



THE ADVANTAGES OF TERWIN 2000 SERIES

EXTRUSION PRESSURE / TEMPERATURE TRANSDUCERS

- The Terwin 2000 Series is constructed throughout from stainless steel and do not contain any toxic products such as mercury or sodium-potassium. This enables us to apply our transducers in the production of food, film and pharmaceutical products.
- Our unique twin tube system overcomes the problems of temperature drift, which has been associated with old force rod type transducers and our temperature characteristics are equal to or better than transducers that employ mercury columns.
- We offer four different stem lengths in the 2000 series transducers, to suit all sizes of extruders i.e., 3.65", 6.0", 9.0" and 12.0".
- Our Di-Hard™ Diaphragm is both abrasion and corrosion resistant and suitable for temperatures up to 842°F/450° C.
- Our strain gauge assembly (electrical termination head) is rated to 392°F/200°C. Most competitive transducers have a head that is suitable for only 250°F/121°C and this is the reason why our competitors offer transducers with flexible stems, enabling the head to be mounted away from the heat. However, flexible stems with mercury or sodium-potassium fill material are certainly not desirable and if damaged, can render the transducer useless.
- All pressure transducers are available with type 'J' I/C or type 'K' C/A thermocouples for dual pressure and temperature measurement. Also, we can provide at no additional cost, transducers that are calibrated in other units such as kg/cm², bar or Pascals etc.
- We offer extrusion pressure ranges from 0 - 500 psi through 0 - 30,000 psi.
- Our standard accuracy is within 0.5% of the full range (typically within 0.25% of full range).
- The 2000 series pressure transducers are mechanically and electrically interchangeable with most other competitive products. In most cases it is not necessary to change the cable assembly or the process indicator/controller. If you inform us of a competitive product part number, we will be pleased to quote for a Terwin equivalent transducer.
- Our transducers are both CE approved and calibrated to National Standards.

Terwin Instruments Ltd



**Manufacturers Of Industrial Pressure / Temperature
Sensors & Instrumentation**

Represented by:



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Customer Service and Product
Quality Are Our No.1 Priority

Terwin 2000 Series “Environmentally Friendly” Extrusion Pressure / Temperature Transducers



Description:

The Terwin 2000 series transducers have been designed to meet the most exacting requirements in modern day extrusion technology. Fitted with the unique Di-Hard™ diaphragms, these transducers are suitable for extrudate temperatures up to 450°C / 842°F and are resilient against attack from most abrasive or corrosive products.

The 2000 series incorporates unequalled mechanical and electrical design features to overcome the problems of large zero and span shifts caused by changes in process temperatures. This has only been obtainable in the past with transducers that utilise a liquid filled system incorporating substances such as Mercury or Sodium Potassium. All Terwin 2000 series transducers are constructed throughout from stainless steel and DO NOT employ any toxic substances, thus allowing them to be used on machines involved in the process of food, film or pharmaceutical products.

When it is required to measure temperature as well as pressure, the 2000 series is available with type “J” or “K” integral thermocouples. Standard thermocouples have grounded junctions.

The 2000 series is also available with a variety of head and connection / calibration types.

Advantages:

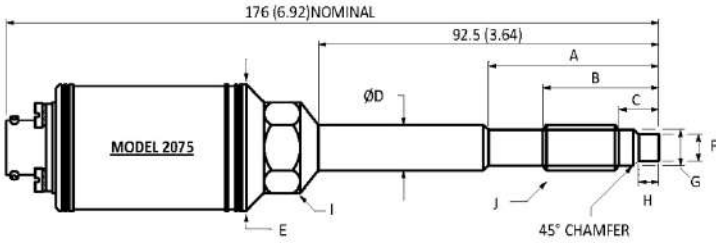
- ✓ Accuracy $\pm 0.5\%$ (typically $\pm 0.25\%$).
- ✓ 4 x thicker Di-Hard™ abrasion / corrosion resistant diaphragm.
- ✓ Stainless steel construction throughout.
- ✓ Compatible with food, film and pharmaceutical applications.
- ✓ DOES NOT contain Mercury, NaK (sodium Potassium) or any other toxic product to contaminate the extrudate.
- ✓ Compliant with EN50082 part 1 and EN55022-1987 class A.
- ✓ Protected by UK patent No. 2,153,538 USA patent No. 4,625,559 and European patent No. 0156081.
- ✓ Suitable for extrudate temperatures up to 450°C / 842°F.
- ✓ Interchangeable with most other brands.



Terwin 2000 Series “Environmentally Friendly” Extrusion Pressure / Temperature Transducers

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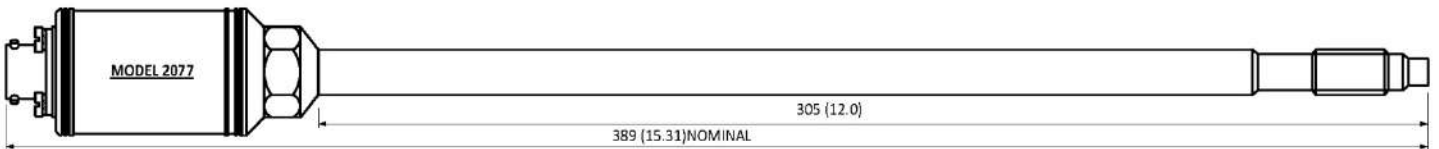
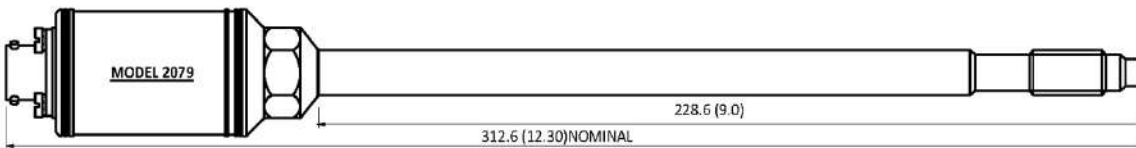
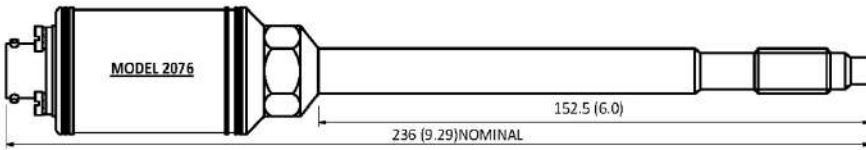
Stem length options:



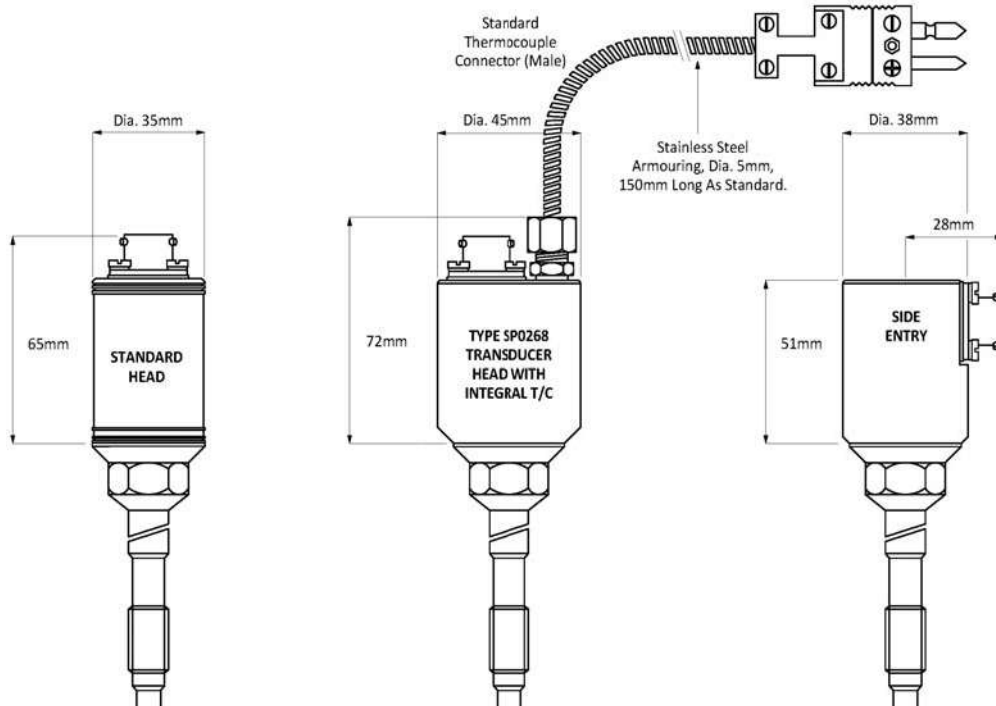
mm (INCHES)	DIMENSION
47 (1.85)	A
31.3 (1.23)	B
12.2 (0.48)	C
12.7 (0.50)	D
35.0 (1.38)	E
7.77±0.03 (0.306±0.001)	F
10.49±0.03 (0.413±0.001)	G
5.54±0.12 (0.218±0.005)	H
22 A/F	I
1/2-20-UNF-2A	J

PLEASE NOTE:

A to J dimensions are common
to all standard models listed.



Head options:





Terwin 2000 Series “Environmentally Friendly” Extrusion Pressure / Temperature Transducers

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Specifications

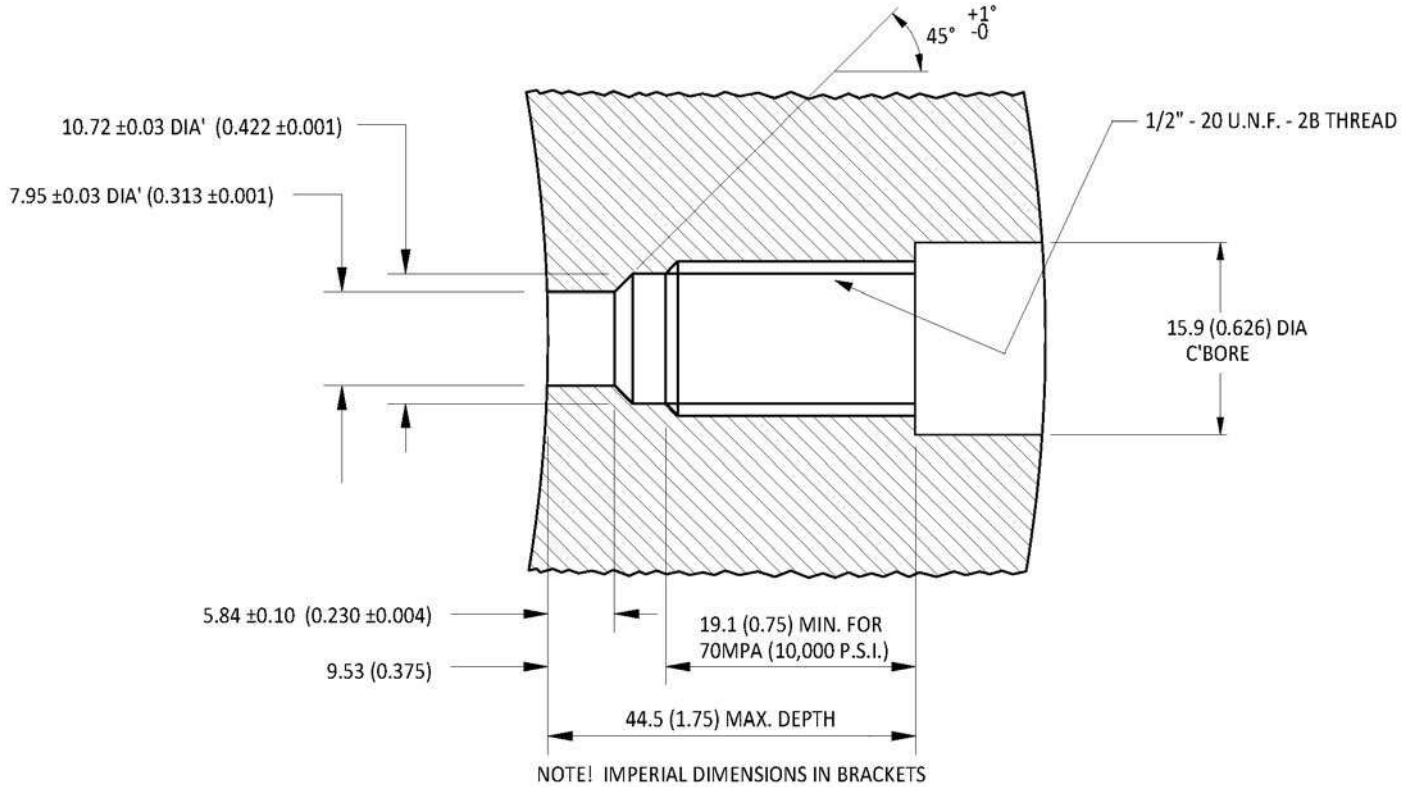
Standard Pressure Ranges:	psi	0-1,500	0-3,000	0-5,000	0-7,500	0-10,000	0-15,000
	bar	0-100	0-200	0-350	0-500	0-700	0-1,000
Available Pressure Ranges	psi	0-500 thru to 0-30,000					
	bar	0-35 thru to 0-2,000					
Combined Error	Standard ranges:			Non-standard ranges:			
	Within $\pm 0.5\%$ F.R.O. (Typically $\pm 0.25\%$)			Within $\pm 1\%$ F.R.O. (Typically $\pm 0.5\%$)			
Repeatability	Within $\pm 0.1\%$ F.R.O.						
Resolution	Infinite						
Maximum Pressure:	2 x full range or 25,000psi (1,700 bar) which ever is less.						
	On 30,000psi (2,000bar) sensors, the maximum pressure is 35,000psi (2,400 bar).						
Body Material	17-4PH Stainless steel.						
Diaphragm Material	Terwin Di-Hard™ Extra Thick, Abrasion / Corrosion Resistant Long Life Diaphragm						
Optional Diaphragm Coatings	Titanium Nitride (TN)		Hastelloy C276 (H)		Double Chromium Nitride (DCN)		
	Additional anti-abrasion resistance and to prevent thread galling.		Additional anti-corrosion resistance.		Out performs TN and H coatings in most applications.		
Mounting Torque	20ft lbs (27Nm) (240 inch/lbs)						
Standard Thread Size	1/2"-20UNF-2A						
Available Thread Size Adaptor	M18 x 1.5mm						
Electrical Specifications							
Excitation	5-12V D.C.						
Configuration	Four-arm bonded foil Wheatstone bridge strain gauge						
Bridge Resistance	350 Ω $\pm 10\%$						
Output	3.0mV/V D.C. $\pm 10\%$						
Zero Balance	$\pm 5\%$ F.R.O.						
Internal Negative Shunt Calibration	6-wire 80% F.S.O. $\pm 0.1\%$ - Other calibration types are available.						
Electrical Connectors	6-Pin (D6)	8-Pin (D8)	9-Pin (D9)	12-Pin (D12)	Cannon 6-Pin (G) (Gentran)	Cannon 6-Pin (BC) (Barber Coleman)	1/2"-NPT direct cable outlet
	PT02A-10-6P	PT02E-12-8P					
Integral Temperature Sensors	"J" I/C				"K" C/A		
Maximum Diaphragm Temperature	450°C / 842°F						
Maximum Strain Gauge Temperature	200°C / 392°F						
Zero Shift Due To Temperature Change	<0.01% F.S.O./°C or <0.02% F.S.O./°F						
Span Shift Due To Temperature Change	<0.01% F.S.O./°C or <0.02% F.S.O./°F						



