STOCK IT
RE-WORKABLE MINERAL INSULATED PROBES

RTD
-200 to + 600 deg C

TC
-200 to + 1350 deg C

STOCK LENGTHS
12"  18"  24"  36"  
305 mm  450 mm  610 mm  715 mm

DESIGNERS, MANUFACTURERS and
SUPPLIERS OF -
Mineral Insulated Thermocouples
Mineral Insulated RTD's
4-20 mA Head Mounted Transmitters
Solid Drilled Thermowells
Fabricated Thermowells
Resistance Thermometer Assemblies
Multi-Point Assemblies
Tube Skin Thermocouples
Bi-Metals
Rigid & Remote Reading Thermometers
Transmitters with Integral Indicators

COMPONENTS for PRODUCTION of
TEMPERATURE PRODUCTS
Mineral Insulated Metal Sheathed Thermocouple Cable
Mineral Insulated Metal Sheathed Cables with Nickel & Copper Conductors for Resistance Thermometers
T/C Compensating & Extension Cables
Connection Heads
Terminal Blocks
Pressure Entry & Cable Glands
Plugs & Sockets & Panels

PALMER WAHL QUALITY ASSURANCE INCLUDES
ISO 9001 : 2008 Certified
NIST Traceable Calibration
USD Approved
ATEX & FM Approvals
Material Certification
Full QA Manuals
Pressure Testing
Radiography
Ultrasonsics
Nace Certification
Hardness Testing
Heat Treatment
Welders Qualifications
Thermowell Stress Calculations

STOCK IT
RE-WORKABLE MINERAL INSULATED PROBES

RTD
NI or COPPER CONDUCTORS

TC WIREs

GROUNDED

EXPOSED

IT'S EASY'

STOCK LENGTHS
12"  18"  24"  36"  
305 mm  450 mm  610 mm  715 mm

PALMER WAHL QUALITY ASSURANCE INCLUDES
ISO 9001 : 2008 Certified
NIST Traceable Calibration
USD Approved
ATEX & FM Approvals
Material Certification
Full QA Manuals
Pressure Testing
Radiography
Ultrasonsics
Nace Certification
Hardness Testing
Heat Treatment
Welders Qualifications
Thermowell Stress Calculations
Palmer Wahl IP66 Aluminium Connection Head
Screwed & Gasketed Cover with Captive Chain

Ceramic Terminal Block

1/2" NPT Cable Entry

1/2" NB Sch 80 St Steel Nipple

St Steel Strapping SITE SUPPLIED only required when No Weld Pad

1/4" Ø St Steel Single Type K Mineral Insulated Thermocouple with Insulated Hot Junction
Hot end to protrude by 1/4" to allow positive spring loaded contact with pipe after installation

Pipe Ø No weld Block

Pipe Ø With Weld Block

1/2" square 316 St Steel Weld Pad

Unit may be supplied with or without Weld Pad
1/4" Ø St Steel Single Type K
Mineral Insulated Thermocouple with Insulated Hot Junction
Hot end to protrude by 1/4" to allow positive spring loaded contact with pipe after installation

1/2" Square 316 St Steel Weld Pad

3/4" Angle

6" [152.4]

1/2" NB 316 St Steel Nipple & Union for separation & orientation

1 1/4" [31.75]

72" [1828]

1/2" NB 316 St Steel Nipple & Union

DIGI-STEM Thermometer
Pipe Surface Temperature
Resistance Thermometer Assembly

1/4" Ø St Steel Mineral Insulated
Resistance Thermometer Inset
Housing a Pt 100 ohm @ 0°C Spot Type Element
Hot end to protrude by 1/4" to allow positive
spring loaded contact with pipe after installation

1/2" NB 316 St Steel Nipple & Union
for separation & orientation

1/4" UNF
5/16" Ø Hole

1/4" UFF St Steel 'U' Bolt
c/w Nuts, Bolts & Washers

1/16" [1.5]
1/4" UNF

1" x 3/4" St Steel Clamp Bar

DIGI-STEM Thermometer

83.1°F

DIGI-STEM THERMOMETER
CALIBRATION

MADE IN USA

PW-1030

Pipe Surface Temperature
Resistance Thermometer Assembly

Lynn Blount
5.16.16
Plastic Nylon Weatherproof Connection Head with Screwed Gasketed Cover and Captive Chain

Bendable Mineral Insulated Cable

1/2" NPT St Steel Fitting

Ceramic Terminal Block

1/2" Wide x 1/16"
316 St steel Plate

1/4" Ø St Steel Sheathed
Mineral Insulated Resistance Thermometer Inset housing a
100 ohm @ 0°C, Class A Resistance Element
Temperature Range : 0 - 350°C
Connection System : 3 Wire

View on A
FOR USE UP TO 900°F
DEVELOPED FOR U.S. SPACE PROGRAM
AUTOMATIC ARTICULATION OF TIP FOR UNIFORM CONTACT
USEFUL IN BLIND RECESSES MADE BY FEEL INSTEAD OF SIGHT
ACCURACY  
+/- 0.2°F @ 0°C  
+/- 0.5% OF READING THEREAFTER
4 FEET RETRACTABLE CABLE
RESPONSE TIME : 2 SECONDS
RESPONSE TIME LEGEND to 63%
TESTED ON FLAT SURFACE @ 400°F

