



## EXPLOSION-PROOF

### Standard Pressure Transducer AST4600

#### Overview

Constructed with a simple-yet-rugged design, the AST4600 Explosion-Proof Pressure Transducer/Transmitter stands up to a variety of applications where price and performance are critical.

- CSA approved for use in hazardous areas including:
  - Explosion-proof – Sealed & Vented Gauge Pressure Transducer (1 – 1,000 and 100 to 20,000 PSI respectively)
    - ✓ Class I Div. 1 Groups A, B, C, D
    - ✓ Class I Zone 1 Group IIC
    - ✓ ATEX/IECEX: Ex db IIC T5 Gb
  - Dust Ignition-proof – Sealed Gauge Pressure Transducer (100 to 20,000 PSI)
    - ✓ Class II Div. 1 Groups E, F, G: Type 4
    - ✓ Zone 21, group IIIC
    - ✓ ATEX/IECEX: Ex tb IIIC T100°C Db (Ta = -40°C to 85°C)

#### Applications

- Industrial OEM & Hydrogen Equipment
- Natural Gas Compressors
- Refrigeration
- Pipe Line Instrumentation
- Marine & Offshore
- Pressure Instrumentation
- Oil Platforms
- Well Head Pressure
- Power Generation
- Mining Applications
- Energy & Water Management

#### Benefits

- ANSI/ISA-12.27.01.2003 Certified “Single Seal” (no secondary seal required)
- ABS (American Bureau of Shipping) Approved
- All Stainless-Steel Construction | Rugged Design Withstands Harsh Environments
- Wide Operating Temperature | Low Static and Thermal Errors
- Suitable for High Shock and Vibration Applications
- Available in Exotic Alloys (Hastelloy, Inconel)

**Environmental Data****Ambient Temperature: 25°C (77°F) (Unless otherwise specified)**

<b>Operating Ambient</b>	-40 to 85°C (-40 to 185°F)
<b>Operating Media</b>	-40 to 125°C (-40 to 257°F)
<b>Storage</b>	-40 to 100°C (-40 to 212°F)

**Electromagnetic Compatibility (EMC)**

Standard	Description	Test Value
EN55011	Radiated Emissions	Class A, 30-1000 MHz
EN61000-4-2	Electrostatic Discharge Immunity	±8 kV Air Discharge ±4 kV Contact Discharge, VCP, HCP
EN61000-4-3	Radiated Electromagnetic Field Immunity	10V/m, 80-2700 MHz 80% 1kHz AM Modulation
EN61000-4-4	Electrical Fast Transient/Burst Immunity	±0.5 kV, ±1 kV, ±2 kV on DC Mains ±0.5 kV, ±1 kV on I/O Ports
EN61000-4-5	Surge Immunity	±0.5 kV, ±1 kV, on I/O Ports & DC Lines
EN61000-4-6	Conducted immunity	10V rms, 0.15-80 MHz, DC Mains 10V rms, 0.15-80 MHz, I/O Ports 80% 1kHz AM Modulation
EN61000-4-8	Power Frequency Magnetic Field Immunity Test	30 A/m @ (50Hz, 60Hz) 3 orthogonal orientations

**Shock, Vibration & Ingress Protection (IP)**

Standard	Description	Test Value
EN 60067-2-27	Shock Test	500m/s <sup>2</sup> , 6ms, half sine-wave, 6 shocks (3/direction), horizontal and vertical axis, 12 total shocks
EN 60068-2-6	Sinusoidal Vibration	5-25 Hz, 2mm, 25-150 Hz, 50m/s, Sweep rate: 1 octave/min, Duration: 24 hours/axis (48 hours total), horizontal and vertical axis
EN 60068-2-64	Random Vibration	10-2000 Hz, vibration level: 0.0314 (m/s <sup>2</sup> ) <sup>2</sup> /Hz, 24 hrs/axis (48 hrs total), 2 directions: horizontal and vertical
IEC 60068-2-32	Drop Test	Drop of 1 meter to floor made of concrete. Dropped twice on the threaded end and two times perpendicular to the threaded end.
IP-65 (Gauge)	Ingress Protection	Dust-tight, protected against water jets
IP-66 (Sealed Gauge)	Ingress Protection	Dust-tight, protected against powerful water jets