Terwin 2000 Series "Environmentally Friendly" Extrusion Pressure / Temperature Transducers

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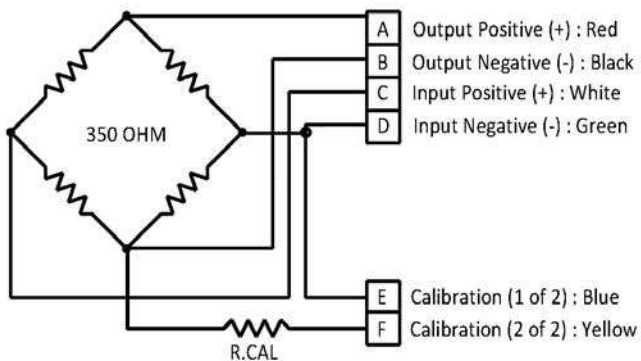
Recommended Port Dimensions for 1/2"-20UNF Threaded Transducers:



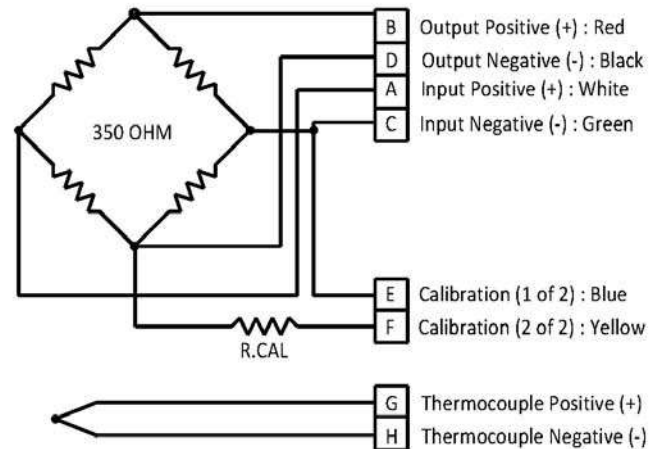
All diameters to be concentric to within 0.05 (0.002) T.I.R.

Terwin 2000 Series Standard Wiring Connections:

"D6" PRESSURE TRANSDUCER



"D8" PRESSURE / TEMPERATURE TRANSDUCER





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Terwin 5000 Series Melt Pressure / Temperature Transducers and Transmitters



Description:

The Terwin 5000 Series melt pressure / temperature transducers / transmitters utilise hydraulic transmission between the sensing diaphragm that is in contact with the melt and the strain gauge assembly that produces an electrical output.

Models are available with either nominal 3.33mV/V output (transducer), 4-20mA DC or 0-10V DC (transmitter) conditioned outputs. All outputs utilise industry standard 80% calibration.

Available pressure ranges are 0-500psi through 0-30,000psi (0-35 bar through 2,000 bar). Other units of pressure measurement, such as kg/cm² or MPa etc., are available if required.

Standard thread size is ½"-20UNF, however optional European sizes such as M18 x 1.5mm, M14 x 1.5mm and Japanese sizes PF3/8 and PF3/4 are also available.

Available with a selection of stem lengths: 3", 6", 9", 12", 15" & 18".

Optional fill materials are available.

Features:

- ✓ Low cost.
- ✓ Proven sensor design.
- ✓ High performance.
- ✓ Accuracy better than $\pm 0.5\%$.
- ✓ Terwin *Extru-Max*[™] diaphragm as standard.
- ✓ Internal 80% negative shunt calibration.
- ✓ Compatible with most competitor models

Benefits:

- ✓ Superior abrasion resistance
- ✓ Reliable, repeatable pressure measurement
- ✓ Wide variety of pressure ranges
- ✓ Optional stems lengths
- ✓ Optional thread sizes

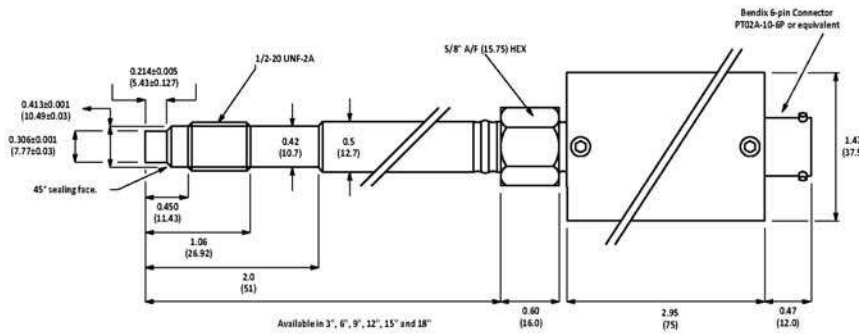


Terwin 5000 Series Melt Pressure / Temperature Transducers and Transmitters

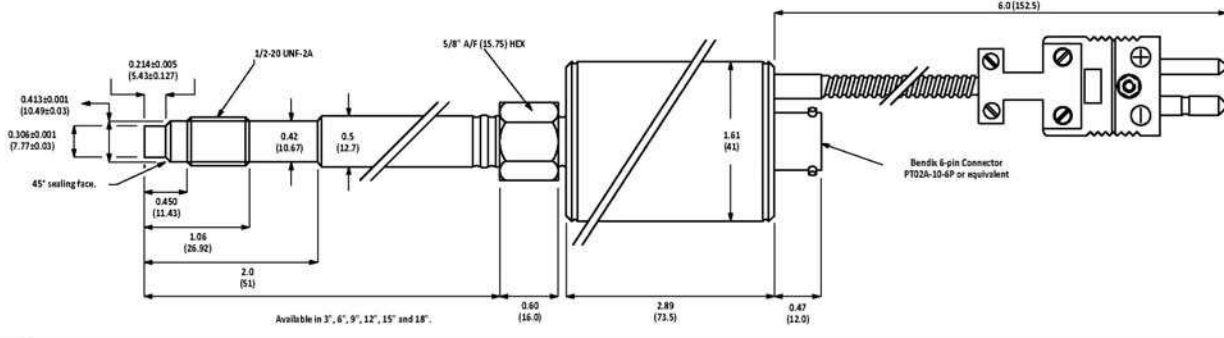
Customer Service and Product Quality Are Our No.1 Priority

All dimensions mm's (inches)