SENSOR : Pt 100 ohm @ 0°C
CONNECTION SYSTEM : 4 WIRE

4 WIRE
VARIOUS CONNECTION OPTIONS AVAILABLE

90° ANGLED TIP
45° ANGLED TIP
STRAIGHT TIP
Duplex Resistance Thermometer

Assembly

PW-1074

304 St Steel Flexible Armour Conduit 3/16" i.d. with Outer black PVC Cover

Length L = 25', 50' and 75'

Cable Code A
Internal Wires
6 Wires Individual 24 Awg Stranded Copper (2 Red + 1 White per winding) with PVC Insulation (Temp Range: -55°C to 105°C)

OR

Cable Code B
6 Core Stranded 24 AWG Tinned Copper (2 Red + 1 White per Winding) Teflon Insulated with Teflon overall (Temp Range: -55°C to 250°C)

To Order Specify: PW-1074 / 25, 50 or 75 feet / Cable Code A or B
Resistance Thermometer Sensor Comprising:
- 3/16" Ø 316 St Steel Sheathed Swaged
- Mineral Insulated Resistance Thermometer Inset housing a 100 ohm @ 0°C Resistance Element
- Temperature Range: 0 - 350 °C
- 4 Wire Connection System
- Accuracy ± 0.1°C @ 0°C

Option B:
- Special Solid Transition and Crimp with Internal Tube Support
- 3/16" Ø St Steel Tube
- Tack Weld
- Epoxy Cable Fix

Option A:
- St Steel Solid Transition with Threaded End
- Screwed on Conduit Connector
- Rubber Wire Protector

Sensor Length L - 4 1/4"

36" St Steel Conduit Cable Protection
36" of 3/16" i.d. St Steel Flexible Conduit Cable Protection

1/4" NPT x 3/16" o.d. St Steel Compression Fitting with St Steel Ferrule (Supplied Fitted but Loose)

24 AWG Flexible Silver Plated Copper Teflon Insulated Tails

Palmer Wahl Part # PW 1089 or PW 1089 option A or B
Client Part # WB 19645/002
- UP TO 20 POINTS AVAILABLE
- INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT OPERATION
- UNION ORIENTATION FOR TOTAL TUBE BUNDLE ASSEMBLY REMOVAL
- SAFETY SEAL CHAMBER
- FLEXIBLE EXTENSION TO JUNCTION BOX WITH CONTINUOUS MINERAL INSULATED THERMOCOUPLE
- 1/8" OR 3mm Ø THERMOCOUPLES
- THERMOCOUPLE TIP TOUCHES INSIDE WALL OF THERMOWELL
- VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING
- LENGTHS UP TO 10 meters
- UP TO 20 POINTS AVAILABLE
- INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT OPERATION
- SAFETY SEAL CHAMBER
- FLEXIBLE EXTENSION TO JUNCTION BOX WITH CONTINUOUS MINERAL INSULATED THERMOCOUPLE
- 1/8" OR 3mm Ø THERMOCOUPLES
- THERMOCOUPLE TOUCHES BOTTOM OF SIDE WALL WELD BLOCK FOR GUARANTEED THERMAL CONTACT & FAST RESPONSE
- VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING
- LENGTHS UP TO 10 meters
- ALSO AVAILABLE WITH FAST RESPONSE MINERAL INSULATED RESISTANCE THERMOMETER PROBES FOR HIGHER ACCURACY

