

INPUT MODULE PRICE LIST

Unless otherwise specified Texmate will ship all modules precalibrated with factory preselected ranges and/or scalings as shown in **BOLD** type

IA01	AC-Volts Scaled RMS, 200/ 600V AC
IA02	AC-Volts Scaled RMS, 200mV/ 2V/20V AC
IA03	AC-mA Scaled RMS, 2/20/200mA AC
IA04	AC-Amps Scaled RMS, 0-1 Amp AC (0-100.00)
IA05	AC-Amps Scaled RMS, 0-5 Amp AC (0-100.00)
IA06	AC-Volts True RMS, 200/ 600V AC
IA07	AC-Volts True RMS, 200mV/ 2V/20V AC
IA08	AC-mA True RMS, 2/20/200mA AC
IA09	AC-Amps True RMS, 0-1 Amp AC (0-100.00)
IA10	AC-Millivolt, Scaled RMS, 100mV AC
IA11	AC-Amps True RMS, 0-5 Amp AC (0-100.00)
IA12	AC-Millivolt, True RMS, 100mV AC
IC02	Quadrature Counter
IC03	Quadrature Counter with Dual SSRs
ID01	DC-Volts, 2/20/200V/Custom w/24V DC Exc.
ID02	DC-Millivolt, 20/50/ 100/200mV DC w/24V DC Exc
ID03	DC-Milliamp, 2/20/200mA DC w/24V DC Exc.
ID04	DC-Amps, 5A DC
ID05	DC-Volts 2/20/200/Custom V DC w/Offset and 24V Exc.
ID06	DC-Volts 2/20/200/Custom V DC w/Ext.Decimal Select
ID07	DC-Milliamp, 2/20/200mA DC w/Offset and 24V Exc
ID08	DC-Volts, 2/20/200/Custom V DC w/Ext.LIN Table Select.
ID09	DC-Amps, 1A DC
IDC1	Dual Input, Counter.
IDD1	Dual Input, Volts DC/Volts DC, 2V DC
IDD2	Dual Input DC-Millivolts, 50mV DC(100.00)
IDD3	Dual Input DC-Milliamps, 2mA DC
IDD4	Dual Input, Volts/millivolts 2V/50mV DC(100.00)
IDD5	Dual Input DC Volts and 4-20 mA
IDD6	Dual Input DC mV and 4-20 mA
IDF2	Dual Frequency
IDP1	Dual Process Loop Input, 4-20mA (0-100.00)
IDP2	Dual Input, 3-wire RTD / 4-20mA (0-100.00)
IDP3	Dual Input, K/R/S/T/J Thermocouple / 4-20mA(0-100.00)
IDP4	Dual Universal Process 2V/5V/10V/20V/200V/2mA/20mA/Custom
IDR1	Dual Resistance Input, 0.2/2/20K Ω
IDS1	Dual Strain Gage Input, 4 wire 2mV/V
IDS2	Dual Pressure Input, 4 wire 2mV/V
IDS3	Dual Input, Strain Gage and Frequency
IDT1	Dual Thermocouple Input J/K/R/T
IDT2	Dual RTD Input, 2- and 3-wire, 100Ω Pt.
IDT3	Dual Input, 3-wire RTD / Volts 2V DC
IDT4	Dual Input, Thermocouple / Volts 2V DC
IDT5	Dual Input, K/R/S/T/J Thermocouple / DC-Millivolts, 50mV DC
IDT6	Dual Input, Thermocouple and Load Cell
IF02	Line Frequency, 50-500VAC, 199.9Hz, or optional 400Hz.
IF05	Frequency 2mV/5V with Excitation
IF06	Line Frequency, 50-500VAC
IF08	Line Frequency
IF10	Universal Frequency / RPM / UP DOWN Counter
IGYX*	Direct Pressure (Abs. or Differential/Gage) with 2 Digital Inputs
IGYY*	Dual Direct Pressure (Absolute or Differential/Gage)
IGYZ*	Universal Direct Pressure
*View the IG- Ordering Codes on page 8 to determine the value for X, Y & Z (IGAA to IGKZ)	
IH01	pH Indication w/ Manual Temperature Compensation
IH02	pH Indication w/ Automatic Temperature Compensation
IOR1	Oxidation Reduction Potential (ORP)
IP01	Process Loop, 4-20mA (0-100.00)
IP02	Process Loop, 4-20mA(0-100.00) w/24VDC Exc.
IP03	Process Input, 1-5V DC(0-100.00) w/Offset, 24V Exc
IP06	Process Loop, 4-20mA(0-100.00) w/24VDC Exc and Autocal
IP07	Universal Process 2V/5V/10V/20V/200V/2mA/20mA/Custom
IP08	Universal Process 2V/5V/10V/20V/200V/2mA/20mA/Custom w/Autocal
IP09	Process Loop, 4-20mA (0-100.00) w/ External Lin Table select.
IP10	Process + 3 Digital Inputs.
IPT1	Prototype Board for Custom Design
IQD1	Quad DC Volts, 2V DC
IQD2	Quad DC-Millivolts, 50mV DC(100.00)
IQP1	Quad Process Loop, 4-20mA (0-100.00)
IQT2	Quad RTD Input, 2-Wire, 100 Ω Pt.
IQT4	Quad RTD Input, 4-wire, 100 Ω Pt
IQT5	Quad - Thermocouple / V / V / Frequency
IR01	Resistance, 2-, 3-, or 4-Wire, 200 Ω / 2KΩ/20KΩ
IR02	3-Wire Potentiometer 1K Ω min (0-F.S.)
IR03	Linear Potentiometer, 3-wire, 1K Ω min
IR04	Resistance 2K Ω (Lynx)
IR05	Resistance 2K Ω (Leopard)
ISD1*	Smart DCV, High Speed 16 bit, 1, 10, 50, 200, 400, 800 Hz update rates
ISD2**	Smart DCV, High Speed 16 bit, 1, 10, 60, 240, 480, 960 Hz update rates
ISD3*	Smart DCV, High Speed 16 bit, 1Hz to 800Hz w/dual isolated SSRs.