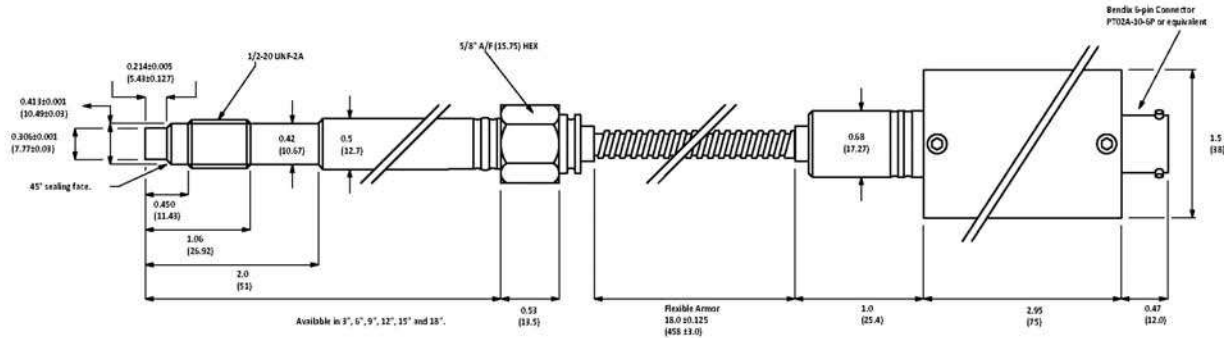
MODEL 51
Pressure



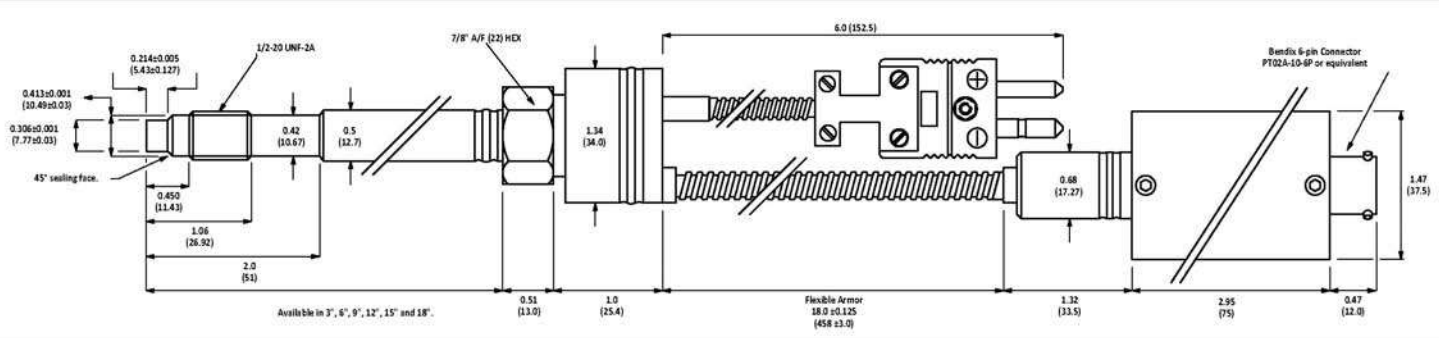
MODEL 52
Pressure & Temperature



MODEL 53
Pressure

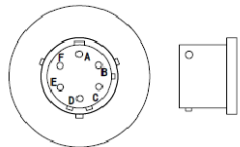


MODEL 54
Pressure & Temperature

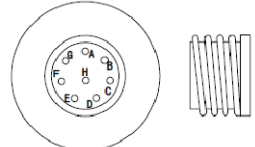


Industry Standard Connectors:

6-Pin (D6)
(Standard)



8-Pin (D8)
(Optional)





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Terwin 5000 Series Melt Pressure / Temperature

Transducers and Transmitters

5000 Series Ordering Codes

51 - 6 - M - J - Y - D6 - 7M5 - A - OIL - H - M18 - SPXXX

MODEL:		CODE:
51	Rigid stem	51
52	Rigid stem + temperature sensor	52
53	Rigid stem + flexible capillary	53
54	Rigid stem + flexible capillary + temperature sensor	54
STEM LENGTH:		CODE:
3 inches (76.2mm)		3
6 inches (152.4mm)		6
9 inches (228.6mm)		9
12 inches (305.0mm)		12
15 inches (381.0mm)		15
18 inches (457.2mm)		18
Other (contact sales)		TBA
PRESSURE OUTPUT SIGNAL:		CODE:
3.33mV/V (standard)		M
4-20mA DC (2-wire + calibration pair)		A
0-10V DC (4-wire + calibration pair)		V
TEMPERATURE SENSOR (52 + 54 Series ONLY)		CODE:
None		X
"J" I/C (standard)		J
"K" C/A		K
PT100		P
ARMoured CAPILLARY LENGTH (53 + 54 Series ONLY)		CODE:
None		Y
18 inches (standard)		18
36 inches etc		36 etc
CONNECTOR TYPE:		CODE:
PT02A-10-6P (6-Pin bayonet)		D6
PC02E-12-8P (8-Pin threaded)		D8
½"-14NPT Threaded Process Connector With Flying Lead		NPT
Non-Standard (contact sales)		TBA



PRESSURE RANGE: 0 - (zero to)			
PSI	CODE:	BAR	CODE:
500psi	5C	35bar	35B
1,000psi	1M	70bar	70B
1,500psi	1M5	100bar	100B
3,000psi	3M	200bar	200B
5,000psi	5M	350bar	350B
7,500psi	7M5	500bar	500B
10,000psi	10M	700bar	700B
15,000psi	15M	1,000bar	1000B
20,000psi	20M	1,500bar	1500B
30,000psi	30M	2,000bar	2000B
Non-standard		TBA	
ACCURACY:			CODE:
±0.5% (standard)			A
±0.25%			B
FILL MATERIAL:			CODE:
Mercury			Left blank
Silicon Oil			OIL
Glycerine Oil			GLY
DIAPHRAGM:			CODE:
Terwin Extru-Max™ Coating			Left blank
Hastelloy "C276"			H
Other			TBA
THREAD SIZE:			CODE:
1/2"-20UNF-2A			Left blank
M14x1.5mm			M14
M18x1.5mm			M18
PF3/8 (G3/8)			G3/8
PF3/4 (G3/4)			G3/4
Non-standard (contact sales)			TBA
SPECIAL CODE			CODE:
None			Left Blank
Code to be issued by factory			SPXXX