ENLARGED VIEW
Thermocouple Tip
• UP TO 20 POINTS AVAILABLE
• INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT OPERATION
• SAFETY SEAL CHAMBER
• FIXED RIGID JUNCTION BOX CONNECTION
• 1/8" OR 3mm Ø THERMOCOUPLES
• THERMOCOUPLE TOUCHES BOTTOM OF SIDE WALL WELD BLOCK FOR GUARANTEED THERMAL CONTACT & FAST RESPONSE
• VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING
• LENGTHS UP TO 10 meters
• ALSO AVAILABLE WITH FAST RESPONSE MINERAL INSULATED RESISTANCE THERMOMETER PROBES FOR HIGHER ACCURACY
- UP TO 20 POINTS AVAILABLE
- INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT SHUTDOWN ONLY
- SAFETY SEAL CHAMBER
- 1/8" OR 3mm Ø MINERAL INSULATED THERMOCOUPLE
- THERMOCOUPLE PROTRUDES INTO PRODUCT FOR FASTEST POSSIBLE RESPONSE
- VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING
- LENGTHS UP TO 10 meters
- UP TO 20 POINTS AVAILABLE
- INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT SHUTDOWN ONLY
- UNION FOR TOTAL THERMOCOUPLE BUNDLE REMOVAL & ORIENTATION
- SAFETY SEAL CHAMBER
- FLEXIBLE EXTENSION TO JUNCTION BOX WITH CONTINUOUS MINERAL INSULATED THERMOCOUPLE
- 1/8" OR 3mm Ø THERMOCOUPLES
- THERMOCOUPLE SIDE TOUCHES INSIDE WALL OF THERMOWELL
- VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING
- CONSIDERATION TO UTILIZE A GENERALLY SMALLER THERMOWELL WITH INSIDE DIAMETER TO SUIT THERMOCOUPLE BUNDLE OUTSIDE DIAMETER
- WHERE THERMAL RESPONSE TIME NOT CRITICAL, RESISTANCE THERMOMETERS MAY BE FITTED
- DUMMY THERMOCOUPLE CABLES MAY BE PROVIDED FROM HOT JUNCTION TO THERMOWELL TIP TO ASSIST CENTRALISATION
- LENGTHS UP TO 10 meters
- **UP TO 20 POINTS AVAILABLE**
- **INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT OPERATION**
- **SAFETY SEAL CHAMBER**
- **FIXED RIGID JUNCTION BOX CONNECTION**
- **1/8" OR 3mm Ø THERMOCOUPLES**
- **THERMOCOUPLE TOUCHES INSIDE OF THERMOWELL**
- **VARIABLE MECHANICAL THERMOWELL SIZES, MATERIALS & MOUNTING**
- **LENGTHS UP TO 10 meters**
• UP TO 20 POINTS AVAILABLE
• INDIVIDUAL INTERCHANGEABLE THERMOCOUPLES DURING PLANT SHUTDOWN ONLY
• UNION FOR TOTAL THERMOCOUPLE BUNDLE REMOVAL & ORIENTATION
• SAFETY SEAL CHAMBER
• FLEXIBLE EXTENSION TO JUNCTION BOX WITH CONTINUOUS MINERAL INSULATED THERMOCOUPLE
• 1/8" OR 3mm Ø THERMOCOUPLES
• THERMOCOUPLE SIDE TOUCHES INSIDE WALL OF THERMOWELL
• THERMOCOUPLES MAY BE FITTED RADially
  (Refer to Sheet 2)
• ALL LENGTHS MAY BE SUPPLIED
- TYPICAL RADIAL REACTOR POSITIONING
- MAY ALSO BE PROVIDED FOR THERMOCOUPLES TO INSERT INTO INDIVIDUAL VERTICAL INDIVIDUAL REACTOR TUBES (Refer to Sheet 3)
- HOT END THERMOCOUPLE TIP MAY BE PROVIDED WITH WELDED 1/16" Ø ST STEEL PULL WIRE TO ASSIST FITTING INTO VERTICAL REACTOR TUBE
- VARIOUS REACTOR TUBE CENTRALIZING FINS ARE AVAILABLE
T Handle RTD Probe

- External Yellow PVC Heat Shrink: Specify YHS
- External Black PVC Heat Shrink: Specify HS

- Weld
- 5" Length L1
- 3/4" Ø
- 2" Length L2
- Weld
- 1/2" Ø
- 3/8" Ø

- Epoxy Sealed
- Flying Leads: Specify FL
- Standard Connector: Specify SC

- Superior 1/8" Ø Internal Mineral Insulated Resistance Thermometer
- Sensor Basic Resistance:
  - 100 ohms @ 0°C
  - 138.5 ohms @ 100 °C
- TC 0.00385 / Class A

- Specify Probe Type: A B C D or E
  - 1/2" Ø
  - 3/8" Ø
  - 5/16" Ø
  - 1/4" Ø
  - 1/8" Ø

- External Black PVC Heat Shrink: Specify PW-1065 with Pointed Tip
1/2" Ø St Steel sheathed Interchangeable Mineral Insulated Resistance Thermometered Inset housing a Single 100 ohm @ 0°C, Class A Resistance Element Temperature Range: 0 - 350°C Connection System: 3 Wire

3/16" I.D. St Steel Conduit Length L2 as required

St Steel Transition Epoxy Seal Sensor and Crimp Sensor

1/4" NPT St Steel Compression Fitting

Crimp

Crimp

St Steel Transition Epoxy Seal Sensor and Crimp Sensor

1/2" NPT St Steel Compression Fitting

Weld

3/16" Tube

1" Ø Handle 316 Solid St Steel

1/4" Ø St Steel sheathed Interchangeable

Model S No.

Made in USA

Lynn Blount 9.6.16

PW-1057

DST 500 RTD Handle Probe with Interchangeable Sensor

DIGI-STEM THERMOMETER CALIBRATION
1/2"Ø Spherical Domed Socket Weld Collar

1/2", 3/4" or 1" NB

1/2" BSP Pl 1/2" NPT

1 1/4" - 18

Tri-clamp Fitting

Weld on Mounting Collar 1"Ø Spherical Domed

Socket Weld Collar 1/2", 3/4" or 1" NB

Fixed Mounting Bush 1/2" BSP Pl

Fixed Mounting Bush 1/2" NPT

Swivel Nut & Collar 1 1/4" - 18

All Mountings 316L St Steel . specify code / size

To Order Specify - PW.2015 / Head Type / 6,7 or 8 / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / TX Range / Fixed Point Calibration, if required
Refer to PW leaflets for full DST specifications, selection and DST code.

All Mountings 316L St Steel specify

Resistance Thermometer Inset with Connection System 3 Wire or 4 Wire

Swivel Nut & Collar

1/2" NPT 316 St Steel

1/4" Ø 316L St Steel Interchangeable Spring Loaded

1/8" Ø 316L St Steel Interchangeable Spring Loaded

DIGI-STEM THERMOMETER DST500 or DST600 Series

Selection and DST code

Fixed DIGI-STEM Thermometer

To Order specify - PW.2022 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

DST 500

MADE IN USA

PALMER WAHL Style PW.2023

1 1/2" (38 mm)

Swivel Nut & Collar

1 1/4" - 18

Variable Pitch

Female Boss

1/2" NPT 316 St Steel

Fixing Bush

Socket Weld Collar

1/2", 3/4" or 1" NB

1/2" NPT 316 St Steel

1/8" o.d. x 0.260" i.d.