**Performance**

**Ambient Temperature: 25°C (77°F) (Unless otherwise specified)**

Parameters	MIN	TYP	MAX	UNITS	NOTES
Accuracy	-0.25		+0.25	%Span	1
Accuracy (Range ≥ 7.5 kPSI)	-0.50		+0.50	%Span	1
Zero Error	-1.0		+1.0	%Span	2
Span Error	-1.5		+1.5	%Span	3
Span Error (4-20mA)	-2.0		+2.0	%Span	3
Thermal Error, Zero	-1.5		+1.5	%Span	4
Thermal Error, Span	-1.5		+1.5	%Span	5
Stability (1 year)		±0.25		%Span	
Proof Pressure		2X Rated Pressure		PSI	6
Burst Pressure		5X Rated Pressure or 50,000 (whichever is less)		PSI	7
Pressure Cycles	10 Million			Cycles	
Compensated Temp. Range		0 - 55° (32 to 132°)		°C (°F)	

**Electrical Data**

Model	AST4600		
Output	4-20mA	1-5V, 1-6V	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5.0 ± 0.5VDC
Output Impedance	> 10k Ω	< 100 Ω	< 100 Ω
Current Consumption	-	<10mA	<10mA
Output Noise	-	<2mV RMS	<2mV RMS
Output Load	0-800Ω	10k Ω Min.	10k Ω Min.
Reverse Polarity Protection	Yes	Yes	Yes
Bandwidth	DC-250 Hz	DC-1kHz	DC-1kHz

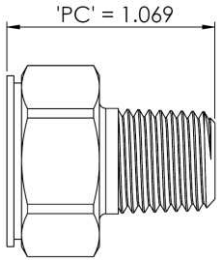
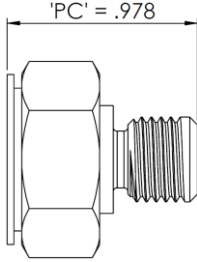
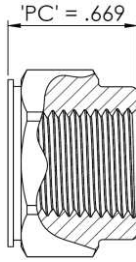
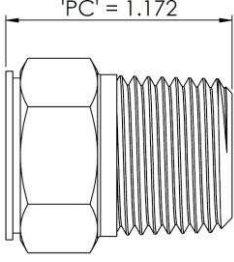
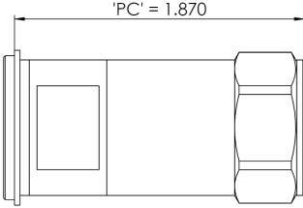
**Notes**

1. The maximum deviation from a best fit straight line (BFSL) fitted to the output measured over the pressure range at 25°C. Includes all errors due to pressure non-linearity, hysteresis, and non-repeatability. Span is the algebraic difference between full scale output and zero pressure offset.
2. The maximum variation from the ideal offset measured at 25°C.
3. The maximum variation from the ideal full-scale span measured at 25°C.
4. The maximum variation of offset within the compensated temperature range relative to 25°C.
5. The maximum variation of full-scale span within the compensated temperature range relative to 25°C.
6. The maximum pressure that can be safely applied to the product for it to remain in specification once pressure is returned to the operating pressure range.
7. The maximum pressure that can be applied without causing escape of the pressure media

