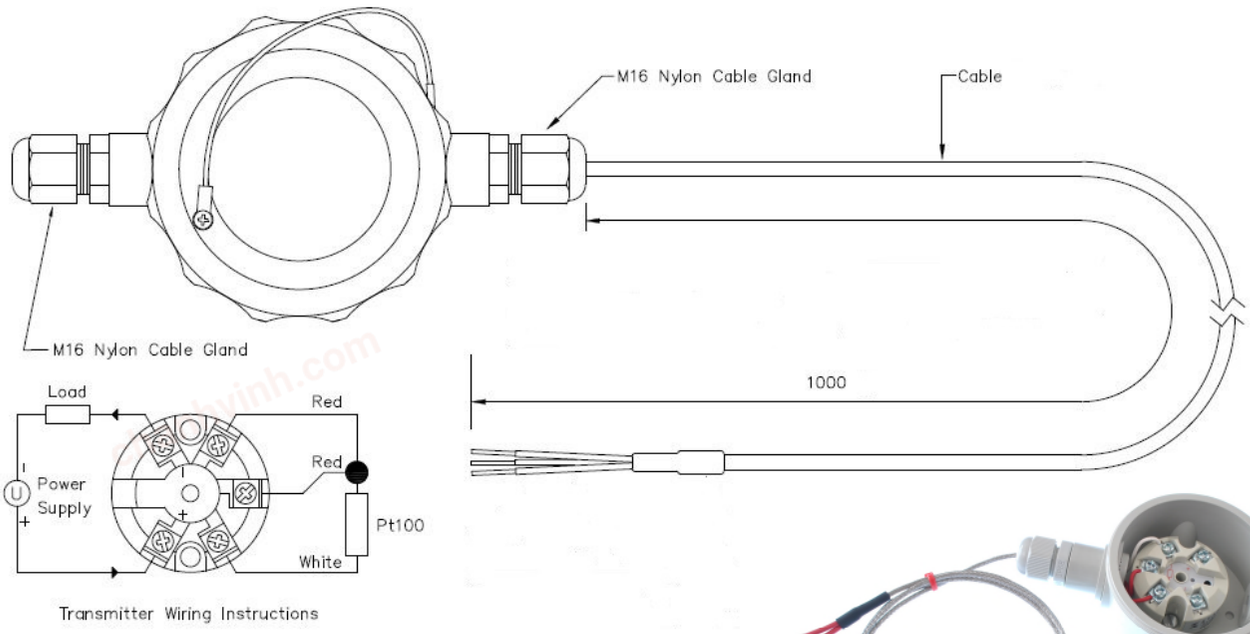
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ENGLISH

Datasheet

4-20mA remote wall mounted housing, Platinum Resistance Pt100 input with 1 metre lead

-50°C to +150°C or 0°C to +400°C ranges available





- Compatible with Pt100 platinum resistance thermometers
- Surface Mounting for remote installation
- 4-20 mA output
- Entry Threads M16
- Range -50°C to +150°C or 0°C to +400°C (either can be re-ranged if desired)
- 1 metre of 7/0.2mm Cable

Housing moulded in general purpose ABS, the external fixing points provide a simple and rapid means of mounting sensors directly onto ducts, dispensing with the need for separate mounting plates.

Specifications

Head:	High Impact ABS Plastic Construction
Transmitter:	The RTD in-head mounted temperature transmitter connects to any standard pt100 resistance sensor and converts the linearised temperature to a (4 to 20) mA signal. *(transmitter device has an ambient range of -40°C to +85°C)*
Cable:	1 metre of 7/0.2mm Cable
Cable Termination:	Bare tails

Type	Cable Glands	Cable Length (mm)	Cable Insulation	Transmitter Range	RS order code
Pt100	M16	1000	PFA Teflon	-50°C to +150°C	**872-2758**
Pt100	M16	1000	F/G + SSOB	0°C to + 400°C	**872-2751**

RS198/0816

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TRANSMITTER SPECIFICATION @ 20 °C