ISD4**	Smart DCV, High Speed 16 bit, 1Hz to 960Hz w/dual isolated SSRs. . . .
ISD5*	Smart DCV, Hi Resolution & Accuracy 24 bit (1 million counts) 1-400Hz . . .
ISD6**	Smart DCV, Hi Resolution & Accuracy 24 bit (1 million counts) 1-480Hz . .
ISD7*	Smart DCV, Hi Resolution & Accuracy 24 bit 1-400Hz w/dual isolated SSRs. .
ISD8**	Smart DCV, Hi Resolution & Accuracy 24 bit 1-480Hz w/dual isolated SSRs. .
ISD9	Smart Voltage Resistance
ISDA*	Smart Dual Input DC Volts, 16 bit, 1Hz to 20Hz update (50 Hz rejection) . . .
ISDB**	Smart Dual Input DC Volts, 16 bit, 1Hz to 20Hz update (60 Hz rejection) . . .
ISL1*	Smart Dual LVDT (50 Hz rejection)
ISL2**	Smart Dual LVDT (60 Hz rejection)
ISM1	Smart Magnetostrictive
ISO1	Strain Gage 5/10VDC Exc., 20/2mV/V, 4/6-wire
ISO2	Pressure 5/10VDC Exc., 20/2mV/V, 4- or 6-wire
ISO3	Pressure 5/10VDC Exc., 20/2mV/V, 4/6-wire w/Autocal
ISO4	Pressure Ext Exc., 20/2mV/V, 4- or 6-wire
ISO5	Pressure/Load Cell 20/2mV/V, 5/10V Exc 4-wire
ISO6	Pressure/Load Cell Ext Exc., 20/2mV/V, 4-wire
ISO7	Pressure 20/2mV/V with High Impedance and External Excitation
ISP1	Smart Triple Input, Pressure Direct and Dual Counter (Frequency/Counter) . . .
ISR1*	Smart Single 3-wire Potentiometer (50 Hz)
ISR2**	Smart Single 3-wire Potentiometer (60 Hz)
ISR3*	Smart Dual 3-wire Potentiometer (50 Hz)
ISR4**	Smart Dual 3-wire Potentiometer (60 Hz)
ISS1*	Smart Pressure/Load Cell. Standard Resolution 16 bit (50 Hz rejection)
ISS2**	Smart Pressure/Load Cell. Standard Resolution 16 bit (60 Hz rejection)
ISS3*	Smart Pressure/Load Cell. Hi Res & Accuracy 24 bit (50 Hz rejection)
ISS4**	Smart Pressure/Load Cell. Hi Res & Accuracy 24 bit (60 Hz rejection)
ISS5*	Dual Smart Pressure/Load Cell. Standard Resolution 16 bit (50 Hz)
ISS6**	Dual Smart Pressure/Load Cell. Standard Resolution 16 bit (60 Hz)
ISS7*	Smart Quad Pressure/Load Cell (50 Hz)
ISS8**	Smart Quad Pressure/Load Cell (60 Hz)
ISS9	Smart Dual Input, Load Cell and Process (4-20mA)
ISSA	Smart Quad Potentiometer/Resistance
ISSB	Smart Dual Input, Load Cell and RTD
ISSC*	Smart Triple Input, Load Cell and two Digital Inputs (Frequency/Counter)
ISSD**	Smart Triple Input, Load Cell and two Digital Inputs (Frequency/Counter)
ISSE	Smart Dual Photo Diode Input
IST1*	Smart Six Inputs, 3 Pt 100 RTD, 2 Process and 1 Digital Input (50 Hz)
IST2**	Smart Six Inputs, 3 Pt 100 RTD, 2 Process and 1 Digital Input (60 Hz)
IST3*	Smart Quad Thermocouple (50 Hz)
IST4**	Smart Quad Thermocouple (60 Hz)
IST5*	Smart Dual RTD (50 Hz)
IST6**	Smart Dual RTD (60 Hz)
IT01	Thermocouple Input, J/K/R/S/T/B/N
IT02	RTD, 100 Ω Pt. 2-, 3-, or 4-wire
IT03	RTD, 100 Ω Pt. 2/3/4-wire (-200 to 800 $^{\circ}$ C)
IT04	RTD, 100 Ω Pt. 2/3/4-wire (-200 to 1470 $^{\circ}$ F)
IT05	RTD, 100 Ω Pt. 2/3/4-wire (-199.9 to 199.9 $^{\circ}$ F)
IT06	Thermocouple, J Type (0-1400$^{\circ}$F)
IT07	Thermocouple, K Type (0-1999$^{\circ}$F)
IT08	Thermocouple, J Type (0-760$^{\circ}$C)
IT09	Thermocouple, K Type (0-1260$^{\circ}$C)
IT10	Thermocouple, J/K/R/T, Selectable $^{\circ}$C/$^{\circ}$F, 1$^{\circ}$/0.1$^{\circ}$
IT11	RTD, 100 Ω Pt. Selectable 3/4-wire, $^{\circ}$ C/ $^{\circ}$ F, 1 $^{\circ}$ /0.1 $^{\circ}$, 385/392
IT12	RTD, 120 Ω Nickel 2/3/4-wire.
IT13	RTD, 10 Ω Copper 2/3/4-wire.
IT14	RTD, 100 Ω Pt. 2/3/4-wire (-199.9 to 199.9 $^{\circ}$ C)
IT15	RTD, 1000 Ω Pt. Selectable 3/4-wire, $^{\circ}$ C/ $^{\circ}$ F, 1 $^{\circ}$ /0.1 $^{\circ}$, 385/392
ITD1	Triple DC Volts, 2V DC
ITD2	Triple DC-Millivolts, 50mV DC(100.00)
ITP1	Triple Process Loop, 4-20mA (0-100.00)
ITT1	Triple Thermocouple
ITT2	Triple RTD Input, 2-wire, 100 Ω Pt
ITT3	Triple Input, Dual Thermocouple J/K/R/S/T/B/N and DCV 2V
ITT4	Triple Input, Dual Thermocouple J/K/R/S/T/B/N and 4 to 20mA
ITT5	Triple Input, Dual Thermocouple J/K/R/S/T/B/N and DC MV
ITT6	Triple Input, Thermocouple J/K/R/S/T/B/N and Dual DC MV
ITT7	Triple Input, Thermocouple J/K/R/S/T/B/N and Dual DC Volts
ITT8	Triple Input, Thermocouple J/K/R/S/T/B/N and Dual 4-20mA
ITT9	Triple Input, Thermocouple J/K/R/S/T/B/N and DC Volt and DC MV
ITTA	Triple Input, Thermocouple J/K/R/S/T/B/N and 4-20mA and DC MV
ITTB	Triple Input, Thermocouple J/K/R/S/T/B/N and 4-20mA and DC Volt
ITTC	Triple RTD Input, 4-Wire, 100 Ω Pt
ITTE	Triple - RTD / RTD / Frequency
ITTF	Triple Input, Thermocouple / 4-20mA / Frequency
ITTG	Triple Input, Thermocouple / V / Frequency
IW01	Single Phase Power (Watts, V, A, Hz, PF, Whr) 300V/1A, 600V/1A
IW02	Single Phase Power (Watts, V, A, Hz, PF, Whr) 300V/5A, 600V/5A
IW03	DC-Watts, 200V DC/50mV DC from Shunt (0-100.00)
IW04	Single Phase Power, 600V/1A
IW05	Single Phase Power, 600V/5A

*Optimized for 50 Hz rejection. **Optimized for 60 Hz rejection.

I-SERIES INPUT SIGNAL CONDITIONING MODULES

Many input modules are available and others are constantly being developed. Check with your local distributor or see Texmate's web site at www.texmate.com for updated information.

Pre calibrated **I-Series Input Modules**, that have span or zero potentiometers, can be **interchanged between any I-Series compatible meter**, without recalibration, because all of the analog scaling and reference circuitry is self-contained within the module. Where appropriate, all the standard ranges are designed to be header selectable by the user, and Texmate's unique SPAN ADJUST Header facilitates **scaling to almost any required engineering unit**. See Input Module Component Glossary on page 42 for more information.

Unless otherwise specified Texmate will ship all modules pre calibrated with factory preselected ranges and and/or scaling as shown in **BOLD** type. Other pre calibrated standard ranges or custom ranges may be ordered. Factory installed custom scaling and other custom options are also available. Unless otherwise specified, the accuracy of calibration is $\pm 0.05\%$ of reading + 2 digits.

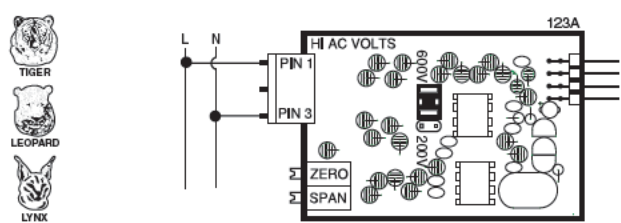
Symbols Indicate Module Compatibility Within Meter Families		
TIGER Family	LEOPARD Family	LYNX Family
TIGER Family	LEOPARD Family	LYNX Family
TIGER Family	LEOPARD Family	LYNX Family
TIGER Family	LEOPARD Family	LYNX Family
TIGER Family	LEOPARD Family	LYNX Family
TIGER Family	LEOPARD Family	LYNX Family
ALL MODELS	SOME MODELS	MODEL SPECIFIC

* TIGER IT03
 *A module code shown below a compatibility symbol indicates another module is available, similar in function, which may be more suited for use with that family.