**Dimensions & Electrical Connection**

Unless otherwise specified, all dimensions are in inches

<p><i>EC + SH + PC = Total Nominal Product Length</i></p>	<p><b>Ranges 25 PSI and Above</b></p> <p>EC = Electrical Connector          SH = Sensor Housing          PC = Process Connection          V = Voltage Supply          N/C = Not Connected          WP = Wide Pin          S = Signal</p>															
<p><i>EC + SH + PC = Total Nominal Product Length</i></p>	<p><b>Ranges Below 25 PSI</b></p> <p>EC = Electrical Connector          SH = Sensor Housing          PC = Process Connection          V = Voltage Supply          N/C = Not Connected          WP = Wide Pin          S = Signal</p>															
<b>Electrical Connectors Option Codes</b>																
<b>Cable</b>																
<b>T</b> 2ft (0.6m)	<b>U</b> 4ft (1.2m)	<b>W</b> 6ft (2m)														
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Color</th> <th>3 Wire Voltage</th> <th>4-20mA</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>Case</td> <td>Case</td> </tr> <tr> <td>Black</td> <td>GND</td> <td>-V</td> </tr> <tr> <td>Red</td> <td>+V</td> <td>+V</td> </tr> <tr> <td>White</td> <td>S</td> <td>N/C</td> </tr> </tbody> </table>	Color	3 Wire Voltage	4-20mA	Green	Case	Case	Black	GND	-V	Red	+V	+V	White	S	N/C	<p style="text-align: center;">Individual Wires are 18 AWG</p>
Color	3 Wire Voltage	4-20mA														
Green	Case	Case														
Black	GND	-V														
Red	+V	+V														
White	S	N/C														

Pressure Port Option Codes				
<b>A</b> 1/4 NPT Male	<b>F</b> 7/16 – 20 UNF Male	<b>I</b> 1/4 NPT Female	<b>P</b> 1/2 NPT Male	
 <p>'PC' = 1.069</p>	 <p>'PC' = .978</p>	 <p>'PC' = .669</p>	 <p>'PC' = 1.172</p>	
<th><b>W</b> F250C Female Autoclave</th>				<b>W</b> F250C Female Autoclave
 <p>'PC' = 1.870</p>				

Legend	
✓	Standard Available
X	Not Available

**Available Process Connection, Material Configurations & Pressure Codes**

**17-4PH PSI**

Pressure Range	Pressure Reference	Pressure Range Code	PSI Unit	Process Connection Code				
				A	F	I	P	W
-14.7 - 25	V	0025	P	✓	X	✓	✓	X
-14.7 - 50	V	0050	P	✓	✓	✓	✓	X
-14.7 - 100	V	0100	P	✓	✓	✓	✓	X
-14.7 - 150	V	0150	P	✓	✓	✓	✓	X
-14.7 - 200	V	0200	P	✓	✓	✓	✓	X
-14.7 - 250	V	0250	P	✓	✓	✓	✓	X
-14.7 - 500	V	0500	P	✓	✓	✓	✓	X
0 - 25	G	0025	P	✓	X	✓	✓	X
0 - 50	G	0050	P	✓	✓	✓	✓	X
0 - 100	G	0100	P	✓	✓	✓	✓	X
0 - 150	G	0150	P	✓	✓	✓	✓	X
0 - 200	G	0200	P	✓	✓	✓	✓	X
0 - 250	G	0250	P	✓	✓	✓	✓	X
0 - 500	G	0500	P	✓	✓	✓	✓	X
0 - 1,000	0	1000	P	✓	✓	✓	✓	X
0 - 2,500	0	2500	P	✓	✓	✓	✓	X
0 - 5,000	0	5000	P	✓	✓	✓	✓	X
0 - 7,500	0	7500	P	✓	✓	✓	✓	X
0 - 10,000	1	0000	P	✓	✓	✓	✓	X
0 - 15,000	1	5000	P	X	✓	✓	✓	X
0 - 20,000	2	0000	P	X	X	X	X	✓

**17-4PH Bar**

Pressure Range	Pressure Reference	Pressure Range Code	BAR Unit	Process Connection Code				
				A	F	I	P	W
-1 to 2	V	0002	B	✓	✓	✓	✓	X
-1 to 5	V	0005	B	✓	✓	✓	✓	X
-1 to 7	V	0007	B	✓	✓	✓	✓	X
-1 to 10	V	0010	B	✓	✓	✓	✓	X
-1 to 20	V	0020	B	✓	✓	✓	✓	X
0 - 2	G	0002	B	✓	✓	✓	✓	X
0 - 5	G	0005	B	✓	✓	✓	✓	X
0 - 7	G	0007	B	✓	✓	✓	✓	X
0 - 10	G	0010	B	✓	✓	✓	✓	X
0 - 20	G	0020	B	✓	✓	✓	✓	X
0 - 35	G	0035	B	✓	✓	✓	✓	X
0 - 50	G	0050	B	✓	✓	✓	✓	X
0 - 100	0	0100	B	✓	✓	✓	✓	X
0 - 250	0	0250	B	✓	✓	✓	✓	X
0 - 350	0	0350	B	✓	✓	✓	✓	X
0 - 500	0	0500	B	✓	✓	✓	✓	X
0 - 700	0	0700	B	✓	✓	✓	✓	X
0 - 1,000	0	0000	B	X	X	✓	✓	X