Terwin 5000 Series Melt Pressure / Temperature

Transducers and Transmitters

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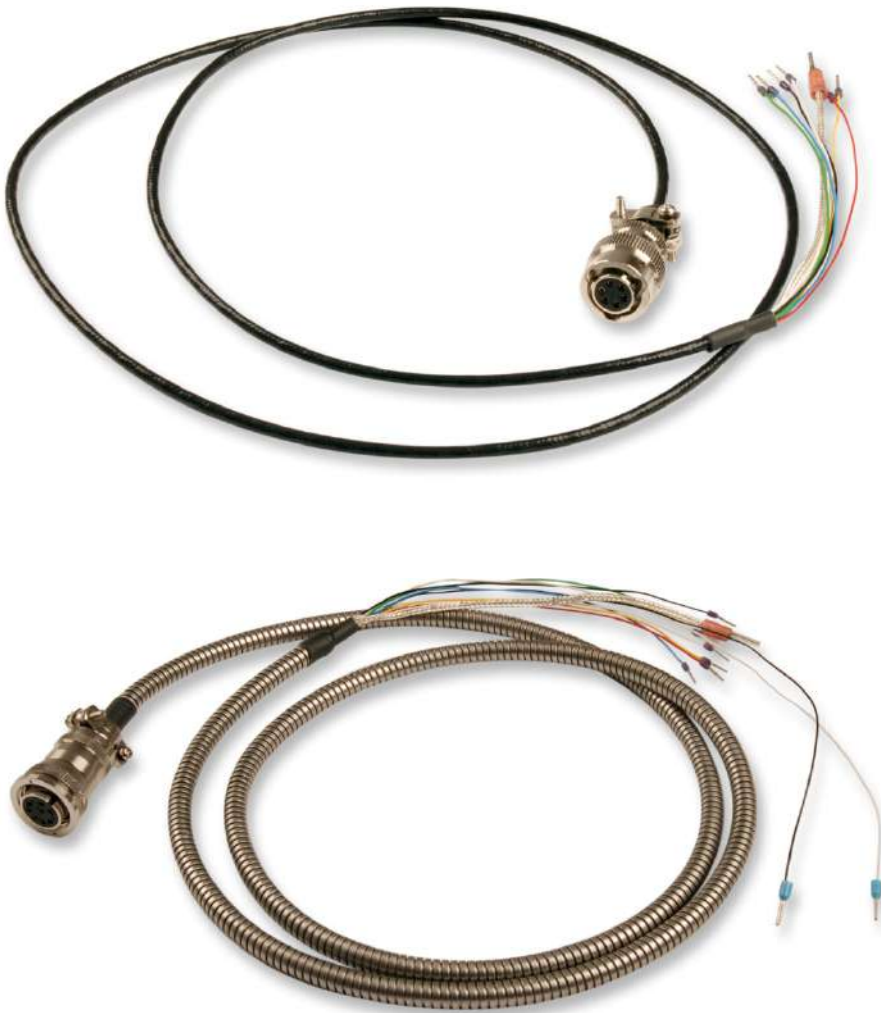
Specifications

Standard Pressure Ranges:	psi	0-5,000	0-7,500	0-10,000	0-15,000
	bar	0-350	0-500	0-700	0-1,000
Available Pressure Ranges	psi	0-500 thru to 0-30,000			
	bar	0-35 thru to 0-2,000			
Combined Error	Within $\pm 0.5\%$ F.R.O. (Optional $\pm 0.25\%$) Oil filled units have reduced accuracy of $\pm 1\%$ with optional $\pm 0.5\%$ within standard pressure ranges. Non-standard ranges have an accuracy of $\pm 1.5\%$.				
Repeatability	Within $\pm 0.1\%$ F.R.O.				
Resolution	Infinite				
Maximum Pressure:	2 x full range or 25,000psi (1,700 bar) which ever is less.				
	On 30,000psi (2,000bar) sensors, the maximum pressure is 35,000psi (2,400 bar).				
Body Material	17PH4 Stainless steel.				
Diaphragm Material	Terwin Extru-Max™ Long Life Diaphragm				
Available Fill Materials	Mercury (standard)	Silicon Oil	Glycerine Oil		
Mounting Torque	20ft lbs (27Nm) (240 inch/lbs)				
Standard Thread Size	1/2"-20UNF-2A (standard).				
Available Thread Sizes	M14x1.5mm, M18 x 1.5mm, PF3/8 (G3/8) and PF3/4 (G3/4).				
Electrical Specifications					
Excitation	Transducers: 5-12V D.C.		Transmitters: 15-30V D.C.		
Configuration	Four-arm bonded foil Wheatstone bridge strain gauge				
Bridge Resistance	350 Ω $\pm 10\%$				
Outputs	Transducers		Transmitters (current)		Transmitters (voltage)
	3.33mV/V D.C. $\pm 10\%$		4-20mA D.C.		0-10V D.C.
Zero Balance	Transducers $\pm 10\%$ F.R.O.		Transmitters $\pm 10\%$ adjustable by customer assessable potentiometer		
Internal Negative Shunt Calibration	Transducers 80% F.S.O. $\pm 0.25\%$		Transmitters 80% F.S.O. $\pm 0.25\%$ adjustable by customer assessable potentiometer		
Electrical Connectors	6-Pin (D6) PT02A-10-6P		8-Pin (D8) PT02E-12-8P		1/2"-NPT direct cable outlet
Integral Temperature Sensors	"J" I/C (standard)		"K" C/A (optional)		PT100 (optional)
Maximum Diaphragm Temperature	Model No:	Mercury Fill	Silicon Fill	Glycerine Fill	
	51/52	350°C / 662°F	200°C / 392°F	180°C / 356°F	
	53/54	450°C / 842°F	250°C / 482°F	220°C / 428°F	
Maximum Strain Gauge Temperature	Transducers	121°C / 250°F.	Transmitters	85°C / 185°F	
Zero Shift Due To Temperature Change	<0.02% F.S.O./°C or <0.01% F.S.O./°F				
Span Shift Due To Temperature Change	<0.02% F.S.O./°C or <0.01% F.S.O./°F				



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Cable Assemblies For Terwin Extrusion Pressure / Temperature Transducers & Transmitters



Description:

Terwin cable assemblies can be used in conjunction with any of our pressure / temperature transducers or transmitters. Made to order, these items are quickly available in either high temperature Teflon sheaths with Teflon sheathed inner cores (maximum temperature rating 260°C/500°F). We also offer a cheaper PVC equivalent (maximum temperature rating 105°C / 221°F). All cables are offered with stainless steel armouring (conduit) that may be fitted to a section of the assembly or the entire length.

With a variety of connectors available, you may choose whether to have tails on one end or another connector.

Advantages:

- ✓ Quality cable, increases the life of your assembly and prevents early system failures.
- ✓ High temperature Teflon cable available as standard.
- ✓ Budget PVC option.
- ✓ Stainless steel armouring (conduit) optional.
- ✓ Quality connectors fitted as standard.
- ✓ Custom cables our speciality.
- ✓ Mating connectors available from stock.
- ✓ Interchangeable with most other brand sensors.
- ✓ Quality build.