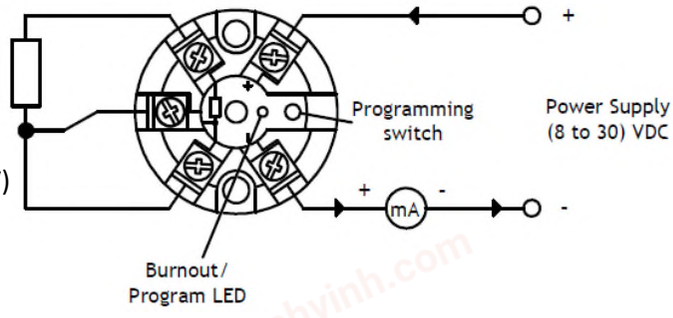
What is the difference between a RTD and PRT sensor?
Nothing. RTD means resistance thermometer detector (the sensing element) and PRT means Platinum resistance thermometer (the whole assembly) i.e. a PRT uses a RTD.

INPUT

Sensor Type	PT100 100R @ 0°C 2 or 3 Wire
Sensor Range	(-200 to +850) °C (18 to 390) Ω
Sensor Connection	Screw terminal
Minimum span (*1)	25°C
Linearisation	BS EN 60751(IEC 751) standard /JISC 1604
Measurement Accuracy (*2)	0.2°C ± 0.05% of Reading
Thermal Drift	0.0025 % / °C
Excitation current	<200 uA
Lead Resistance effect	0.002 °C / Ohm
Maximum lead Resistance	20 Ohms per leg

OUTPUT

Output	Type 2 wire (4 to 20) mA current loop
Output range	(4.0 to 20.0) mA
Output Connection	Screw Terminal
Maximum output	21.5mA (in high burnout condition)
Minimum output	<3.9 mA (in low burnout condition)
Accuracy	(mA output /2000) or 5 uA (Whichever is the greater)
Loop Voltage effect	0.2 uA / V
Thermal drift	1 uA / °C
Maximum output load	[(Vsupply-10)/21]K Ohms (Example: 700 Ohms @ 24V)



GENERAL SPECIFICATION

Update time	500 ms
Response Time	1 second
Start-up time	4 seconds (I out < 4 mA during start up)
Warm-up time	1 minutes to full accuracy
Power Supply	(10 to 30) Volts dc

PUSH BUTTON CONFIGURATION

A single push button and LED indicator allows the user to navigate a three menus, allowing configuration of the transmitter. The menus are as follow: -
Menu 1 Configure range.
Menu 2 Configure burnout direction.
Menu 3 Trim output current @ either 4 mA or 20 mA

ENVIRONMENTAL

Ambient operating range	(-40 to +85) °C
Ambient storage temperature	(-50 to +90) °C
Ambient humidity range	(10 to 90) % RH non condensing

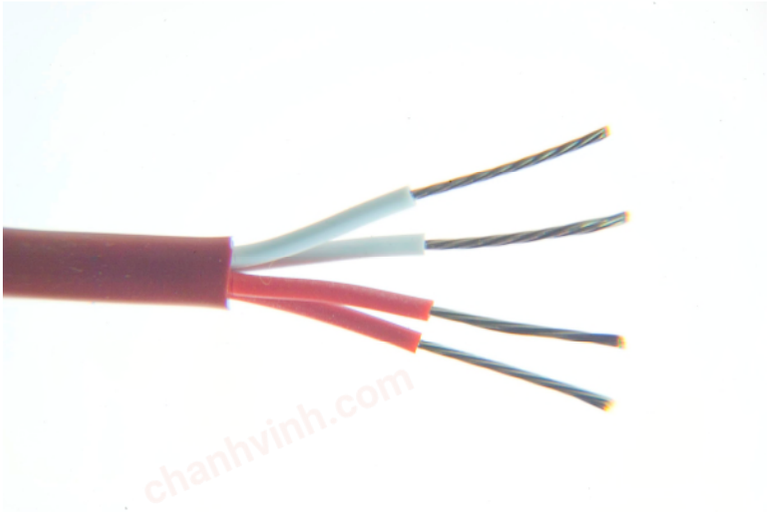
Note *1 Any span may be selected; full accuracy is only guaranteed for spans greater than the minimum recommended
Note *2 Basic measurement accuracy includes the effects of calibration, linearisation and repeatability

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Need RTD Cable or Pt100/Pt1000 Detectors?