# INDUSTRIAL OEM

AST4600 Pressure Transmitter

## 316L PSI

Pressure Range	Pressure Reference	Pressure Range Code	PSI Unit	Process Connection Code				
				A	F	I	P	W
0 - 1	G	0001	P	✓	X	X	✓	X
0 - 2.5**	G	0069	H	✓	X	X	✓	X
0 - 5	G	0005	P	✓	X	X	✓	X
0 - 7.5**	G	0208	H	✓	X	X	✓	X
0 - 10	G	0010	P	✓	X	X	✓	X
0 - 15	G	0015	P	✓	X	X	✓	X
-14.7 - 25	V	0025	P	✓	X	X	✓	X
-14.7 - 50	V	0050	P	✓	X	✓	✓	X
-14.7 - 100	V	0100	P	✓	✓	✓	✓	X
-14.7 - 150	V	0150	P	✓	✓	✓	✓	X
-14.7 - 200	V	0200	P	✓	✓	✓	✓	X
-14.7 - 250	V	0250	P	✓	✓	✓	✓	X
-14.7 - 500	V	0500	P	✓	✓	✓	✓	X
0 - 25	G	0025	P	✓	X	✓	✓	X
0 - 50	G	0050	P	✓	✓	✓	✓	X
0 - 100	G	0100	P	✓	✓	✓	✓	X
0 - 150	G	0150	P	✓	✓	✓	✓	X
0 - 200	G	0200	P	✓	✓	✓	✓	X
0 - 250	G	0250	P	✓	✓	✓	✓	X
0 - 500	G	0500	P	✓	✓	✓	✓	X
0 - 1,000	0	1000	P	✓	✓	✓	✓	X
0 - 2,500	0	2500	P	✓	✓	✓	✓	X
0 - 5,000	0	5000	P	✓	✓	✓	✓	X
0 - 7,500	0	7500	P	✓	✓	✓	✓	X
0 - 10,000	1	0000	P	✓	✓	✓	✓	X
0 - 15,000	1	5000	P	X	✓	✓	X	X
0 - 20,000	2	0000	P	X	X	X	X	✓

## 316L Bar

Pressure Range	Pressure Reference	Pressure Range Code	BAR Unit	Process Connection Code				
				A	F	I	P	W
-1 to 2	V	0002	B	✓	✓	✓	✓	X
-1 to 5	V	0005	B	✓	✓	✓	✓	X
-1 to 7	V	0007	B	✓	✓	✓	✓	X
-1 to 10	V	0010	B	✓	✓	✓	✓	X
-1 to 20	V	0020	B	✓	✓	✓	✓	X
0-2	G	0002	B	✓	✓	✓	✓	X
0-5	G	0005	B	✓	✓	✓	✓	X
0-7	G	0007	B	✓	✓	✓	✓	X
0-10	G	0010	B	✓	✓	✓	✓	X
0-20	G	0020	B	✓	✓	✓	✓	X
0-35	G	0035	B	✓	✓	✓	✓	X
0-50	G	0050	B	✓	✓	✓	✓	X
0-100	0	0100	B	✓	✓	✓	✓	X
0-250	0	0250	B	✓	✓	✓	✓	X
0-350	0	0350	B	✓	✓	✓	✓	X
0-500	0	0500	B	✓	✓	✓	✓	X
0-700	0	0700	B	✓	✓	✓	✓	X
0-1000	0	0000	B	X	✓	✓	X	X