1/4" o.d. x 0.130" i.d.

3W

HA

Swivel Nut & Collar

1/2" NPT

316L St Steel Thermowell

3/8" o.d. x 0.260" i.d.

Length

Swivel Nut & Collar

Tri-clamp Fitting

1/2" BSP Pl

1/4" Ø 316L St Steel Mineral Insulated Connection System 3 Wire or 4 Wire

Resistance Thermometer Inset with 100 ohm @ 0°C Element
Fixed DIGI-STEM Thermometer
DST500 or DST600 Series
Refer to PW leaflets for full DST specifications, selection and DST code

To Order specify - PW.2025 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

All Mountings 316L St Steel specify code / size
Refer to PW leaflets for full DST specifications.

Adjustable Every Angle DIGI-STEM Thermometer

To Order specify - PW.2030 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

DIGI-STEM THERMOMETER

MADE IN USA

Model

Calibration

S No

PALMER WAHL Style PW.2030

Resistance Thermometer Inset with Mineral Insulated Connection System 3 Wire or 4 Wire

Class A, Standard or 1/10 DIN

316 St Steel Every Angle / Rotation Mechanism

1/2" o.d. x 0.260" i.d.

Fixed Mounting Bush

1/2" NPT 316 St Steel

1/2" o.d. x 0.130" i.d.

Swivel Nut & Collar

1 1/4" - 18

4W

To Order specify - PW.2032 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

VARIENT Fitting

1 1/2" ( 38 mm )

To Order specify - PW.2033 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

PALMER WAHL Style PW.2033

Resistance Thermometer Inset with Mineral Insulated Connection System 3 Wire or 4 Wire

100 ohm @ 0°C Element

1/2" NPT St Steel

1/2" o.d. x 0.260" i.d.

Fixed Mounting Bush

1/2" NPT

1/2" o.d. x 0.375" i.d.

Female Boss

1/2" NPT 316 St Steel

1/2" o.d. x 0.260" i.d.

Fixed Mounting Bush

1/2" o.d. x 0.260" i.d.

Female Boss

1/2" o.d. x 0.260" i.d.
DIGI-STEM THERMOMETER

CALIBRATION MODEL

DST 500
MADE IN USA

DIGI-STEM THERMOMETER

1/2" NPT St Steel Female Boss

1/2" NPT 316 St Steel Fixing Bush

Varivent Fitting

size / A

316 St Steel Every Angle / Rotation Mechanism

1/8" Ø 316L St Steel Interchangeable
Mineral Insulated
Resistance Thermometer Inset with
100 ohm @ 0°C Element
Class A, Standard S or 1/10 DIN HA
Connection System 3 Wire 3W or 4 Wire 4W

Adjustable Every Angle DIGI-STEM Thermometer
DST500 or DST600 Series
Refer to PW leaflets for full DST specifications, selection and DST code

To Order specify - PW.2035 / DST Type / Mounting & size / L1 / L2 / S or HA / 3 or 4 Wire / Fixed Point Calibration if required

All Mountings 316L St Steel specify code / Size

PALLMER WAHL Style PW.2035

1/4" .0130" i.d. 316L St Steel Thermowell

1/4" o.d. x 0.260" i.d. 316L St Steel Tube

1/2" NPT 316 St Steel Female Boss

1/2" NPT 316 St Steel Fixing Bush

316 St Steel Every Angle / Rotation Mechanism

1/8" 316L St Steel Interchangeable
Mineral Insulated
Resistance Thermometer Inset with
100 ohm @ 0°C Element
Class A, Standard S or 1/10 DIN HA
Connection System 3 Wire 3W or 4 Wire 4W
**Digi-Stem Digital RTD Thermometer**

**Model** DST-500

**Made in USA**

- **Meter Range**: -50° to 500°F (-45.5° to 260 °C)
- **System Accuracy**: Greater of ±0.3°F / 0.2°C or ±0.1° reading, over 1-year period ( @ Tamb = 23°C ) ±5°C
- **Display**: 1.0” 4-digit LCD display with icons for °F, °C and Low Battery, Readable up to 30 ft.
- **Display Resolution**: 0.1°F/C
- **Ambient Operating Temperature Range**: -40° to + 158°F (-40 to +70°C)
- **Enclosure**: Stainless Steel with Stainless Steel ‘H’ Frame Lazer Welded to Base
- **Enclosure Dimensions**: 5.3” W x 4.3” H x 2.7” D (13.5 x 10.9 x 6.9 cm)
- **Sensor/Probe**: Sensor - 4-wire RTD, R0 =100ohm,
  Alpha = .00385Ω/°C with serial ID chip
- **NIST Calibration**: Includes NIST Traceable Certificate of Calibration at 3 points (82.2/104/121.1°C) Certificate included

**Front View**

- Fixing Bracket
- IP 68 Quick Disconnect Turk Connector

**Stem Material**

304 Stainless Steel

1 1/4” x 18 NEF2 Swivel Nut Fitting

- Ø15.875 (.625“)
- Length ‘L1’

- Ø11.125 (.438“)
- 63.5 (2.5“)