RTD Extension Cable – 4 core (10 or 25 metre reel)

Platinum Resistance Thermometer Extension Cable – Silicone Rubber Insulated



- Silicone rubber insulated cable for extending Platinum Resistance Thermometers
- Can be used to extend up to 4 wire RTD configurations
- Commonly used with Pt100Ω thermometers but suitable with other types Pt130/500/1000Ω etc.
- 4 core silicone rubber insulated 7/0.2mm tin plated copper conductors, twisted together with silicone rubber outer jacket
- Cores colour coded 2 x Red / 2 x White to IEC-751
- Good electrical and mechanical properties, highly flexible, resistant to oils, acids and other adverse fluids
- Good heat resistance up to 200°C
- Insulation rating -40°C to 200°C
- Supplied in 10 or 25 metre reel lengths

Type	**Conductors**	**mm²**	**Cores** (4 core)	**Jacket**	**Reel Length**	**Allied Code**	**RS order Code**
RTD	7/0.2mm	0.219	2x Red / 2 x White	Brown	10 metres	70657147	**827-5823**
RTD	7/0.2mm	0.219	2x Red / 2 x White	Brown	25 metres	70644361	**455-4242**

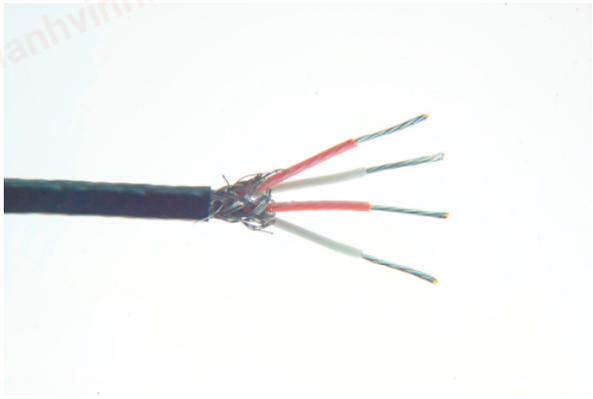
Overall sheath Dimension (approx.)

4.0mmØ

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RTD Extension Cable – 4 & 6 core PFA

Platinum Resistance Thermometer Extension Cable, PFA insulated & screened



4 core (cores: 2 x red / 2 white)



6 core (cores: 4 x red / 2 x white)

- PFA insulated cable for extending Platinum Resistance Thermometers
- High temperature to 260°C, extruded PFA Teflon® construction
- Commonly used for Pt100Ω thermometers, also suitable with other types such as Pt130, Pt500 & Pt1000Ω
- 4 & 6 core available – to extend 2, 3 or 4 wire RTD configurations, the 6 core can be used to extend 2 x 3 wire duplex (dual element) configurations
- Construction – PFA insulated 7/0.2mm tin plated copper conductors, twisted cores with nylon cord, tin plated copper braided screen with PFA insulated outer jacket
- Cores colour coded Red & White in accordance with IEC-751, black outer jacket
- Good mechanical strength and flexibility, resistant to oils, acids and other adverse fluids
- Insulation rating -75°C to 260°C
- See below for available reel lengths

Type	Conductors	mm²	Cores	Screen	Jacket	Reel Length	Allied Code	RS order code
RTD	7/0.2mm	0.219	x 4	Yes	Black	10 metres	70646175	611-8078
RTD	7/0.2mm	0.219	x 4	Yes	Black	25 metres	70646176	611-8090
RTD	7/0.2mm	0.219	x 4	Yes	Black	50 metres	70657148	827-5827
RTD	7/0.2mm	0.219	x 4	Yes	Black	100 metres	70657150	827-5836
RTD	7/0.2mm	0.219	x 6	Yes	Black	25 metres	70646177	611-8107
RTD	7/0.2mm	0.219	x 6	Yes	Black	50 metres	70657151	827-5839