# INDUSTRIAL OEM

AST4600 Pressure Transmitter

## Inconel PSI

Pressure Range	Pressure Reference	Pressure Range Code	PSI Unit	Process Connection Code				
				A	F	I	P	W
-14.7 - 25	V	0025	P	✓	X	X	✓	X
-14.7 - 50	V	0050	P	✓	X	X	✓	X
-14.7 - 100	V	0100	P	✓	X	X	✓	X
-14.7 - 150	V	0150	P	✓	X	X	✓	X
-14.7 - 200	V	0200	P	✓	X	X	✓	X
-14.7 - 250	V	0250	P	✓	X	X	✓	X
-14.7 - 500	V	0500	P	✓	X	X	✓	X
0 - 25	G	0025	P	✓	X	X	✓	X
0 - 50	G	0050	P	✓	X	X	✓	X
0 - 100	G	0100	P	✓	X	X	✓	X
0 - 150	G	0150	P	✓	X	X	✓	X
0 - 200	G	0200	P	✓	X	X	✓	X
0 - 250	G	0250	P	✓	X	X	✓	X
0 - 500	G	0500	P	✓	X	X	✓	X
0 - 1,000	0	1000	P	✓	X	X	✓	X
0 - 2,500	0	2500	P	✓	X	X	✓	X
0 - 5,000	0	5000	P	✓	X	X	✓	X
0 - 7,500	0	7500	P	✓	X	X	✓	X
0 - 10,000	1	0000	P	✓	X	X	✓	X
0 - 15,000	1	5000	P	X	X	✓	✓	X
0 - 20,000	2	0000	P	X	X	X	X	✓

## Inconel Bar

Pressure Range	Pressure Reference	Pressure Range Code	BAR Unit	Process Connection Code				
				A	F	I	P	W
-1 to 2	V	0002	B	✓	X	X	✓	X
-1 to 5	V	0005	B	✓	X	X	✓	X
-1 to 7	V	0007	B	✓	X	X	✓	X
-1 to 10	V	0010	B	✓	X	X	✓	X
-1 to 20	V	0020	B	✓	X	X	✓	X
0-2	G	0002	B	✓	X	X	✓	X
0-5	G	0005	B	✓	X	X	✓	X
0-7	G	0007	B	✓	X	X	✓	X
0-10	G	0010	B	✓	X	X	✓	X
0-20	G	0020	B	✓	X	X	✓	X
0-35	G	0035	B	✓	X	X	✓	X
0-50	G	0050	B	✓	X	X	✓	X
0-100	0	0100	B	✓	X	X	✓	X
0-250	0	0250	B	✓	X	X	✓	X
0-350	0	0350	B	✓	X	X	✓	X
0-500	0	0500	B	✓	X	X	✓	X
0-700	0	0700	B	✓	X	X	✓	X
0 - 1,000	0	1000	B	X	X	X	✓	X

# INDUSTRIAL OEM

AST4600 Pressure Transmitter

## Hastelloy PSI

Pressure Range	Pressure Reference	Pressure Range Code	PSI Unit	Process Connection Code				
				A	F	I	P	W
0 - 1	G	0001	P	X	X	X	✓	X
0 - 10	G	0010	P	X	X	X	✓	X
0 - 15	G	0015	P	X	X	X	✓	X
-14.7 - 25	V	0025	P	✓	X	X	✓	X
-14.7 - 50	V	0050	P	✓	X	X	✓	X
-14.7 - 100	V	0100	P	✓	X	X	✓	X
-14.7 - 150	V	0150	P	✓	X	X	✓	X
-14.7 - 200	V	0200	P	✓	X	X	✓	X
-14.7 - 250	V	0250	P	✓	X	X	✓	X
-14.7 - 500	V	0500	P	✓	X	X	✓	X
0 - 25	G	0025	P	✓	X	X	✓	X
0 - 50	G	0050	P	✓	X	X	✓	X
0 - 100	G	0100	P	✓	X	X	✓	X
0 - 150	G	0150	P	✓	X	X	✓	X
0 - 200	G	0200	P	✓	X	X	✓	X
0 - 250	G	0250	P	✓	X	X	✓	X
0 - 500	G	0500	P	✓	X	X	✓	X
0 - 1,000	0	1000	P	✓	X	X	✓	X
0 - 2,500	0	2500	P	✓	X	X	✓	X
0 - 5,000	0	5000	P	✓	X	X	✓	X
0 - 7,500	0	7500	P	✓	X	X	✓	X
0 - 10,000	1	0000	P	✓	X	X	✓	X
0 - 15,000	1	5000	P	X	X	X	✓	X