**PVC Cable Length ‘L2’**

**Enclosure Dimensions**

5.3” W x 4.3” H x 2.7” D (13.5 x 10.9 x 6.9 cm)

**Sensor/Probe**

Sensor - 4-wire RTD, R0 =100ohm,
Alpha = .00385Ω/°C with serial ID chip

**NIST Calibration**

Includes NIST Traceable Certificate of Calibration at 3 points (82.2/104/121.1°C) Certificate included
Digi-Stem Digital RTD Thermometer
DST604I

- LCD-Display, Battery Operated (AA size)
- Meter Range: -50°F to 500°F (-45.5°C to 260°C)
- System Accuracy: Greater of ±0.3°F / ±0.2°C or ±0.1° reading, over 1-year period ( @ Tamb = 23°C ) ±5°C
- Display: 1.0" 4-digit LCD display with icons for °F, °C and Low Battery, Readable up to 30 ft.
- Display Resolution: 0.1°F/C
- Ambient Operating Temperature Range: -40°F to + 158°F (-40 to +70°C)
- Enclosure: Stainless Steel with Stainless Steel 'H' Frame, Lazer Welded to Base
- Enclosure Dimensions: 5.3" W x 4.3" H x 2.7" D (13.5 x 10.9 x 6.9 cm)
- Sensor/Probe: Sensor - 4-wire RTD, R0 = 100ohm, Alpha = .00385Ω/Ω/°C with serial ID chip
- NIST Calibration: Includes NIST Traceable Certificate of Calibration at 3 points (82.2/104/121.1°C) Certificate Included

**Stem Material**: 304 Stainless Steel

**Dimensions**:
- Ø15.875 (0.625")
- Ø11.125 (0.438")
- Length 'L1': 63.5 (2.5")
- 1 1/4" x 18 NEF2 Swivel Nut Fitting
Palmer Wahl Compact Transmitter IP67 Protection with Thermoplastic Moulded Body and Stainless Steel Fittings is perfect for areas where traditional Head Mounted Transmitters are too large and space is limited. PW offers a large range of Cables and Sensor Designs for attaching to the Compact Transmitter, Model No: PW-1206

TECHNICAL DETAILS

Input: 3-wire Pt100 IEC 60751, TC: 3.85 x 10⁻³
Sensor current: -0.5 mA
Output: Analog, 4-20 mA, temperature linear
Response time (90%): < 10 ms
Permissible load: 750 Ω @ 24 VDC
Measuring range: PC - configurable
Measuring range limits: -50 to + 800°C
Zero limits: -50°C to + 50°C
Minimum span: 50°C or 20°C
Sensor error: Max. ± 1% of span (2 points compensation)
Compensation: Selectable. Upscale (>21.0 mA) or downscale (<3.6 mA) action
Sensor short circuit: Fixed, downscale (<3.6 mA) action
Ambient temperature: -40 to + 85°C (storage and operation)
Humidity: 0 to 100 %RH
Vibrations: Acc. to IEC 60068 - 2 - 6, test Fc, 10 - 2000 Hz, 10g
EMC: Acc. to IEC 61326-1
Basic accuracy: Max. of ± 0.2°C or 0.2 % of span
Temperature influence: Max. of ± 0.01°C per °C or ± 0.01 % of span per °C
Long-term stability: ± 0.1 % of span per year
Power supply: 7.5 to 32 VDC, polarity protected
Material: Thermoplastic material
Weight: 16 g
Protection: IP67
Process connection: M12 x 1 4-pin

Transmitter Measuring Range: -50 to + 800 °C
The configuration is easily done before the installation with the user friendly ConSoft software and it can be Re-Configured without stopping / removal from the process.

Hygienic requirement on materials and articles intended for contact with foodstuffs according to Regulation (EC) 1935/2004
Palmer Wahl Compact Transmitter IP 67 Protection
Comprising of a Thermoelastic Moulded Body
with Stainless Steel Connections

TECHNICAL DETAILS
Input 3-wire Pt100 IEC 60751, TC: 3.85 x 10^-3
Sensor current ~0.5 mA
Output Analog, 4-20 mA, temperature linear
Response time (90%) < 10 ms
Measuring range PC - configurable
Ambient temperature -40 to +85°C (storage and operation)
Humidity 0 to 100 %RH
Vibrations Acc. to IEC 60068 - 2 - 6, test Fc,
10 - 2000 Hz, 10g
Basic accuracy Max. of ± 0.2°C or 0.2 % of span

Transmitter Measuring Range: -50 to +800 °C
The configuration is easily done before the installation with the user friendly ConSoft software and it can be Re-Configured without stopping / removal from the process.

Typical Order Code:

```
PW-1207 / 12 / 0 - 100°C / 4
Transmitter & 1/8"Ø Sensor / 12" Length / Transmitter Range / Sensor Range
-50 to +400°C
```

To Order Sensor Only: Denote S.O. for Transmitter Range
**Palmer Wahl** Compact Transmitter IP 67 Protection
Comprising of a Thermoplastic Moulded Body with Stainless Steel Connections

**TECHNICAL DETAILS**
- **Input**: 3-wire Pt100 IEC 60751, TC: 3.85 x 10^-3
- **Sensor current**: ~0.5 mA
- **Output**: Analog, 4-20 mA, temperature linear
- **Response time (90%)**: < 10 ms
- **Measuring range**: PC - configurable
- **Ambient temperature**: 0 to 100 %RH
- **Vibrations**: Acc. to IEC 60068 - 2 - 6, test Fc, 10 - 2000 Hz, 10g
- **Basic accuracy**: Max. of ± 0.2°C or 0.2 % of span

Transmitter Measuring Range: - 50 to + 800 °C
The configuration is easily done before the installation with the user friendly ConSoft software and it can be Re-Configured without stopping / removal from the process.