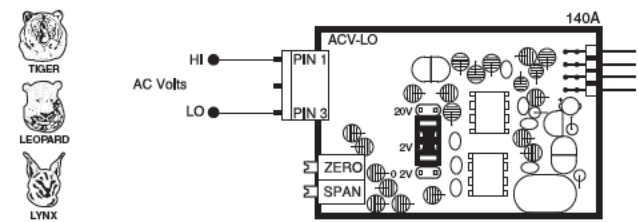
** LYNX FX-B101Q
 **Those models which are compatible are listed below the Model Specific Symbol.

Indicates a SMART MODULE.
 Smart Modules incorporate their own micro-processors and/or A/D converters. They communicate digitally with the Tiger 320 Operating System. Some also have their own high speed SSR outputs.

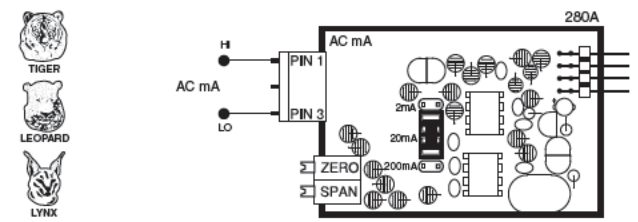
IA01: AC Volts Scaled RMS, 200/600V AC



IA02: AC Volts Scaled RMS, 200mV/2V/20V AC

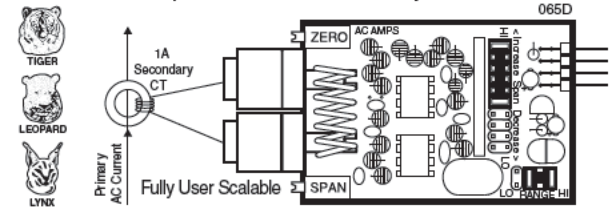


IA03: AC Milliamps Scaled RMS, 2/20/200mA AC



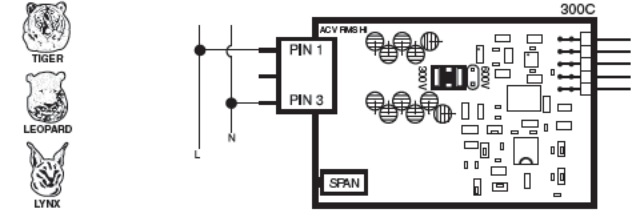
IA04: AC Amps Scaled RMS, 1 Amp AC

IA05: AC Amps Scaled RMS, 5 Amp AC

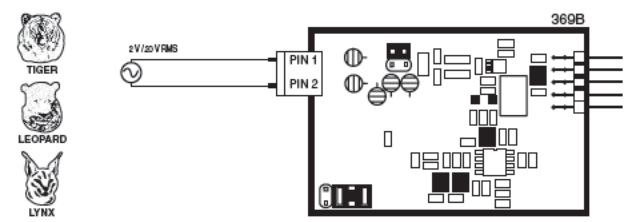


IA06: AC Volts True RMS, 300/600V AC

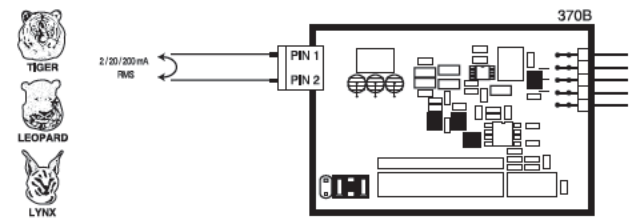
Also see spec sheet on page 14.



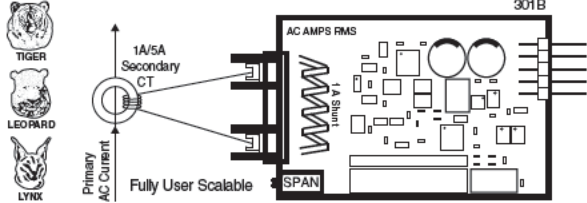
IA07: AC Volts True RMS, 200mV/2V/20V AC



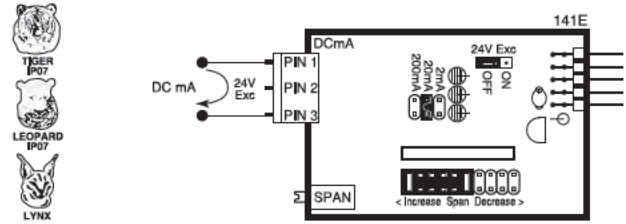
IA08: AC Milliamps True RMS, 2/20/200mA AC



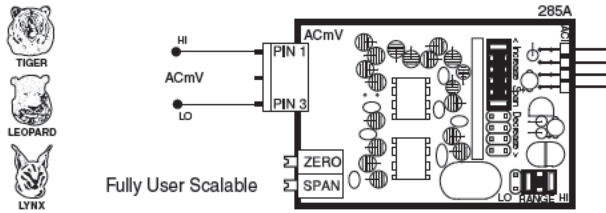
IA09: AC Amps True RMS, 1 Amp AC Also see spec sheet on page 15.
IA11: AC Amps True RMS, 5 Amp AC



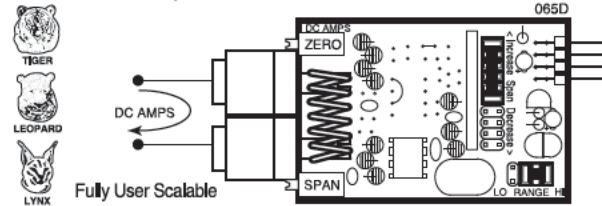
ID03: DC Milliamps, 2/20/200mA DC w/24V DC Exc



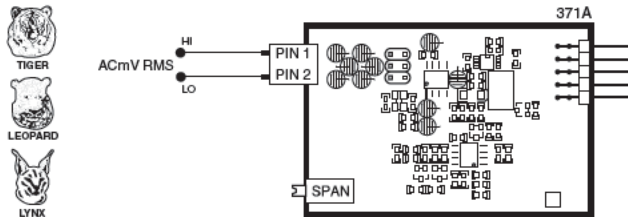
IA10: AC Millivolts, Scaled RMS, 100mV AC



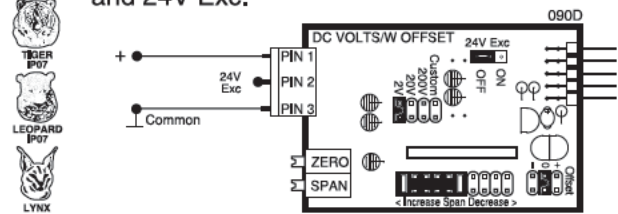
ID04: DC Amps, 5A DC
ID09: DC Amps, 1A DC



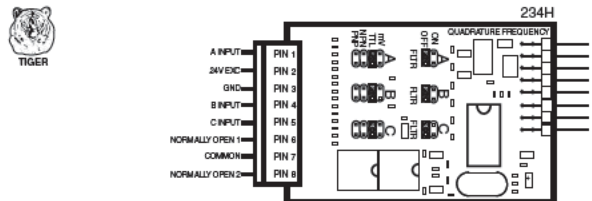
IA12: AC Millivolt RMS Sigma Delta



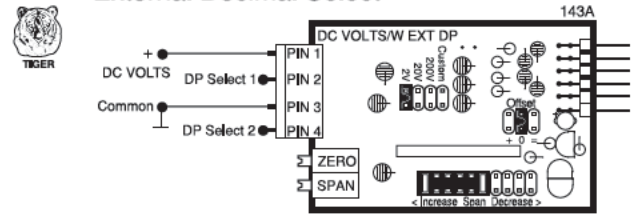
ID05: DC Volts 2/20/200/Custom V DC with Offset and 24V Exc.