## Hastelloy Bar

Pressure Range	Pressure Reference	Pressure Range Code	BAR Unit	Process Connection Code				
				A	F	I	P	W
-1 to 2	V	0002	B	✓	X	X	✓	X
-1 to 5	V	0005	B	✓	X	X	✓	X
-1 to 7	V	0007	B	✓	X	X	✓	X
-1 to 10	V	0010	B	✓	X	X	✓	X
-1 to 20	V	0020	B	✓	X	X	✓	X
0-2	G	0002	B	✓	X	X	✓	X
0-5	G	0005	B	✓	X	X	✓	X
0-7	G	0007	B	✓	X	X	✓	X
0-10	G	0010	B	✓	X	X	✓	X
0-20	G	0020	B	✓	X	X	✓	X
0-35	G	0035	B	✓	X	X	✓	X
0-50	G	0050	B	✓	X	X	✓	X
0-100	0	0100	B	✓	X	X	✓	X
0-250	0	0250	B	✓	X	X	✓	X
0-350	0	0350	B	✓	X	X	✓	X
0-500	0	0500	B	✓	X	X	✓	X
0-700	0	0700	B	✓	X	X	✓	X
0 - 1,000	0	1000	B	X	X	X	✓	X

\*See Ordering Information for list of options  
 \*\*Must be order in inches H<sub>2</sub>O

# INDUSTRIAL OEM

AST4600 Pressure Transmitter

## Ordering Information

<b>AST4600</b>	<b>A</b>	<b>1</b>	<b>0000</b>	<b>P</b>	<b>4</b>	<b>T</b>	<b>1</b>	<b>000</b>	<b>-Z</b>
<p><b>Process Connection</b>          A= 1/4" NPT Male          F= 7/16"-20 UNF Male          I= 1/4" NPT Female          P= 1/2" NPT Male          W= F250C Female Autoclave</p>									
<p><b>Pressure Reference</b>          G= Gauge Pressure          V= Gauge Pressure (Vacuum Calibrated)          0= Sealed Gauge (Up to 9,999 PSI)          1= Sealed Gauge (10,000 to 19,999 PSI)          2= Sealed Gauge (20,000 PSI Only)</p>									
<p><b>Pressure Range</b>          Insert Pressure Range Code (see table for availability)</p>									
<p><b>Pressure Unit</b>          B= Bar      P= PSI</p>									
<p><b>Output</b>          1= 0.5-4.5V ratiometric      3= 1-5V      4= 4-20mA      6= 1-6V</p>									
<p><b>Electrical</b>          T= 2ft. 18 AWG wires      U= 4ft. 18 AWG wires      W= 2 Meter 18 AWG wires</p>									
<p><b>Wetted Material</b>          0= 17-4PH      1= 316L      2= Inconel 718      4= Hastelloy C276</p>									
<p><b>Option Codes</b>          000= No Options</p>									

### Approval Type

Leave Blank	Class I Div I, Groups A, B, C and D; Ex d IIC T5 Gb Class 1, Zone 1, AEx d IIC T5 Gb (For Pressure Range Code 0, 1 and 2)
	Class II, Div. I, Groups E, F and G Ex tb IIIC T100 Db Zone 21, AEx tb IIIC T100 Db (For Pressure Range Code G and V)
All configurations are ANSI/ISA 12.27.01 Single Seal Approved	
-Z	CRN Registered to ANSI/ASME B31.3. in addition to standard configuration approvals

**Notes:** CSA approved products require case/earth ground electrical connection. See Dimensions and Electrical Connection Section for wiring details.

### NORTH AMERICA

American Sensor Technologies, Inc. (AST),  
 a TE Connectivity Company  
 Tel: 800-522-6752  
 Email: [customercare.molive@te.com](mailto:customercare.molive@te.com)

### ASIA

Hong Kong Sensor Technologies (HKST),  
 a TE Connectivity Company  
 Tel: 0400-820-6015  
 Email: [customercare.shzn@te.com](mailto:customercare.shzn@te.com)

### TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.