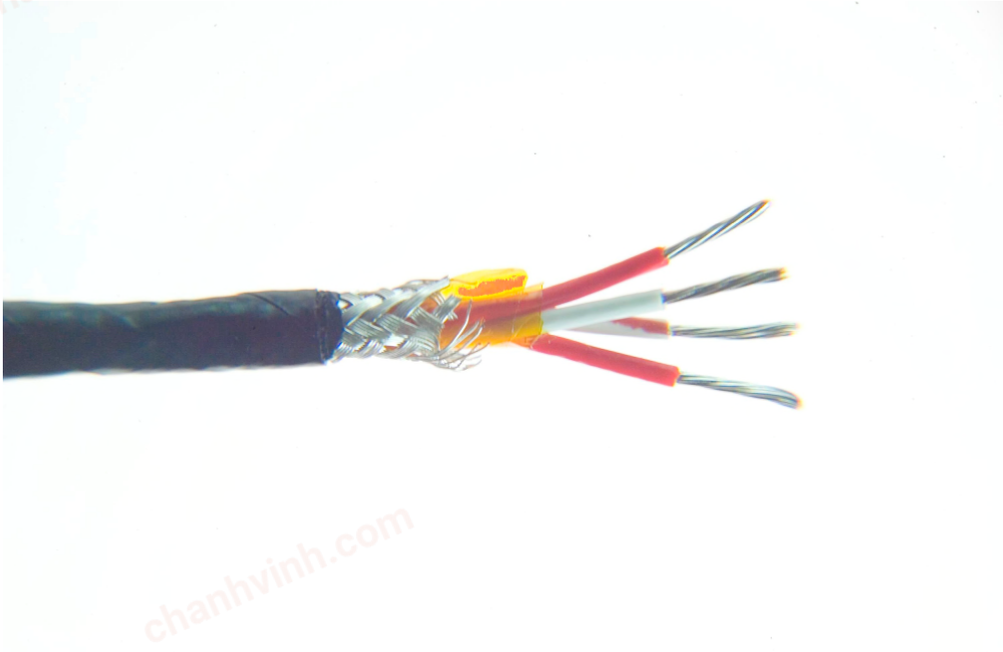
Overall sheath Dimension (approx.)

4 core: 3.2mmØ
6 core: 3.8mmØ

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RTD Extension Cable – 4 core PTFE (10 & 25 reel lengths)

Platinum Resistance Thermometer Extension Cable, PTFE insulated & screened



- PTFE insulated cable for extending Platinum Resistance Thermometers
- High temperature to 260°C, wrapped PTFE tape construction
- Can be used to extend 2, 3 or 4 wire RTD configurations
- Commonly used for Pt100Ω thermometers, also suitable with other types such as Pt130, Pt500 & Pt1000Ω
- 4 core PTFE insulated 7/0.2mm silver plated copper conductors, twisted cores, Mylar tape, silver plated copper braided screen with PTFE insulated outer jacket
- Cores colour coded 2 x Red / 2 x White to IEC-751 + black outer jacket
- Good mechanical strength and flexibility, resistant to oils, acids and other adverse fluids, steam, gasses etc.
- Insulation rating -75°C to 260°C
- Supplied in 10, & 25 metre reel lengths

Type	**Conductors**	**mm²**	**Cores** (4 core)	**Screen**	**Jacket**	**Reel Length**	**Allied Code**	**RS order code**
RTD	7/0.2mm	0.219	2x Red/2x White	Yes	Black	10 metres	70644773	**492-9775**
RTD	7/0.2mm	0.219	2x Red/2x White	Yes	Black	25 metres	70642885	**290-4976**