**Typical Order Code:**

PW-1208 / 12 / 0 - 100°C / 4
Transmitter & 1/4"Ø Sensor / 12" Length / Transmitter Range / Sensor Range
- 50 to + 400°C

To Order Sensor Only: Denote S.O. for Transmitter Range
Palmer Wahl Compact Transmitter IP 67 Protection
Comprising of a Thermoplastic Moulded Body with Stainless Steel Connections
Refer to Drg PW-1206 for Full Transmitter Data

Technical Details

Input: 3-wire Pt100 IEC 60751, TC: $3.85 \times 10^{-3}$
Sensor current: ~ 0.5 mA
Output: Analog, 4-20 mA, temperature linear
Response time (90%) < 10 ms
Measuring range: PC - configurable
Ambient temperature: -40 to +85°C (storage and operation)
Humidity: 0 to 100 %RH
Vibrations: Acc. to IEC 60068 - 2 - 6, test Fc, 10 - 2000 Hz, 10g
Basic accuracy: Max. of ± 0.2°C or 0.2 % of span

Transmitter Measuring Range: -50 to +800 °C
The configuration is easily done before the installation with the user friendly ConSoft software and it can be Re-Configured without stopping / removal from the process.

Sensor Ranges:
- 50 to +400°C specify - Suffix /4
- 50 to +600°C specify - Suffix /6
- 50 to +800°C specify - Suffix /8

Fixed Mounting Bush 3/4" NPT
1/2" o.d. x 0.260" i.d. 316L St Steel Thermowell
1/4" Ø 316L St Steel Interchangeable Mineral Insulated Resistance Thermometer Inset with 100 ohm @ 0°C Element Class A as Standard - Connection System 3 Wire

Compact TX PALMER WAHL Style PW.1229

To Order Specify - PW.1229 / L1 / TX Range / Sensor Range / Fixed Point Calibration, if required
Palmer Wahl Compact Transmitter IP 67 Protection
Comprising of a Thermoplastic Moulded Body
with Stainless Steel Connections
Refer to Drg PW-1206 for Full Transmitter Data

Technical Details
Input
3-wire Pt100 IEC 60751, TC: 3.85 x 10⁻³
Sensor current
~ 0.5 mA
Output
Analog, 4-20 mA, temperature linear
Response time (90%)
< 10 ms
Measuring range
PC - configurable
Ambient temperature
- 40 to + 85°C (storage and operation)
Humidity
0 to 100 %RH
Vibrations
Acc. to IEC 60068 - 2 - 6, test Fc, 10 - 2000 Hz, 10g
Basic accuracy
Max. of ± 0.2°C or 0.2 % of span

Transmitter Measuring Range: -50 to +800 °C
The configuration is easily done before the installation with the user friendly ConSoft software and it can be Re-Configured without stopping / removal from the process.

Sensor Ranges:
-50 to +400°C specify - Suffix / 4
-50 to +600°C specify - Suffix / 6
-50 to +800°C specify - Suffix / 8

To Order Specify - PW.1228 / Mounting & size / L1 / TX Range / Sensor Range / Fixed Point Calibration, if required
Digi-Stem Thermometer
DST500 LCD-Display
Battery Operated
Refer to leaflet PW 1202 for full specification

Top pipe strapped onto bottom pipe to enable Thermometer to be turned with Jubilee Clips

Optional
Stainless Steel DSA3030 Wall Mount Bracket

1/4" Ø Internal Mineral Insulated Resistance Thermometer
Sensor Basic Resistance :
100 ohms @ 0°C - 138.5 ohms @ 100°C
TC 0.00385 / Class A

1/2" Ø Thermometer Stem welded to "T" Handle

Inserted
Removed

"T" Handle Support welded to Kettle Holding Frame

Rotating Thermometer

Bolted to Kettle Holding Frame

"T" Handle Support welded to Thermometer Support

3/16" I.d. St Steel Conduit

Weld machined & Polished

Refer to leaflet PW 1202 for full specification
High Temperature T/C Assembly Ceramic Double Thermowell

**Aluminium Connection Head with Screwed Gasketed Cover and Captive Chain**

- **Flange Size & Mat'1 as required**

**Lagging Length 'L1'**

**Immersion Length below Flange 'L3'**

**Holding Tube Length 'L2'**

**Thermocouple Type R, S or B**
- Platinum / Rhodium
- Single or Duplex Precious Metal Wire

**TC Wire diameters**: 0.25 or 0.5 mm dia

**Insulated with a 4 mm dia Twin or Four Bore Ceramic Insulator** (ALSINT 99.8% Pure Alumina)

**Ceramic Terminal Block with Brass Nickel Chromed / Plated Polarity Markings**

**High Temperature Fiber**
- **High Temperature Cement**

**1/2" NPT Cable Entry**
- **1/2" NPT St Steel Welded Fitting**

**11/2" NB Sch 40 Holding Tube**
- 304 St Steel, Inconel 600, Carbon Steel or as Specified

**Inner Protection Tube**
- 1/2" od x 3/8" id
- High Purity Non Porous Ceramic (ALSINT 99.8% Pure Alumina with one end closed)