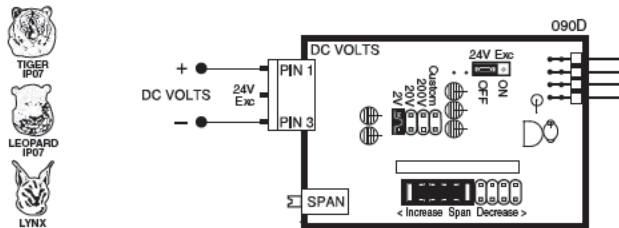
IC02: Quadrature Counter Also see spec sheet on page 16.
IC03: Quadrature Counter w/dual SSRs



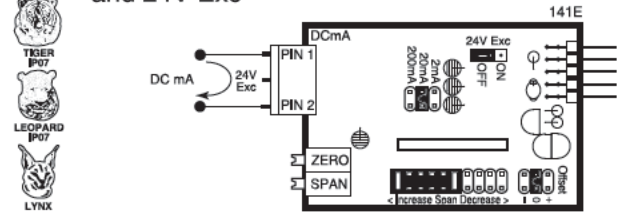
ID06: DC Volts 2/20/200/Custom V DC with External Decimal Select



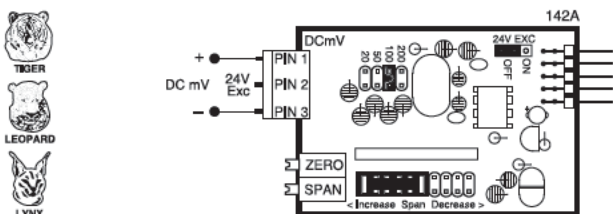
ID01: DC Volts, 2/20/200V/Custom w/24V DC Exc



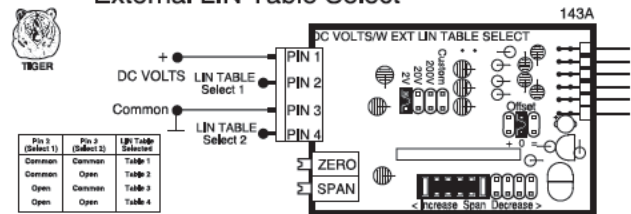
ID07: DC Milliamps, 2/20/200mA DC with Offset and 24V Exc



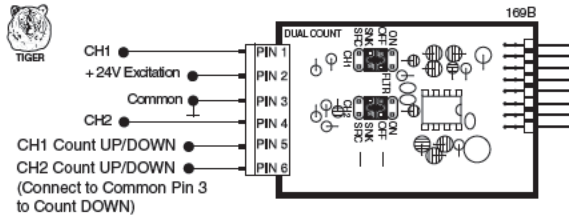
ID02: DC Millivolts, 20/50/100/200mV DC w/24V DC Exc



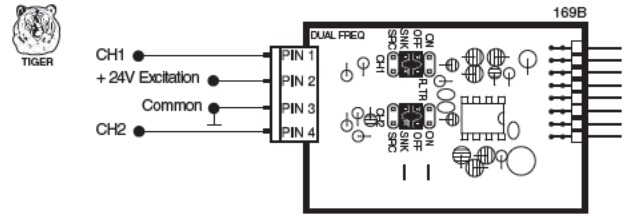
ID08: DC Volts, 2/20/200/Custom V DC with External LIN Table Select



IDC1: Dual UP/DOWN Counter

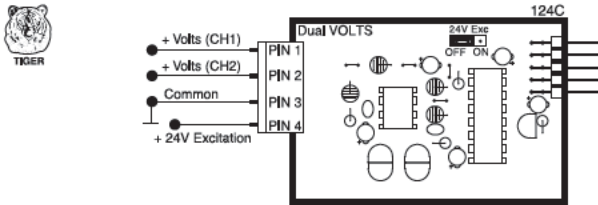


IDF2: Dual Frequency

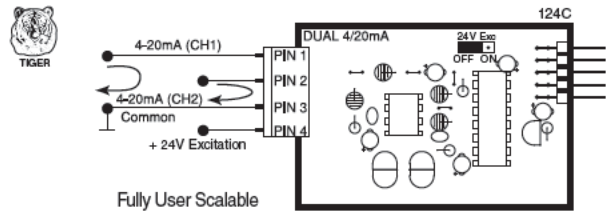


IDD1: Dual DC Volts, 2V DC

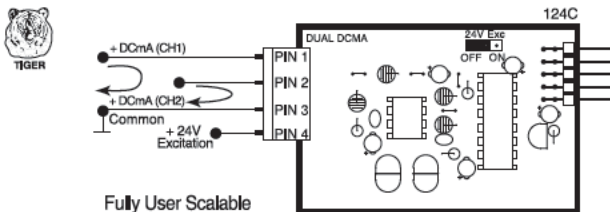
IDD2: Dual DC Millivolts, 50mV DC



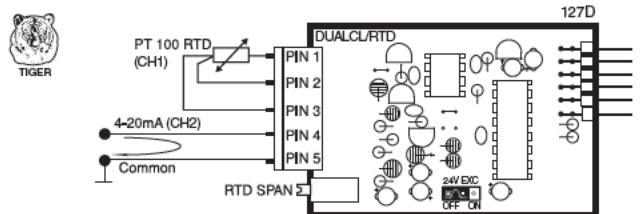
IDP1: Dual Process Loop, 4-20mA



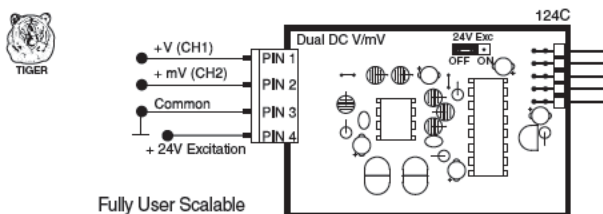
IDD3: Dual DC Milliamps, 2mA DC



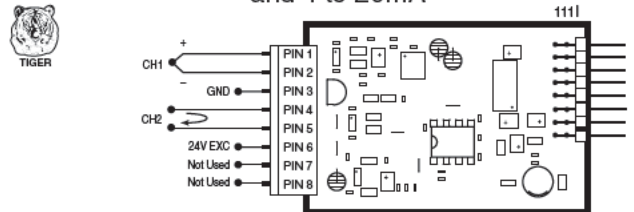
IDP2: Dual Input, 3-wire RTD and 4-20mA



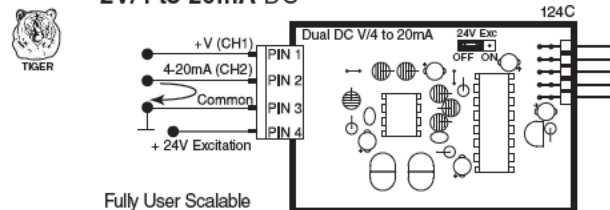
IDD4: Dual Input, DCV and DCmV 2V/50mV DC



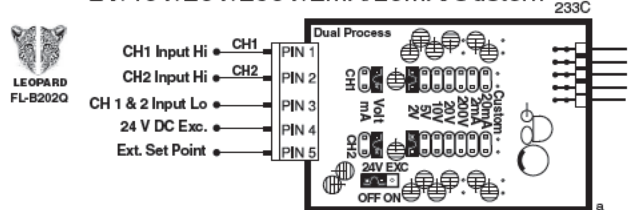
IDP3: Dual Input- Thermocouple (J/K/R/S/T/B/N) and 4 to 20mA



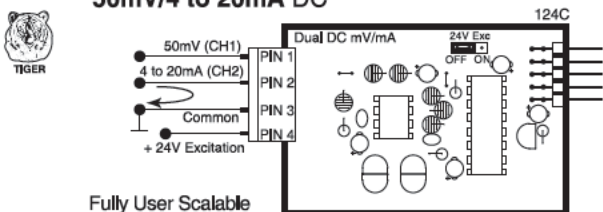
IDD5: Dual Input, DCV and 4 to 20mA
2V/4 to 20mA DC