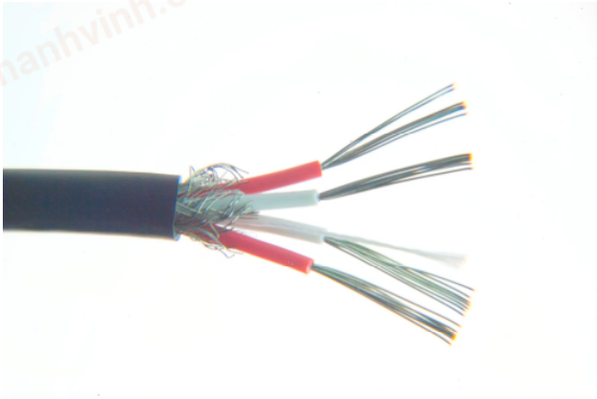
Overall sheath Dimension (approx.)

3.5mmØ

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RTD Extension Cable – 4 core PVC (10, 25 & 50 reel lengths)

Platinum Resistance Thermometer Extension Cable, PVC insulated & screened



- PVC insulated cable for extending Platinum Resistance Thermometers
- Can be used to extend 2, 3 or 4 wire RTD configurations
- Commonly used for Pt100Ω thermometers but also suitable with other types such as Pt130, Pt500 & Pt1000Ω
- 4 core PVC insulated 7/0.2mm tin plated copper conductors, twisted cores, polyester tape & nylon cord, tin plated copper braided screen with PVC insulated outer jacket
- Cores colour coded 2 x Red / 2 x White to IEC-751 with black outer jacket
- Heat resistant PVC to 105°C
- Good for general purpose cable, highly flexible & waterproof
- Insulation rating -10°C to 105°C
- Supplied in 10, 25 & 50 metre reel lengths

Type	**Conductors**	**mm²**	**Cores** (4 core)	**Screen**	**Jacket**	**Reel Length**	**Allied Code**	**RS order code**
RTD	7/0.2mm	0.219	2x Red/2x White	Yes	Black	10 metres	70644772	492-9753
RTD	7/0.2mm	0.219	2x Red/2x White	Yes	Black	25 metres	70642884	290-4954
RTD	7/0.2mm	0.219	2x Red/2x White	Yes	Black	50 metres	70646179	611-8129

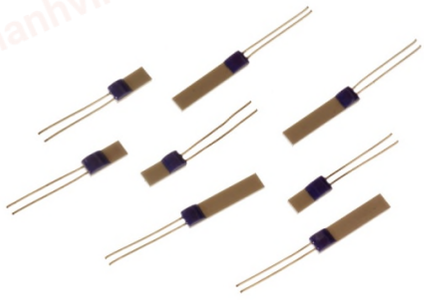
Overall sheath Dimension (approx.)

4.4mmØ

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Platinum Resistance Pt100 & Pt1000 Thin Film Detectors Platinum

Sensing Resistors – Thin Film (Pt100 & Pt1000 Ohm)



Pt100 Elements, Thin Film (100 Ohm)

- Pt100 elements to IEC751 Class A, B and 1/3DIN
- For use from –50°C to +500°C
- Thin film construction
- Suitable for surface & immersion applications where protected
- Vibration resistant

Specifications:

Sensor type:	Pt100 (100 Ohms @ 0°C)
Construction:	Thin film, 10mm tails
Temperature range:	-50°C to +500°C
Ice point resistance:	100Ω
Fundamental interval (0°C to 100°C):	38.5Ω (nominal)
Self-heating:	<0.5°C/mW
Thermal response:	0.1s
Stability:	±0.05%

Resistance	**Dimensions** (width x length)	**Tolerance Class**	**Allied code**	**RS order code**
Pt100	2 x 5.0mm	Class A	70646146	**611-7788**
Pt100	2 x 5.0mm	Class B	70646148	**611-7801**
Pt100	2 x 5.0mm	Class B	70642888	**290-5070** (Packet of 5)
Pt100	2 x 10mm	Class A	70643577	**362-9799**
Pt100	2 x 10mm	Class B	70641762	**237-1607**
Pt100	2.0 x 10mm	1/3DIN	70643578	**362-9812**
Pt100	2.0 x 2.3mm	Class A	70643579	**362-9834**
Pt100	2.0 x 2.3mm	Class B	70643580	**362-9840**
Pt100	2.0 x 2.3mm	1/3DIN	70643581	**362-9856**

