Thermocouple terminal blocks

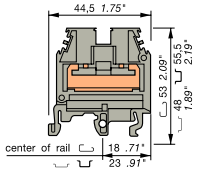
Screw clamp **DIN 1-3**

EExe and EExi voltage ratings apply to terminal blocks only without any accessory and mounted on DIN 3 rail.

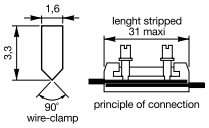
End stop	th. 9 mm	**BADL**	V0	1SNA **399 903** R0200
End stop	th. 9,1 mm	**BAM**	V2	1SNA **103 002** R2600
End stop	th. 9,1 mm	**BAM V0**	V0	1SNA **199 306** R0300
Rail	35 x 7,5 x 1	**PR3.Z2**		1SNA **174 300** R1700
Rail	35 x 15 x 2,3	**PR4**		1SNA **168 500** R1200
Rail	35 x 15 x 1,5	**PR5**		1SNA **168 700** R2200
Rail	32 x 15 x 1,5	**PR1.Z2**		1SNA **163 050** R0400

MTC 6.Ex

Spacing 6 mm .238"



6 mm block for thermocouple wires.

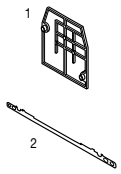


	Type	P/N
Standard blocks UL 94 V0 ■ Grey body	**MTC 6.Ex** ■	1SNA **146 227** R2500

Characteristics

Wire size **mm² / AWG**		2 Conductors for thermocouple (DIA. 0.9 - 1.5 mm)
Rated wire size	mm² / AWG	
Wire stripping length	mm / inches	31 mm max. / 1.22"
Recommended torque	Nm / lb.in	0.4-0.6 Nm / *3.5-5.3 lb.in*
Voltage	EN 50019 / EN 50020	EExe : 550 V EExi : 90 V
Current	EN 50019 / EN 50020	
ATEX marking		Ex I M2 / M1 Ex II 2G / 1G
		EEx e/i I / II
ATEX certificate		LCIE 02 ATEX 0025U

Accessories



		Type	P/N
1 End section	grey ■	FEM6 V0	th. 2.8 ■ 1SNA **146 259** R1500
2 Shield connector		CBM5	th. 0.5 1SNA **178 745** R1400
		CBM6	th. 0.8 1SNA **178 746** R1500

R See markers section RC65 - RC610

Other accessories see section accessories

Thermocouple terminal blocks

ABB Entrelec's MTC 6.Ex thermocouple terminal block provides an interface for connecting thermocouple wire with virtually no loss of signal integrity. The interface design ensures positive wire continuity and allows selection and inventory of one terminal block for all thermocouple material.

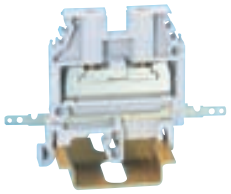


Figure 1 : MTC 6.Ex with shield connector

The thermocouple principle is based on the reaction of different metals to temperature. When thermocouple wires are terminated or connected, the "metal balance" must be maintained. The introduction of a foreign material (such as copper) results in loss of signal strength and integrity.

When running extended or intermittent lengths of thermocouple wire, to a measurement instrument, two solutions are available :

1. When signals are carried over a long distance, a thermocouple transmitter is required. The thermocouple signal, in millivolts (mV), is converted to a milliampere (mA) signal (i.e. 4-20 mA) for ease of transmission.
2. When thermocouple wire is of insufficient length, termination and interconnection, using terminal blocks, will extend its length.

Universal terminal block

Other thermocouple terminal blocks are available with hardware (screws, clamps and connecting bar) which match the thermocouple

material being used. This requires inventory of many different terminal block types.

ABB Entrelec's MTC 6.Ex terminal block adapts to all thermocouple material. This "neutral" method of connection limits the introduction of foreign materials to an insignificant level. The thermocouple wire insulation is stripped (31 mm maximum) and the bare wires are superimposed on one another. The thermocouple wires are in contact over their complete 31 mm length and tightened at two points by round tip screws (see figure 2).

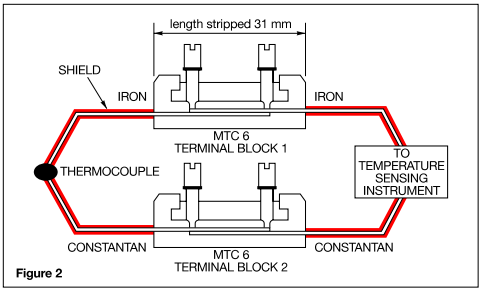


Figure 2

The screws, made of plated brass, have only a mechanical function, that of holding the wires together with a point contact. Thus, the pressure points are not relevant in the connection environment. One thermocouple lead connects through one terminal block.

The MTC 6 requires only 6 mm of space, allowing 50 terminals per foot of rail.

Thermocouple shield wire connector bar

The MTC 6.Ex can be field of factory equipped with a shield connector bar (see figure 1). This bar, made of treated brass, mounts in the lower part of the terminal block. It ensures the continuity of the thermocouple wire shield through the terminal block or to ground with no additional spacing.