**Outer Protection Tube**
- 3/4" od x 9/16" id
- High Purity Non Porous Ceramic (ALSINT 99.8% Pure Alumina with one end closed)

**All annular space will be filled with High Purity Alumina Powder**

**High Temperature Cement**

**High Temperature Fiber**

**Holding Tube Length 'L2'**

**Inner Protection Tube**

**High Temperature Cement**

**High Temperature Fiber**

**1/2" NPT Cable Entry**
- **1/2" NPT St Steel Welded Fitting**
Aluminium IP 68 Connection Head with Screwed Cover and Captive Chain

2 Way Spring Loaded Din Block

1/8" @ 45 deg Fillet Weld

3/4" NPT 316 St Steel Mounting Bush

1/2" NB Sch 40 Inconel 600 0.840" (21.33 mm) outside diameter

1/4" dia Inconel 600 Sheathed Mineral Insulated Single Type 'K' with Insulated Hot Junction

Inconel 600 Solid Plug

1/2" NPT Cable Entry

1/2" NPT

6"

30"

Cable Entry 6"
Aluminium Housing

1/2" NPT

Ceramic Terminal Block

1/2" NPT

St Steel Back Nut

1/2" NPS St Steel Mounting Arrangement

Existing (Estimated)
1/4" thick 310 St Steel Mounting Bracket with 1/2" NPS Clearance Hole

1/4" Ø 310 St Steel Sheathed Mineral Insulated Thermocouple Duplex Type K Insulated Hot Junction Special Limits of Error

8" radius

1/4" Ø 310 St Steel Pipe

310 St Steel Gun Drilled Solid Bar

1 1/2"

1/2" NPT

304 St Steel Heatshield

Adjustable St Steel Spring Loading

1/4" Ø 310 St Steel

0.260 Ø bore

0.54" o.d.

310 St Steel Heatshield

1/4" Sch 40 310 St Steel Pipe

1/2" NPS St Steel Mounting Arrangement

Existing (Estimated)
1/4" thick 310 St Steel Mounting Bracket with 1/2" NPS Clearance Hole

Duplex Thermocouple Assembly

Lynn Blount

11.11.16

Duplex Type K
Insulated Hot Junction
Special Limits of Error

Wahl Instruments, Inc.
334 Old Waynesville Road
Asheville, NC 28804

PW-1078

Sheet 2 of 2
Connection Head Fixing and Sealing Details

Type XDA Explosion Proof Connection Head
Aluminium Epoxy Painted Silver
3/4" NPT Cable Entry
FM Approved Class 1 Division 1
Groups A, B, C & D
Welding Clamp 2" long 1/2" wide 1/8" long to fit 1/4" od T/C 310 St Steel
Scale 2 : 1

Section A - A
310 St Steel / High Purity Alumina packed, Heat Shield
Scale 2 : 1

Weld Pad Detail
1" x 1" x 1/8" 310 St Steel radiused to Suit 4 1/2" Pipe
Scale 2 : 1

Site Weld
1/8" Fillet @ 45°
This tube is ONLY to fit over the finished job, to protect the flexible cable and joint.

6 mm o.d x 3 or 4 mm i.d. St. Steel Protection Tube
Removed on Installation

5 mm Ø Bore to enable fit over 3/16" Ø (4.76) Pot Seal

1/2" approx

Epoxy Fill

PTFE overall

Joint

3/16"Ø Pot Seal
Pot Seal 1" to 2" long

3/16" MI Cable

Weld and finish smooth to enable to fit through a 3/16" o.d. x 1/4" NPT Gland

3/16" MI Cable

3/16"Ø Pot Seal

PTFE / PTFE Insulated Flexible Type K T/C Tails

VOG
DESCRIPTION
DATE
CHANGED BY

Lynn Blount
5.31.16

Tubeskin Thermocouples

MD-1011 A

Cold End Termination of Tubeskin Thermocouples

Wahl Instruments, Inc.
334 Old Woodville Road
Petersville, NC 28004

Lynn Blount 5.31.16
MD-1011 A

DO NOT SCALE DRAWING
1" x 1" x 1/8" (3mm) Weld Pad Mat'l same as Thermocouple Sheath
310 St Steel

Weld Clamp 310 St Steel
Supplied by S Products -

1/2"

1/4"

3/16" Ø St Steel Sheathed MgO Insulated T/C Cable
Conductor : Single Type K
Special Limits of Error
Hot Junction Insulated from Sheath
Sheath Mat'l 310 St Steel

Welded by S Products

Scale 1 : 1

Scale 2 : 1

NOTE
Flatten 3/16"Ø Thermocouple at end
to Fill 1/4" wide slot
Lynn Blount
11.7.16
Fast Response Deep Well
MJB
11.7.16
PW-1077
Resistance Thermometer Assembly

Cable
100 feet - 1/8Ø, 3 Core 7 x 0.2 Tinned Copper with PTFE Insulation, Twisted with Overall PTFE Extruded

3/8"Ø Special Transition
316 St Steel

St Steel Compression fitting for 3/8" Tube

1/8" Ø St Steel sheathed
Mineral Insulated Resistance Thermometer Inset housing a Single 100 ohm @ 0°C, Class A Resistance Element Temperature Range : 0 - 350°C Connection System : 3 Wire