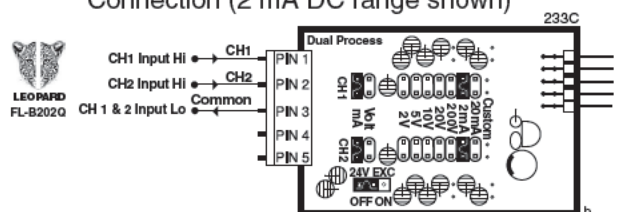
IDP4: Dual Channel Universal Process
2V/10V/20V/200V/2mA/20mA/Custom



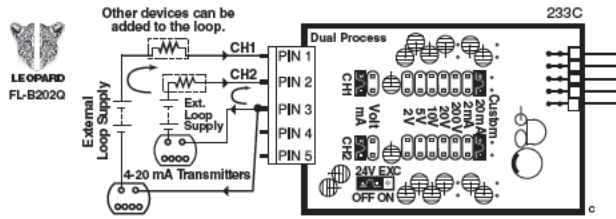
IDD6: Dual Input, DC mV and 4 to 20mA
50mV/4 to 20mA DC



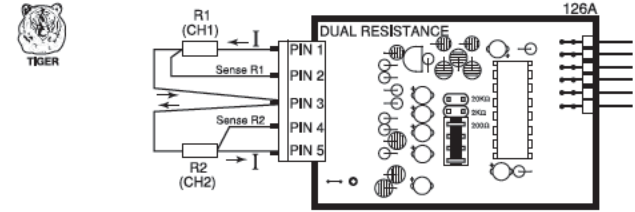
**IDP4 with Dual Channel DC mA, 2 mA/20 mA/Custom
Connection (2 mA DC range shown)**



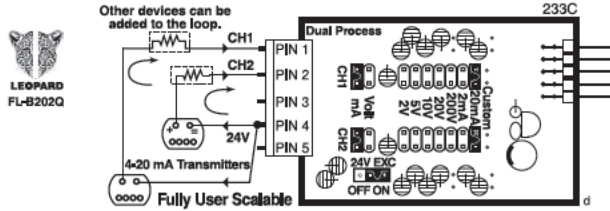
IDP4 with Dual 4-20 mA Connection



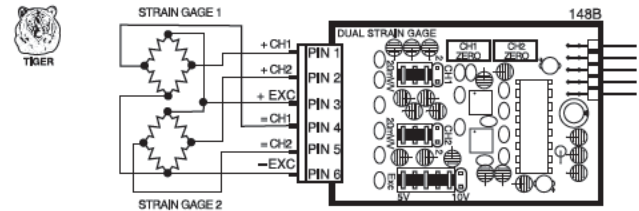
IDR1: Dual Resistance Input, 0.2/2/20KΩ



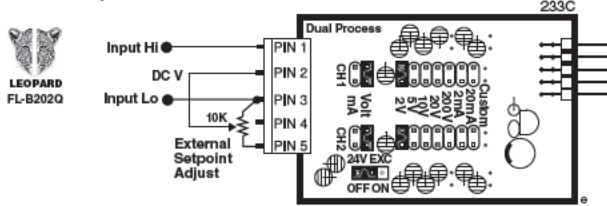
IDP4 with Dual Channel 4-20 mA Connection
Excitation provided by the meter



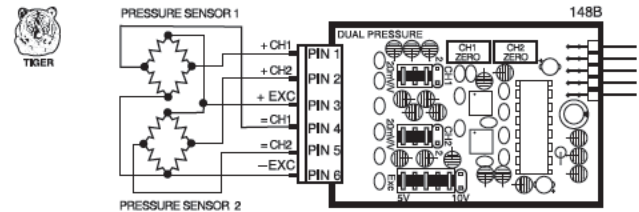
IDS1: Dual Strain Gage Input, 4 wire 2mV/V, 20mV/V



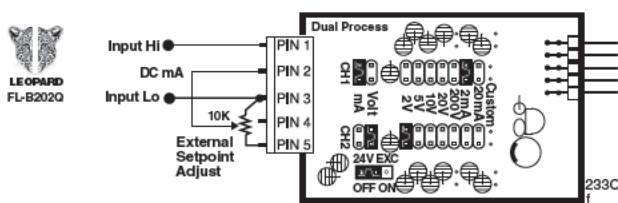
IDP4 with DC Volt Connection and External Setpoint
option 2 V/10 V/20 V/200 V/Custom



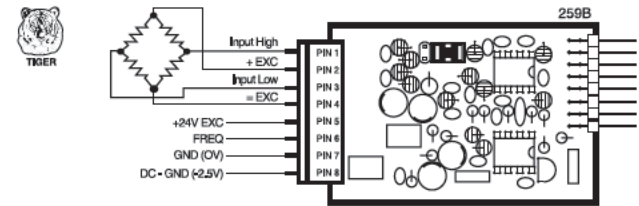
IDS2: Dual Pressure Input, 4 wire 2mV/V, 20mV/V



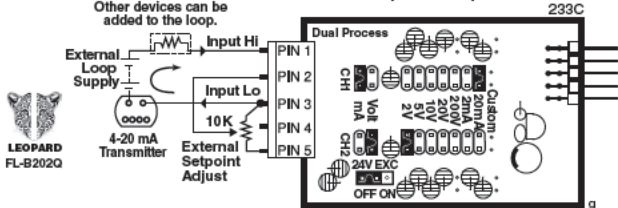
IDP4 with DC mA Connection and
External Setpoint option 2 mA/20 mA/Custom



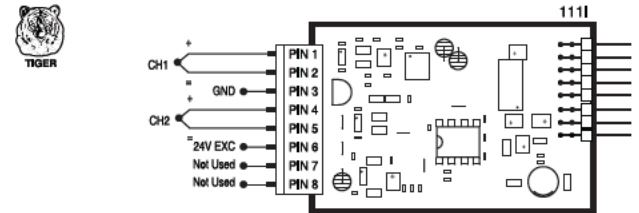
IDS3: Dual Input, Strain Gage and Frequency



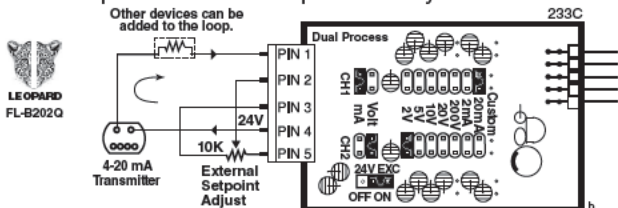
IDP4 with 4-20 mA Connection and
External Setpoint option



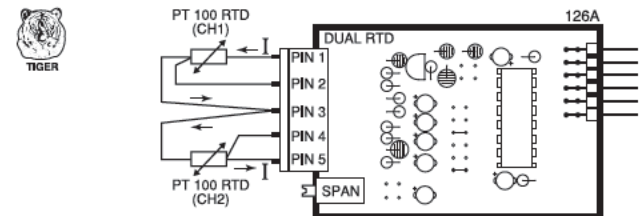
IDT1: Dual Thermocouple (J/K/R/S/T/B/N)



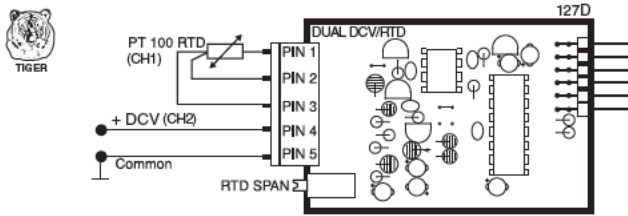
IDP4 with 4-20 mA Connection and External Setpoint
option - excitation provided by the meter



