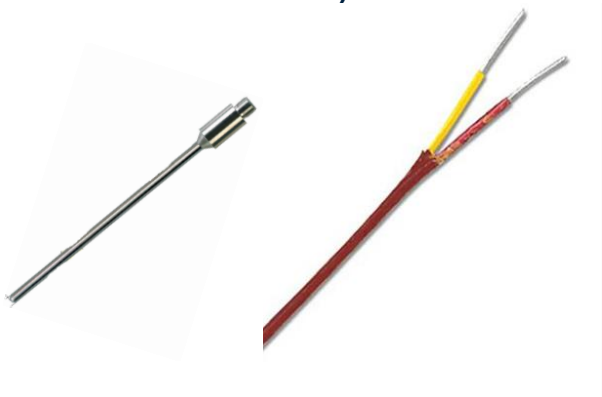


RTD/TC – Modbus Smart Sensor Connectivity Kit

What is a Thermocouple

- Two different metals, connected together, generate an electromagnetic force (voltage) that varies with temperature
- Requires multi-term polynomial linearization and 'cold junction compensation' where 'thermocouple' wires are connected to measuring device
- Probes available with integrated M12 connector or flying leads (will require M12 S-M-FM connector)

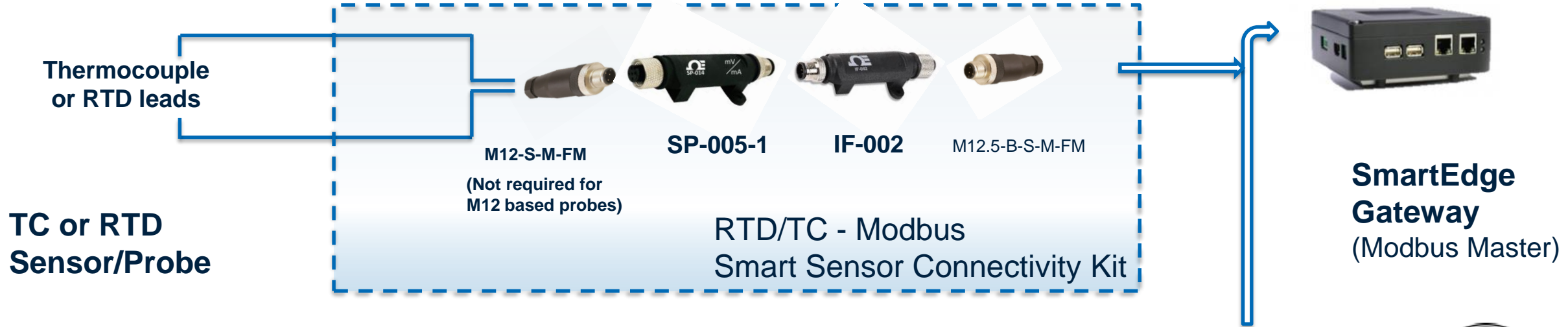


What is an RTD

- Resistance of metal varies depending on temperature
- Requires multi-term polynomial linearization
- Platinum widely used due to consistency
- Typically provided as probe
- Probes available with integrated M12 connector or flying leads (will require M12 S-M-FM connector)



RTD/TC– Wireless Smart Sensor Connectivity Kit



Pin	TC	RTD		
		4 wire	3 wire	2 wire
1	TC1 -ve	Source -		
2	TC2 +ve	Sense+	Src/Sns +	Src/Sns +
3	TC2 -ve	Sense -	Sense -	
4	TC1 +ve	Source -	Source -	Src/Sns -

- **M12-S-M-FM** provides 4 pin Screw Terminal connector (Not required for M12 based probes)
- **SP-005-1** converts TC or RTD signals to Smart Sensor digital interface
- **IF-002** → Smart Sensor to Modbus conversion
- **M12.5-B-S-M-FM** → 5 pin Screw Terminal connector (B type)
- **SP-005 supports up to 2 Thermocouple Sensors or 1 RTD Sensor**
- **IF-002 Supports up to 32 devices on RS485 Serial Channel**

Up to 32 RS485 Devices



Pin	Connection
1	Bus Power (5-36 Vdc)
2	RS485 Data + (A')
3	GND
4	RS485 Data - (B')
5	SHIELD

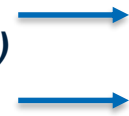
RTD/TC-Configuration

Type ← *Type of Sensor* → Type

RTD
Input0

Sensor Input0	
<div style="font-size: 10px;"> Sensor </div>	
Name	Input0
Measurement Type	RTD
Advanced Scaling	<input type="checkbox"/>
<div style="font-size: 10px;"> Device Range/Type </div>	
Range	100 / 385
<div style="font-size: 10px;"> Sensor Settings </div>	
WIRE	4 WIRE

Measurement Range (RTD type and resistance)
Hardware configuration



Type	Range	Accuracy
385, 4 Wire	-200°C to 850°C	0.3°C
385, 3 Wire	-200°C to 850°C	0.3°C
385, 2 Wire	-200°C to 850°C	0.6°C
392, 4 Wire	-200°C to 660°C	0.3°C
392, 3 Wire	-200°C to 660°C	0.3°C
392, 2 Wire	-200°C to 660°C	0.6°C
3916, 4 Wire	-200°C to 660°C	0.3°C
3916, 3 Wire	-200°C to 660°C	0.3°C
3916, 2 Wire	-200°C to 660°C	0.6°C

TC
Input0

Sensor Input0	
<div style="font-size: 10px;"> Sensor </div>	
Name	Input0
Measurement Type	TC
Advanced Scaling	<input type="checkbox"/>
<div style="font-size: 10px;"> Device Range/Type </div>	
Range	K
<div style="font-size: 10px;"> Sensor Settings </div>	
Open Detect	ENABLE

Measurement Range (TC type)
Hardware configuration



Type	Range	Accuracy
J	-210°C to 1200°C	0.4°C
K	160°C to 1372°C	0.4°C
T	190°C to 400°C	0.4°C
E	-220°C to 1000°C	0.4°C
N	-100°C to 1300°C	0.4°C
R	40°C to 1768°C	0.5°C
S	100°C to 1768°C	0.5°C
B	640°C to 1820°C	0.5°C
C	0°C to 2320°C	0.4°C