Pt100 Elements (continued)

Resistance	**Dimensions** (width x length)	**Tolerance Class**	**Allied code**	**RS order code**
Pt100	1.2 x 1.6mm	Class A	70646834	**666-7362**
Pt100	1.2 x 1.6mm	Class B	70646831	**666-7353**

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Pt100	1.0 x 3.0mm	Class A	70646833	**666-7359**
Pt100	1.0 x 3.0mm	Class B	70646832	**666-7356**
Pt100	2.0 x 5.0mm	1/3 Din	70656467	**814-0162**
Pt100	1.2 x 4.0mm	Class B	70656468	**814-0165**
Pt100	1.2 x 4.0mm	Class A	70656469	**814-0169**

Pt1000 Elements, Thin Film (1000 Ohm)

- Pt1000 elements to IEC 751 Class A and B
- For use from –50°C to +500°C
- Thin film construction
- Suitable for surface & immersion applications where protected
- Vibration resistant

Specifications:

Sensor type:	Pt1000 (1000 Ohms @0°C)
Construction:	Thin film, 10mm tails
Temperature range:	-50°C to +500°C
Ice point resistance:	1000Ω
Fundamental interval (0°C to 100°C):	385Ω (nominal)
Self-heating:	<0.5oC/mW
Thermal response:	0.1s
Stability:	±0.05%

Resistance	**Dimensions** (width x length)	**Tolerance Class**	**Allied code**	**RS order code**
Pt1000	2.0 x 10.0mm	Class A	70643582	**362-9907**
Pt1000	2.0 x 10.0mm	Class B	70643583	**362-9913**
Pt1000	2.0 x 10.0mm	1/3 Din	70656472	**814-0178**
Pt1000	1.0 x 3.0mm	Class B	70656470	**814-0171**
Pt1000	1.25 x 1.7mm	Class B	70656471	**814-0175**

Resistance Pt100 Wire-Wound Detector Elements

Pt100 platinum resistance thermometer elements in a choice of sizes – single & dual element



- Pt100 elements to IEC 60751 Class A or B
- 100Ω Ohms @ 0°C
- Single or dual element
- Platinum coil wire-wound construction sealed inside a high purity alumina ceramic body
- Optimum performance & stability
- Temperature range –200°C to +650°C

Specifications:

Sensor type:	Pt100 (100 Ohms @ 0°C)
Construction:	Wire-Wound, 10mm tails
Temperature range:	-200°C to +650°C
Ice point resistance:	100Ω
Fundamental interval (0°C to 100°C):	38.5Ω (nominal)
Self-heating:	0.02 to 0.3°C/mW
Thermal response:	<0.4s (secs. to 63% of final value – in water @ 1m/s)
Measuring current:	1mA
Tolerance Class:	In accordance with IEC 60751 W0.15 (Class A) -100°C to +450°C W0.3 (Class B) -196°C to +660°C

Continued:

Single element:

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Resistance	Tolerance Class	Diameter (‘D’)	Length (‘L’)	Allied code	RS order code
Pt100	Class B	1.5mm	8mm	70646153	**611-7851**
Pt100	Class A	1.5mm	8mm	70646155	**611-7873**
Pt100	Class B	1.5mm	15mm	70646154	**611-7867**
Pt100	Class A	1.5mm	15mm	70646151	**611-7839**
Pt100	Class B	2.8mm	15mm	70646150	**611-7823**
Pt100	Class A	2.8mm	15mm	70646152	**611-7845**
Pt100	Class B	2.8mm	25mm	70646147	**611-7794**
Pt100	Class A	2.8mm	25mm	70646149	**611-7817**

Dual element:

Pt100 (x2)	Class A	1.5mm	15mm	70643873	**397-1595**