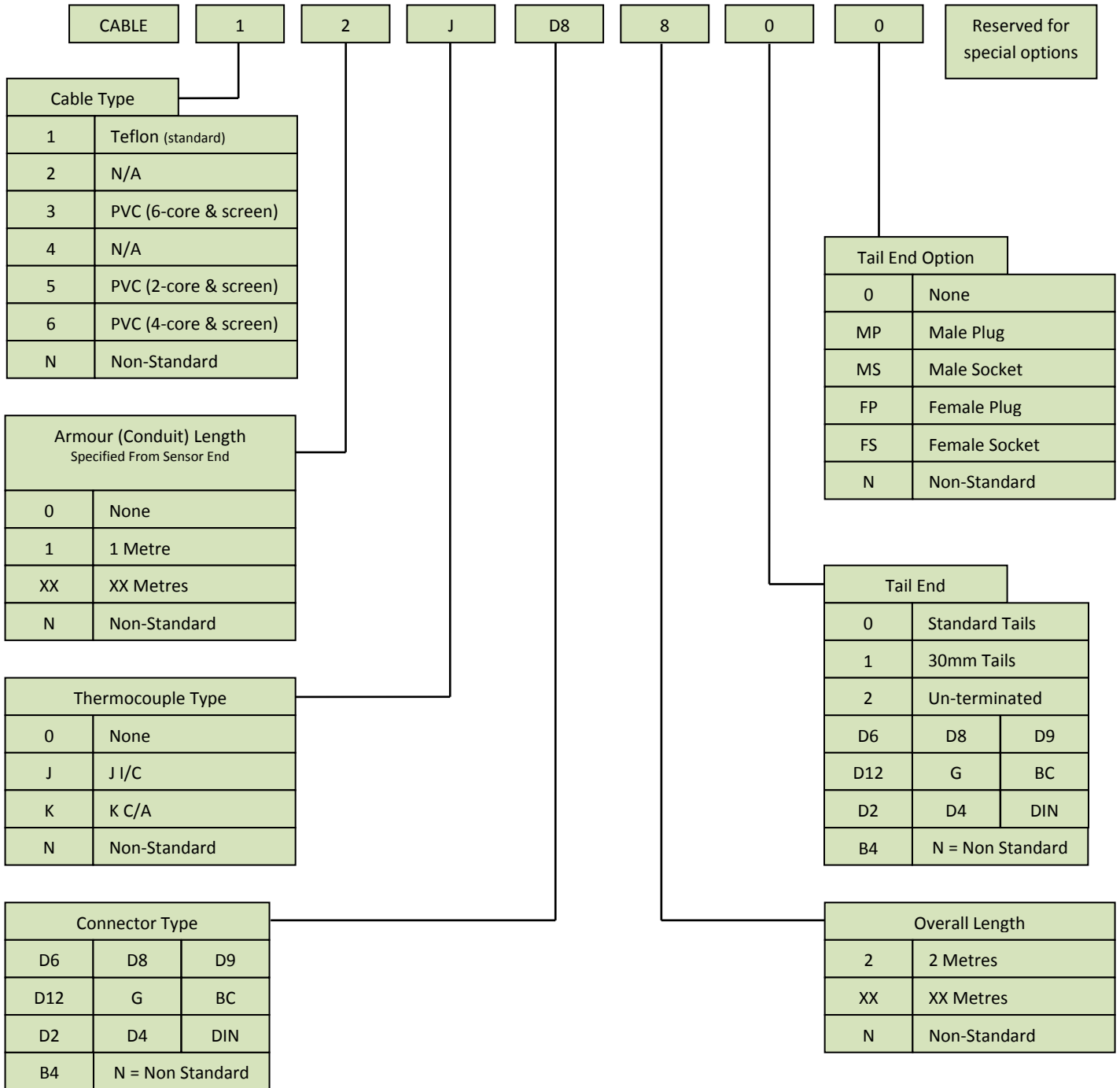


Cable Assemblies For Terwin Extrusion Pressure / Temperature Transducers & Transmitters

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Cable Assembly Part Numbers:

Example: Terwin 8 metre 8 core & screen cable assembly, including twin type J I/C thermocouple extension leads. The first 2 metres to be fitted with stainless steel armoured and fitted with a D8 strain relief connector on one end and flying tails on the other.





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Terwin "TEBP" Series Extrusion Burst Plugs



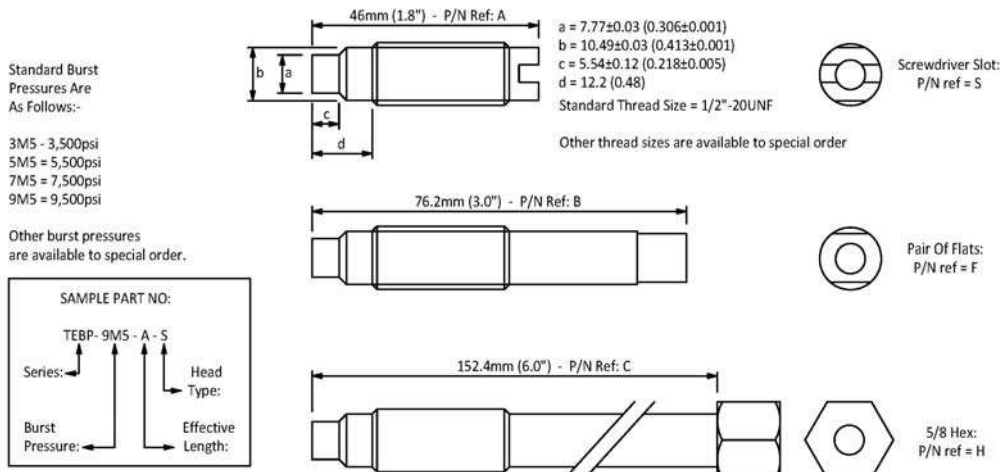
The Terwin TEBP-Series burst plugs are specifically designed for use in extruders where the maximum process temperature does not exceed 410°C (750°F).

The TEBP Series is designed to provide a reliable last line of defence against the build up of excessive pressure. The instantaneously rupture at a predetermined pressure.

Features:

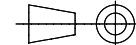
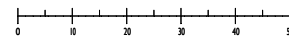
- ✓ Standard burst pressures from stock.
- ✓ Available in 3 standard lengths.
- ✓ Reliable.
- ✓ Accuracy ±5%
- ✓ Simple intrinsically safe design.

- ✓ Low installation & maintenance costs.



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IF IN DOUBT ASK
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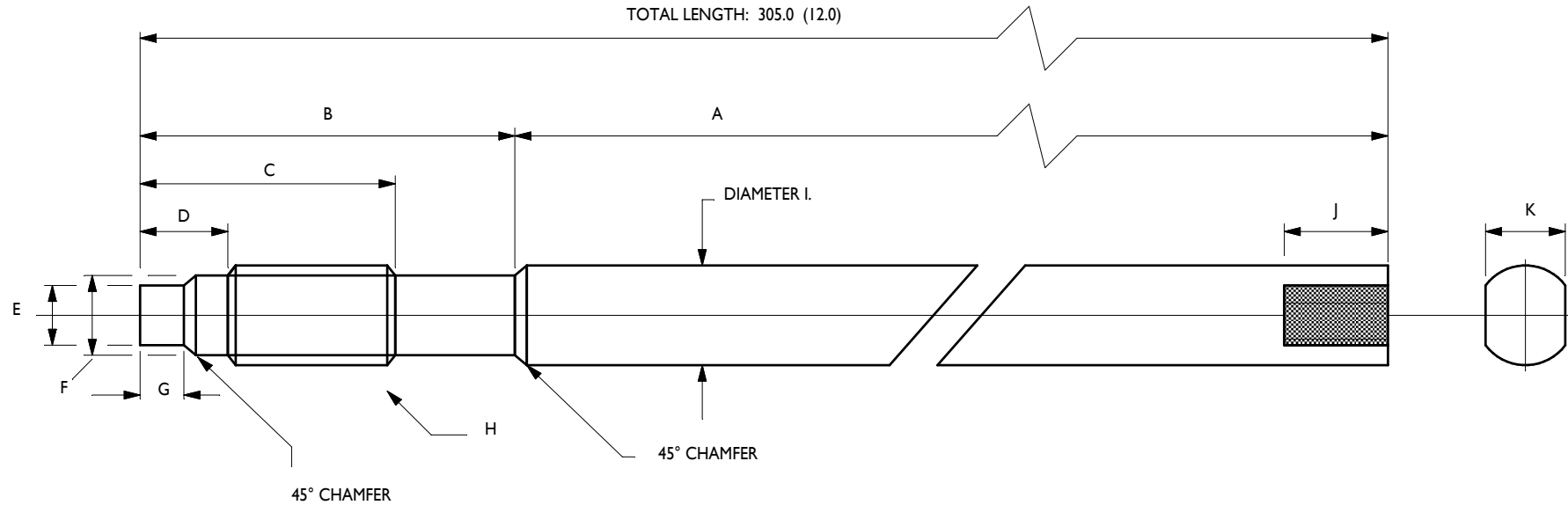


ALL DIMENSIONS
IN MILLIMETRES

U.S.O.