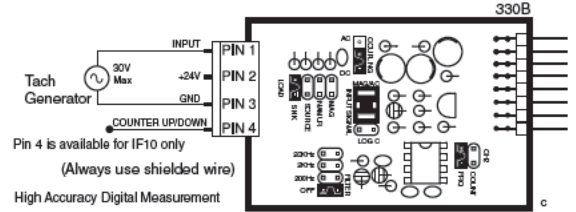
IDT2: Dual RTD Input, 2/3-wire, 100Ω Pt



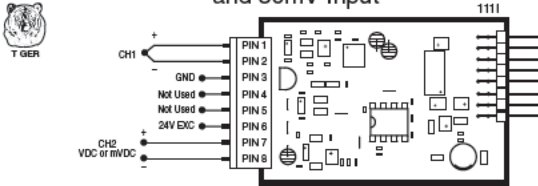
IDT3: Dual Input, 3-wire RTD and DCV



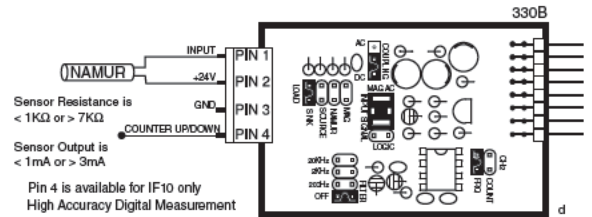
Tach Generator Connected to **IF05** and **IF10**



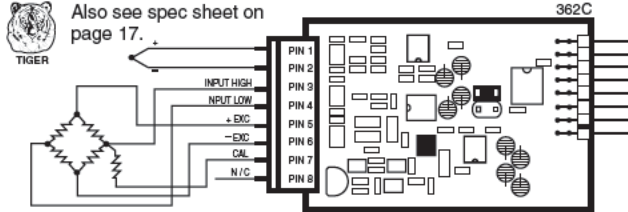
IDT4: Dual Input - Thermocouple (J/K/R/S/T/B/N) and 2VDC Input
IDT5: Dual Input - Thermocouple (J/K/R/S/T/B/N) and 50mV Input



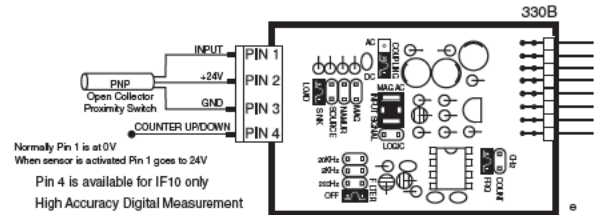
NAMUR Sensor Connected to **IF05** and **IF10**



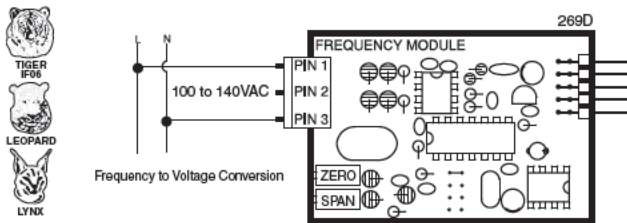
IDT6: Dual Input - Thermocouple and Load Cell



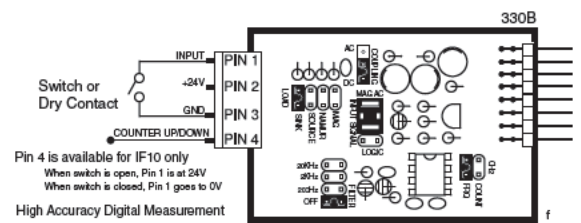
PNP Open Coll. Prox. Switch Conn. to **IF05** and **IF10**



IF02: Line Frequency

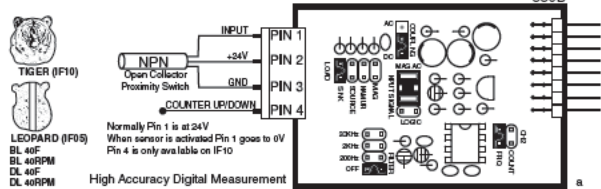


Switch or Dry Contact Connected to **IF05** and **IF10**

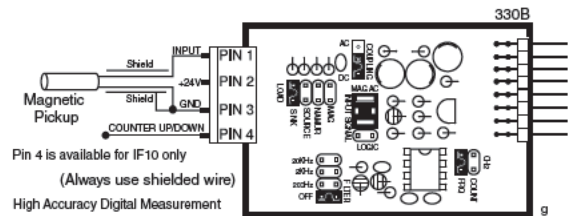


IF05: Universal Frequency / RPM Also see spec sheets on pages 18 & 20.
IF10: Univ. Freq. / RPM / UP DOWN Counter

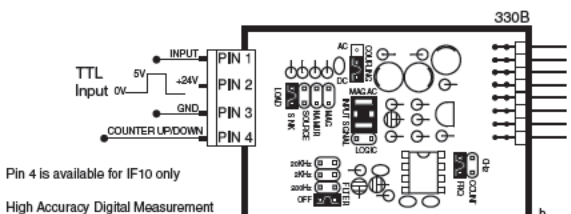
Using NPN Open Collector Proximity Switch



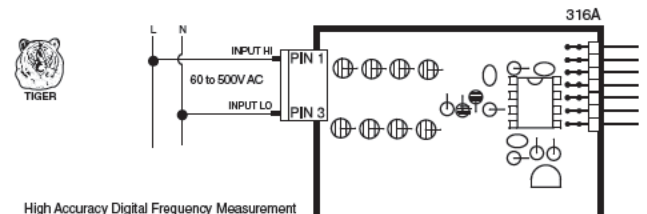
Magnetic Pickup Connected to **IF05** and **IF10**



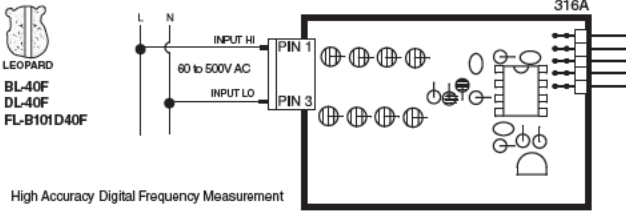
TTL Input Connected to **IF05** and **IF10**



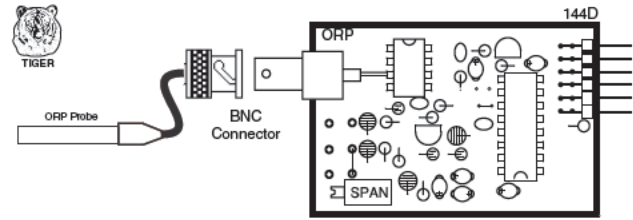
IF06: Line Frequency



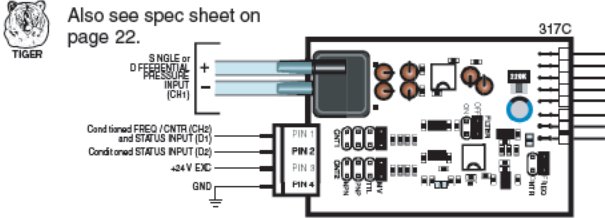
IF08: Line Frequency



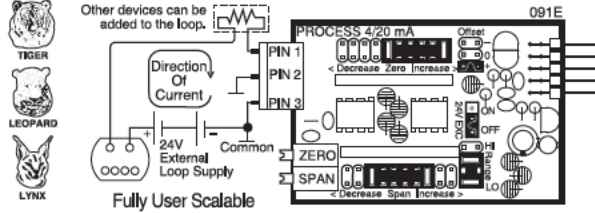
IOR1: ORP (Oxidation Reduction Potential)



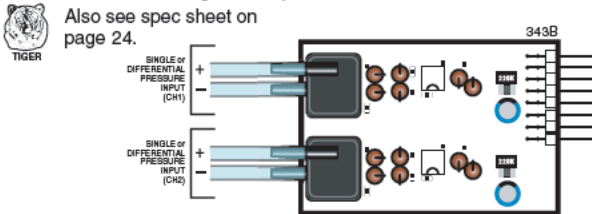
IGYX: Direct Pressure (Absolute or Differential/Gage) with 2 Digital Inputs. See below for ordering code options