All space Filled with Silicone Rubber

1/2"
1/4"
3 1/2"
2"
3/4"
1/4"
1/4"
1/2"
Palmer Wahl
IP66 Connection Head
Screwed & Gasketed cover with captive chain

1/2" NPT
Cable Entry

1/2" NB Sch 40
St Steel Nipple

1/2" NPT
Ceramic Terminal Block

1 1/2" 150lb RF
St Steel Flange

1/4" Ø bore, 0.26 [6.5]
4" deep}

Velocity Collar
dims as required

Existing Nozzle

1/6" Ø Inconel Sheathed
Mineral Insulated Thermocouple
Singlr Type K
Insulated Hot Junction

Fast Response
Thermocouple Assembly

Lynn Blount
5.20.16

Thermocouple Assembly

Lynn Blount
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Thermocouple Assembly

Lynn Blou
Aluminium Connection Head
Weatherproof to IP67
with Screwed Cover
Retaining Chain and
Internal / External Earth Lugs.

1/2" NPT
Cable Entry.

1/2" St. Steel Nipple.

1/2" NPT.

1/2" BSP Pl.

Ceramic Terminal Block.

316 St. Steel Nipple to NACE
Finish 3.2 to 10.5 um Ra.

316 St. Steel Flange
in accordance with Shell Standard.

316 St. Steel Flange
in accordance with Shell Standard.

6 mm Ø St. Steel Sheathed
Mineral Insulated
Resistance Thermometer
100 ohm @ 0°C
3 Wire Single Class A.

Lynn Blount
4.25.16
Assembly
Resistance Thermometer
MJB
4.25.16
PW-1020
Resistance Thermometer Assembly

1/4" Ø Steel sheathed Mineral Insulated Resistance Thermometer Inset housing a Duplex 2 x 100 ohm @ 0°C, Class A Resistance Element

Temperature Range: 0 - 350°C

Connection System: 2 x 3 Wire

Teflon Insulated Wires
2 White 1 Red

Pot Seal

1/2" NPT 316 St Steel Adjustable Compression Gland

Length 'L'

Adjustable
Connection Heads

- Aluminium Flip Top with Indicator Window
- Aluminium Exd Flameproof
- Stainless Steel Exd Flameproof
- Aluminium Exd Flameproof
- White Plastic Weatherproof
- Aluminium Weatherproof
- Aluminium Flip Top

PW-1091
Terminal Head
Weatherproof

Nipple 1/2" BSP Parallel
with St. Steel Locknut

Nipple
1/2" NPT

DIN Type
M24x1.5 / 1/2" BSP or NPT

Flanged
Velocity Collar

Solid Taper
Flat Tip

Solid Taper
Flat Tip

Solid Parallel
Reduced Tip

Solid Taper
Radius Tip

Solid Parallel
Domed Tip

Nipple / Union / Nipple
1/2" NPT

DIGI-STEM

83.1°F

DIGI-STEM

MODEL

S No

DIGI-STEM THERMOMETER

DST 500
MADE IN USA

2 4
BAR STOCK for SOLID TYPE

- Round / 20 Ø to 50 Ø
- Hexagonal / 20 A/F to 38 A/F
- AISI / 316L, 316 Ti, 321, 446
- Inconel 600, Monel 400
- Hastelloy C276, Incoloy 800

FLANGED
- ANSI B16.5 Blind with Full Pen or Fillit Weld
- DIN 2527/26 Form B/C
- AISI 316 / 316L, AISI 316 Ti, A 105, Hastellot C276 etc.
- ANSI B 16.5 RF, FF, RTJ
Fabricated Thermowell Assemblies

TUBE for FABRICATED - AISI 316/316L, 316Ti, 446
- Inconel 600,
- Hastelloy C276
- 9, 10, 11, 12 & 15 mm
- NB Sizes 1/4", 3/8", 1/2", 3/4" & 1"
DESIGNERS, MANUFACTURERS and SUPPLIERS OF -
Mineral Insulated Thermocouples
Mineral Insulated RTD’s
4-20 mA Head Mounted Transmitters
Solid Drilled Thermowells
Fabricated Thermowells
Resistance Thermometer Assemblies
Multi-Point Assemblies
Tube Skin Thermocouples
Bi-Metals
Rigid & Remote Reading Thermometers
Transmitters with Integral Indicators
COMPONENTS for PRODUCTION of TEMPERATURE PRODUCTS
Mineral Insulated
Metal Sheathed Thermocouple Cable
Mineral Insulated Metal Sheathed Cables with Nickel & Copper Conductors for Resistance Thermometers
T/C Compensating & Extension Cables
Connection Heads
Terminal Blocks
Pressure Entry & Cable Glands
Plugs & Sockets & Panels
PALMER WAHL QUALITY ASSURANCE INCLUDES
ISO 9001 : 2008 Certified
NIST Traceable Calibration
USD Approved
ATEX & FM Approvals
Material Certification
Full QA Manuals
Pressure Testing
Radiography
Ultrasonics
Nace Certification
Hardness Testing
Heat Treatment
Welders Qualifications
Thermowell Stress Calculations

America’s First Manufacturer of Precision Industrial Temperature and Pressure Instrumentation