SCALE
N/A

THIS IS A C.A.D. DRAWING
DO NOT ALTER MANUALLY



A	258 (10.15)
B	47 (1.85)
C	31.3 (1.23)
D	12.2 (0.48)
E	7.77±0.03 (0.306±0.001)
F	10.49±0.03 (0.413±0.001)
G	5.54±0.12 (0.218±0.005)
H	1/2-20-UNF-2A
I	12.7 (0.50)
J	12.7 (0.50)
K	10 A/F (0.39)

Terwin Part No: 210-4000

NOTE: Surface finish to be N6 or better.



**Terwin
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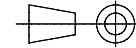
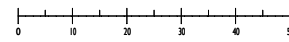
DRAWN	G.W.
DATE	07.10.96
CHECKED	P.W.
APPROVED	G.W.

DRG. NO.	MPD/2000/0241
CAD REF.	TI241
MATERIAL:	303 STAINLESS STEEL
TOLERANCES:	±0.05 ANGLES ±0.25° CONCENTRICITY: ALL DIA'S WITHIN 0.05 T.I.R.
TITLE	PRESSURE TRANSDUCER BLANKING BOLT

ISS	DATE	DESCRIPTION	APP'D
A	07.10.96	IST ISSUE	G.W.

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ALL DIMENSIONS
IN MILLIMETRES

U.S.O.

SCALE
n/a

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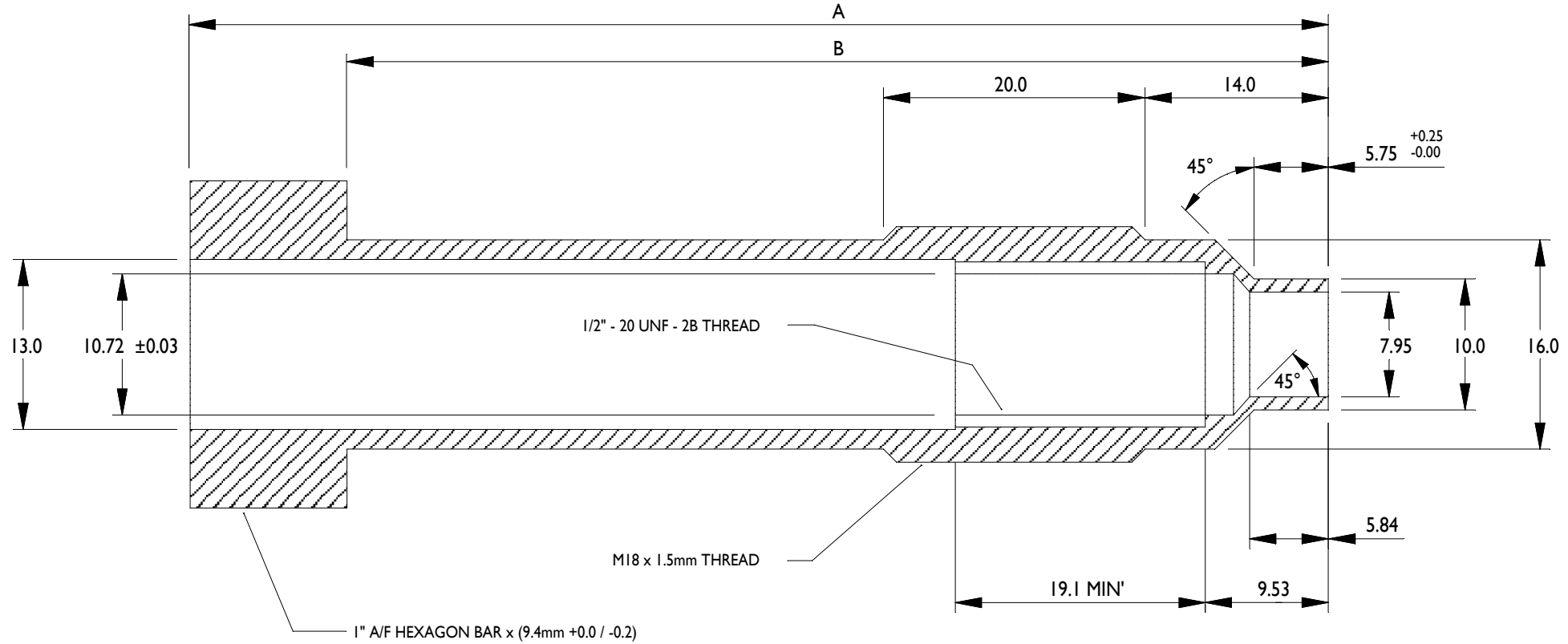
A

B

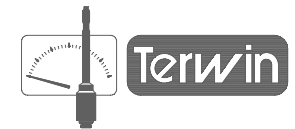
C

D

E



TRANSDUCER MODEL	STEM LENGTH	TERWIN P/N	DIM 'A' OVERALL LENGTH	DIM 'B' EFFECTIVE LENGTH
1075/2075	92.5mm (3.64")	210-3003	87.5mm	78.1mm
1076/2076	152.5mm (6.0")	210-3000	147.4mm	138.0mm
1079/2079	228.6mm (9.0")	210-3005	223.6mm	214.2mm
1077/2077	305.0mm (12.0)	T.B.A.	299.8mm	290.4mm



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Tel. +44 (0) 1949 84 2000
Fax. +44 (0) 1949 84 2004

DRAWN	G.W.
DATE	18.06.98
CHECKED	M.O.
APPROVED	T.W.

DRG. NO.	MCD/2000/0210 (C)
CAD REF.	TI210
TITLE	M18 x 1.5mm TRANSDUCER ADAPTORS

MATERIAL:	303 STAINLESS STEEL
TOLERANCES:	+1° / -0° ±0.05mm U.O.S. STRAIGHTNESS TO BE WITHIN 0.15 T.I.R.

C	18.6.98	HEX LENGTH REDUCED (BUHLER)	G.W.
B	24.7.96	LENGTH CORRECTION	G.W.
A	22.4.96	1ST ISSUE	G.W.
ISS	DATE	DESCRIPTION	APPD



Model μ 400P multi function process indicator/alarm controller for use with extrusion pressure transducers, hydraulic pressure sensors, load cells, T/C's, RTD's, voltage and current loop inputs.



GENERAL DESCRIPTION

The model μ 400P is a high performance process indicator/alarm controller. User configurable input and output options allow this instrument to be used in a wide range of industrial and research applications, including the measurement of pressure, weight, temperature from T/C's and RTD's, DC voltage or current loop inputs.

When used with extrusion melt pressure sensors that employ 6 wire 80% negative shunt calibration such as the Terwin 2000 series transducers, the μ 400P provides a simple automatic self-calibration feature for both zero and 80% of the applicable pressure range.

The μ 400P is provided with two alarm relays as standard and these may be configured as 'low' or 'high' with direct or inverse action. Additionally, delays in the relays action may be introduced (up to 20 seconds) and the relays may be latched with manual reset through the front key pads. Optional outputs include Modbus/RTU RS-485 serial communications and analog user configurable outputs of 0 - 5V, 0 -10V, 0 - 20mA or 4 - 20mADC. Also, an optional 24VDC output is available for use with transmitters.

