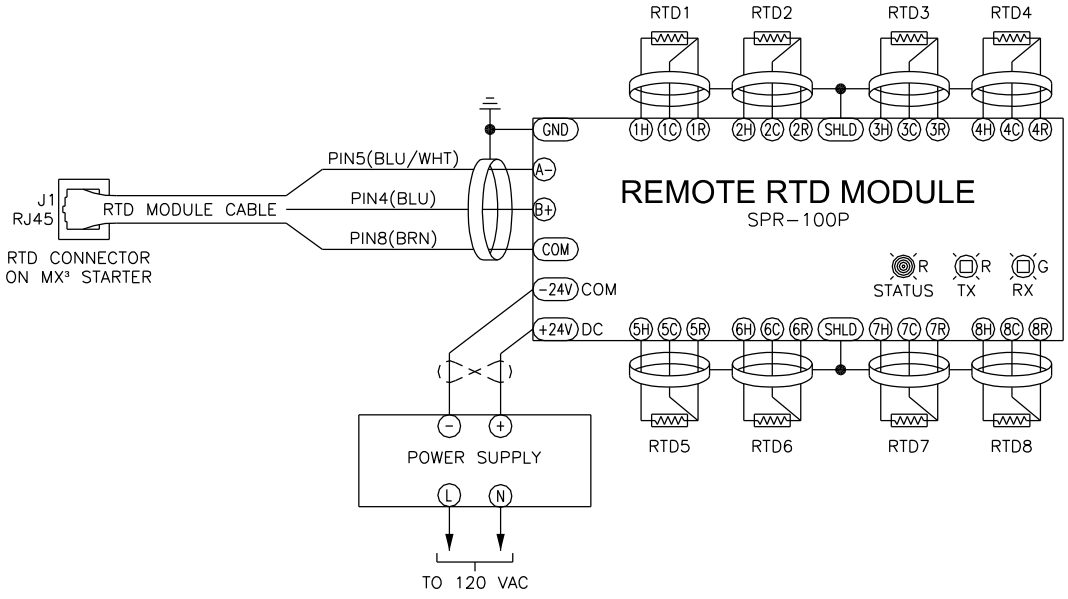
3.13.5 RTD Connections

Each Remote RTD Module has connections for up to 8 RTDs. The terminals for the RTD wires are as follows:

- R- RTD return wire
- C- RTD compensation wire
- H- RTD hot wire

Each RTD is connected to the three terminals with the common number. For example, RTD number 5 connects to the terminals numbered 5R, 5C and 5H.

Figure 26: Remote RTD Module Wiring



3.13.6 RTD Temperature vs. Resistance

Temperature		100Ω Pt (DIN 43760)	°C	°F	100Ω Pt
°C	°F		100	212	138.50
-50	-58	80.13	110	230	142.29
-40	-40	84.27	120	248	146.06
-30	-22	88.22	130	266	149.82
-20	-4	92.16	140	284	153.58
-10	14	96.09	150	302	157.32
0	32	100.00	160	320	161.04
10	50	103.90	170	338	164.76
20	68	107.79	180	356	168.47
30	86	111.67	190	374	172.46
40	104	115.54	200	392	175.84
50	122	119.39	210	410	179.51
60	140	123.24	220	428	183.17
70	158	127.07	230	446	186.82
80	176	130.89	240	464	190.45
90	194	134.70	250	482	194.08