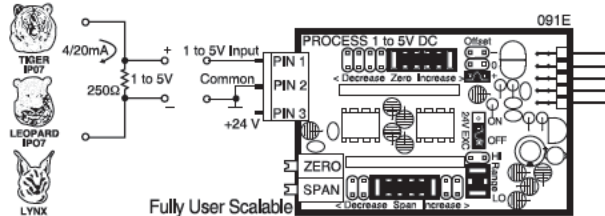
IP01: Process Loop, 4-20mA
IP02: Process Loop, 4-20mA with 24VDC EXC



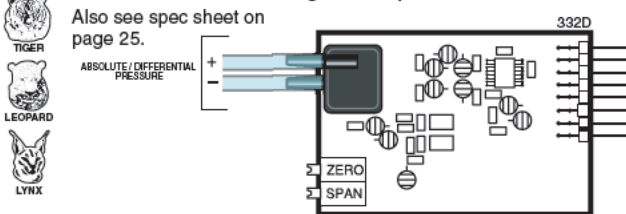
IGYY: Dual Direct Pressure (Absolute or Differential/Gage) see below for ordering code options



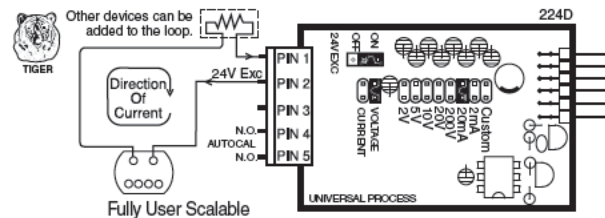
IP03: Process Input, 1-5V DC with Offset, 24V Exc



IGYZ: Universal Direct Pressure (Absolute or Differential/Gage) See below for ordering code options



IP06: Process Loop, 4-20mA w/24VDC Exc and Autocal



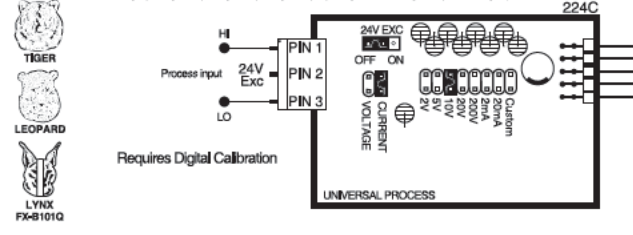
Direct Pressure (IGYX, IGYY & IGYZ) Ordering Code Options

Sensor Range	CH1 Order Code	CH2 Order Code
1 psi Absolute	A	A
1 psi Differential	B	B
5 psi Absolute	C	C
5 psi Differential	D	D
15 psi Absolute	E	E
15 psi Differential	F	F
30 psi Absolute	G	G
30 psi Differential	H	H
100 psi Absolute	J	J
100 psi Differential	K	K

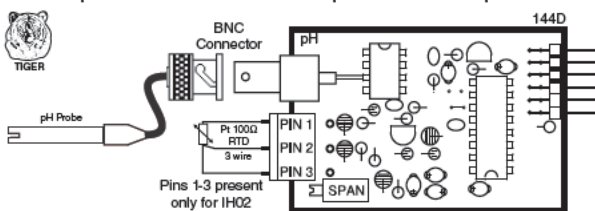
For Single Channel IGYX with two digital inputs, the last digit of order code is always X.

For Universal Direct Pressure IGYZ, the last digit of order code is always Z.

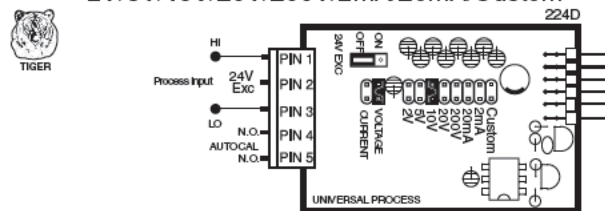
IP07: Universal Process Input
2V/5V/10V/20V/200V/2mA/20mA/Custom



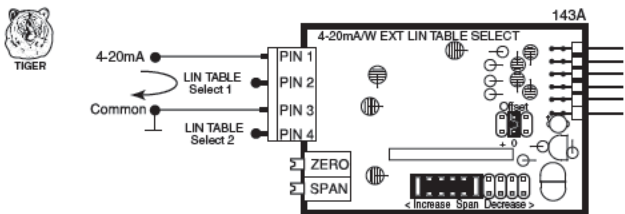
IHO1: pH
IHO2: pH with Automatic Temperature Compensation



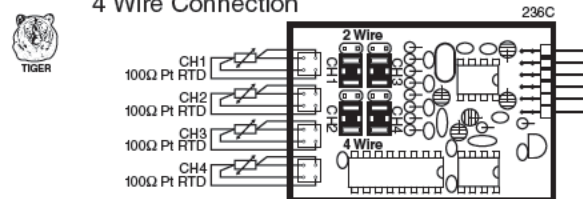
IP08: Universal Process Input with Autocal
2V/5V/10V/20V/200V/2mA/20mA/Custom



IP09: 4-20mA with External LIN Table Select

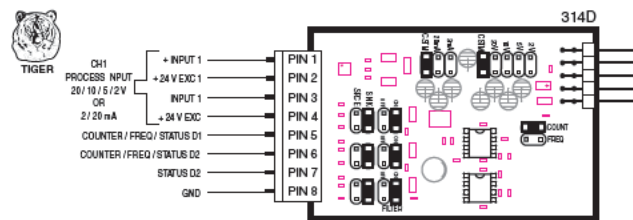


IQT4: Quad RTD Platinum 100Ω RTD
4 Wire Connection

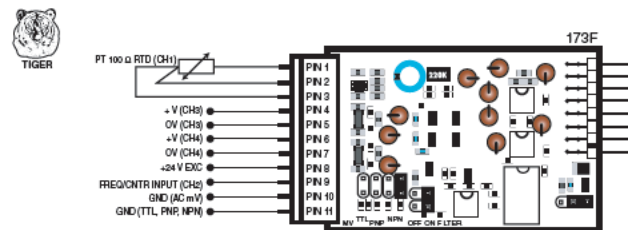


All four RTDs must be connected for the meter to work.