This instrument has CE Certification for Safety, EMI Susceptibility, EMI Emission, Harmonics and Voltage Fluctuations.

Features include:

- Programmable range and set point functions.
- Auto zero and calibration.
- Dual set points with relay output on each.
- Optional analog and Modbus/RTU RS-485 outputs (isolated).
- 5 digit security password protection
- Switch mode power supply for use on 85 to 265V 50/60Hz. Optional 21 to 53V AC/DC supply.
- 1/8th DIN case (96mm wide x 48mm high) with plug-in electronics for ease of service.
- CE approved

µ400P Technical Specifications

Display	5 digit red LED 13mm (0.5") high, plus 2 alarm warning indicators.
Indicator Accuracy	Better than +/- 0.25% of full scale value
Inputs	Strain gauge: 350 ohms – gauge excitation 10VDC @ 100mA, DC voltage: 0 - 5 and 0 – 10V (Input impedance >1 MΩ), Current loop: 0 – 20 and 4 – 20mA (150Ω load), Thermocouples: Type 'J' 0 - 600°C or 1112°F, Type 'K' 0 - 1200°C or 2192°F, Type 'L' 0 - 600°C or 1112°F, Type 'N' 0 - 1200°C or 2192°F, Type 'R' 0 - 1600°C or 2912°F, Type 'S' 0 - 1600°C or 2912 °F, Type 'T' 0 – 400°C or 752°F. PT100 3wire: -99.9 to +200°C or -150 to +392°F and -200 to +600°C or -328 to +1112°F.
Decimal Point	Programmable through front key pads. (Linear inputs only).
Input Sensitivity	Applicable to extrusion pressure transducers only: 1mV/V to 3.7mV/VDC.
Calibration	Automatic zero and span calibration for melt pressure transducers is provided through the front keypads. For other sensors, please consult the instruction manual.
Excitation Voltage	10VDC
Setpoint Relays – Alarms	2 SPST relays rated at 1A @250VAC (resistive load). Configurable through front keypads.
Analog Outputs	Optional 0 – 5V, 0 – 10V, 0 – 20mA and 4 – 20mA. User selectable through front keypads and DIP switches.
Serial Communications	Optional MODBUS/RTU™ protocol.
Transmitter Supply	Optional 24VDC (40mA).
Power Supply	85 – 265V 50/60Hz or optional 21 to 53VAC/VDC.
Operating Temperature	0 - 50°C
Storage Temperature	-10 to +60°C
Relative Humidity	0 to 95% non condensing.
Case	ABS self extinguishing.
Weight	220 grams
Dimensions	96mm wide x 48mm high x 98mm deep (3.78" x 1.89" x 3.86")
Mounting/Panel cutout	Rear panel mounting brackets. 91.5mm w x 45.5mm h +/- 0.5mm (3.6" x 1.79") +/- 0.020"
Protection	IP50
CE Certification	Safety, EMI Susceptibility, EMI Emission, Harmonics and Voltage Fluctuations.



Represented by:



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Model μ 500PT dual channel process indicator/alarm controller. Applications include the simultaneous measurement of pressure and temperature on extruders when fitted with Terwin 2000 series transducers.



GENERAL DESCRIPTION

The model μ 500PT is a high performance dual channel process indicator/alarm controller, which can measure and display two process variables simultaneously. A typical application, is to use this instrument with a Terwin 2000 series extrusion pressure / temperature transducer which incorporates an integral thermocouple.

Channel 1 can be configured for process or temperature inputs and the 2nd channel for strain gauge applications. When used with extrusion melt pressure transducers that employ 6 wire 80% negative shunt calibration, the μ 500PT provides a simple automatic self-calibration feature for both zero and 80% of the applicable pressure range.

The μ 500PT is provided with two alarm relays as standard and these may be directed to channels 1 or 2 as required. Both relays may be configured as 'low' or 'high' with direct or inverse action and two LED indicators provide relay status. Additionally, delays in the relays action may be introduced (up to 20 seconds) and the relays may be latched with manual reset through the front key pads.

Optional outputs include Modbus/RTU RS-485 serial communications and user configurable analog outputs of 0 – 5V, 0 – 10V, 0 – 20mA or 4 – 20mADC. Also, an optional 24VDC output is available for use with transmitters.

This instrument has CE Certification for Safety, EMI Susceptibility, EMI Emissions, Harmonics and Voltage Fluctuations.

Features include:

- Programmable range and set point functions.
- Auto zero and calibration for strain gauge pressure transducers.
- Dual set points with relay output on each.
- Optional analog and Modbus/RTU RS-485 outputs (isolated).
- 5 digit security password protection
- Switch mode power supply for use on 85 to 265V 50/60Hz. Optional 21 to 53V AC/DC supply.
- 1/8th DIN case (96mm wide x 48mm high) with plug-in electronics for ease of service.
- CE approved



μ500PT Technical Specifications

Display	Both channels 1 & 2 utilize a red LED display with a character height of 10mm (0.394") plus 2 warning indicators.
Indicator Accuracy	Better than +/- 0.25% of range.
Inputs	2 independent configurable inputs. Channel 1 is allocated for process and temperature inputs and channel 2 for strain gauge applications. Configurable inputs include: Strain gauge: 350 ohms – gauge excitation 10VDC @ 100mA, DC Voltage: 0 – 5 and 0 – 10V (input impedance > 1MΩ), Current loop: 0 – 20 and 4 – 20mA (150Ω load), Thermocouples: Type 'J' 0 - 600°C or 1112°F, Type 'K' 0 - 1200°C or 2192°F, Type 'L' 0 - 600°C or 1112°F, Type 'N' 0 - 1200°C or 2192°F, Type 'R' 0 - 1600°C or 2192°F, Type 'S' 0 - 1600°C or 2192°F, Type 'T' 0 - 400°C or 752°F. PT100 3 wire: - 99.9 to 200.0°C, or -150 to +392°F and -200 to +600° or -328 to +1112°F.
Input Sensitivity	Applicable to extrusion pressure transducers only: 1mV/V to 3.7mV/V.
Calibration	Automatic zero and span calibration for melt pressure transducers is provided through the front keypads. For other sensors, please consult the instruction manual.
Excitation Voltage	10VDC
Setpoint Relays – Alarms	2 SPST relays rated at 1A @ 250VAC (resistive load). Configurable through front keypads.
Analog Outputs	Optional 0 – 5V, 0 – 10V, 0 – 20mA and 4 – 20mA. User selectable through front keypads and DIP switches.
Serial Communications	Optional MODBUS/RTU™ protocol.
Transmitter Supply	Optional 24VDC (40mA).
Power Supply	85 - 265V 50/60Hz or optional 21 – 53VAC/DC
Operating Temperature	0 - 50°C
Storage Temperature	-10 to +60°C
Relative Humidity	0 – 95% non condensing
Case	ABS self extinguishing
Weight	240gms
Dimensions	96mm wide x 48mm high x 98mm deep (3.78" x 1.89" x 3.86").
Mounting/Panel cutout	Rear panel mounting brackets. 91.5mm w x 45.5mm h +/-0.5mm (3.6" x 1.79) +/- 0.020
Protection	Protection IP50
CE Certification	Safety, EMI Susceptibility, EMI Emission, Harmonics and Voltage Fluctuations.



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