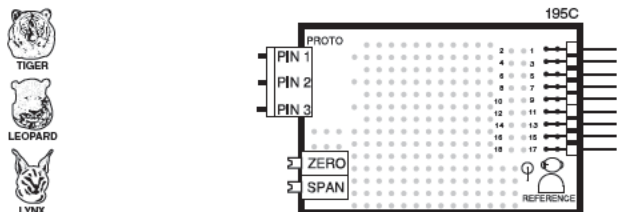
IP10: Process + 3 Digital Inputs



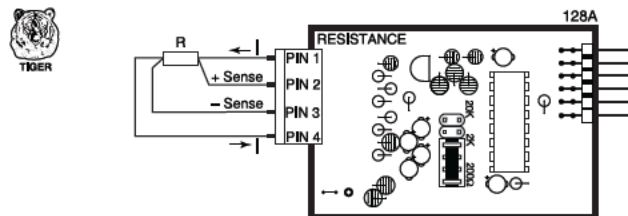
IQT5: Quad RTD / V / V / FREQ



IPT1: Prototype Board for Custom Design

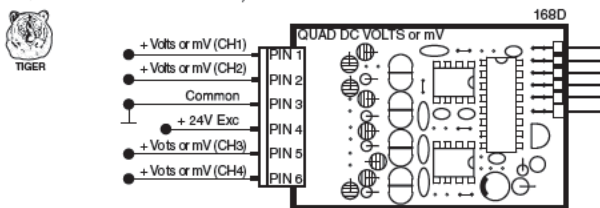


IR01: Resistance, 2/3/4-Wire, 200Ω/2KΩ/20KΩ

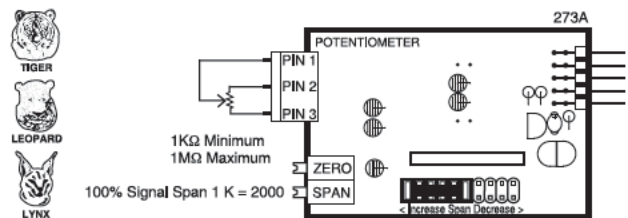


IQD1: Quad DC Volts, 2V DC

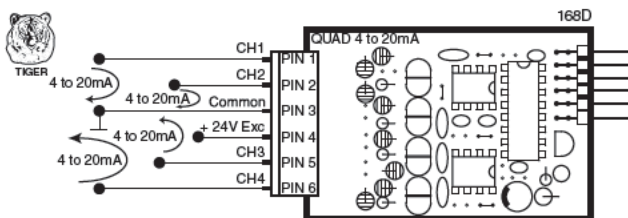
IQD2: Quad DC mV, 50mV DC



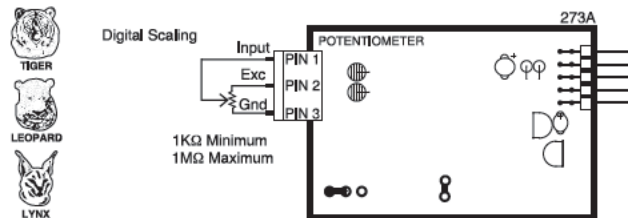
IR02: 3 wire Potentiometer 1KΩ min (0-F.S.)



IQP1: Quad 4 to 20mA

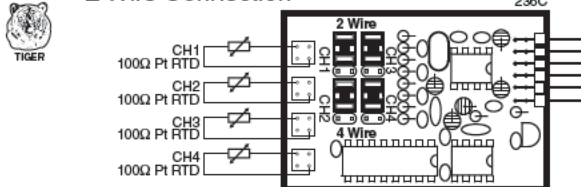


IR03: Linear Potentiometer 1KΩ min



IQT2: Quad RTD Platinum 100Ω RTD

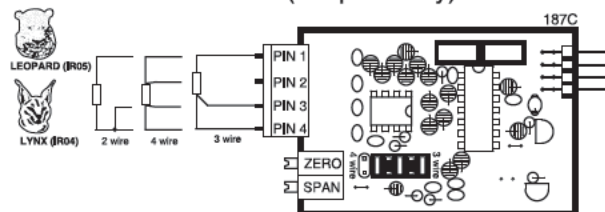
2 Wire Connection



All four RTDs must be connected for the meter to work.

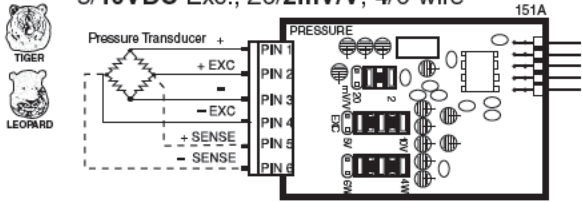
IR04: Resistance 2KΩ (Lynx only)

IR05: Resistance 2KΩ (Leopard only)



IS01: Strain Gage 5/10VDC Exc., 20/2mV/V, 4/6-wire

IS02: Pressure/Load Cell 5/10VDC Exc., 20/2mV/V, 4/6-wire



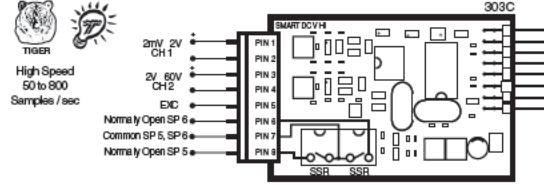
ISD1: Smart DC Volts. 16 bit. Optimized for 50 Hz rejection.

ISD2: Smart DC Volts. 16 bit. Optimized for 60 Hz rejection.

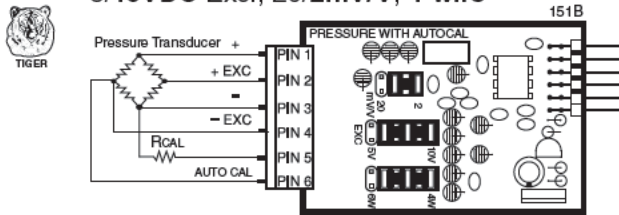
ISD3: Smart DC Volts. 16 bit. 50 Hz rejection w/dual SSRs.

ISD4: Smart DC Volts. 16 bit. 60 Hz rejection w/dual SSRs.

Also see spec sheet on page 26.



IS03: Pressure/Load Cell with AutoCal 5/10VDC Exc., 20/2mV/V, 4-wire



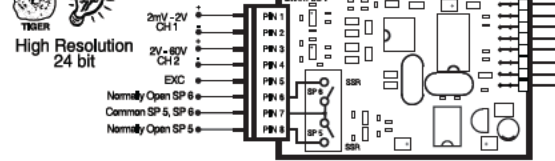
ISD5: Smart DC Volts. 24 Bit. 50 Hz rejection.

ISD6: Smart DC Volts. 24 Bit. 60 Hz rejection.

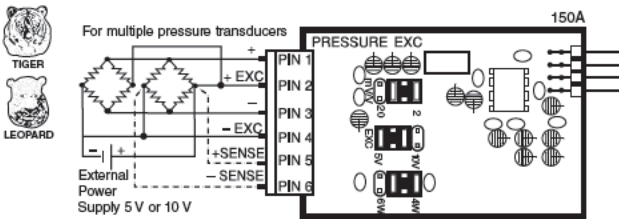
ISD7: Smart DC Volts. 24 Bit. 50 Hz w/dual SSRs.

ISD8: Smart DC Volts. 24 Bit. 60 Hz w/dual SSRs.

Also see spec sheet on page 27.



IS04: Pressure/Load Cell Ext Exc., 20/2mV/V, 4/6-wire

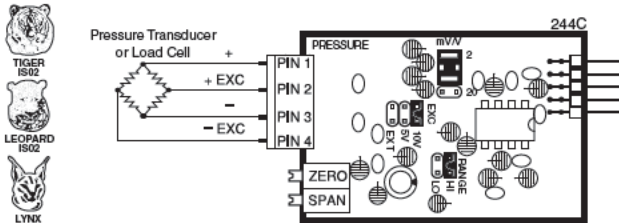


ISD9: Smart Voltage and Resistance Input

Also see spec sheet on page 28.

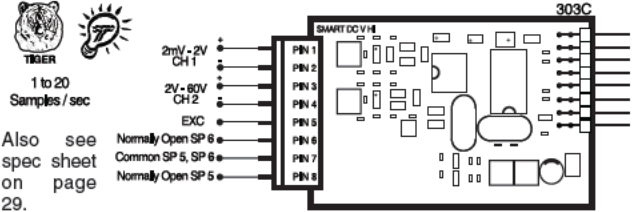


IS05: Pressure/Load Cell 20/2mV/V, 5/10V Exc 4-wire



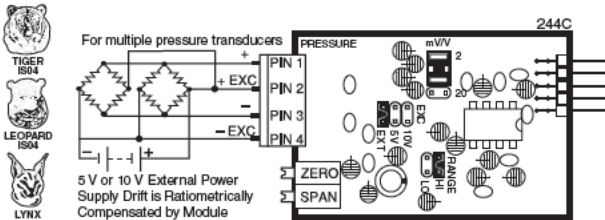
ISDA: Smart Dual DC Volts. 16 bit. 50 Hz rejection.

ISDB: Smart Dual DC Volts. 16 bit. 60 Hz rejection.



Also see spec sheet on page 29.

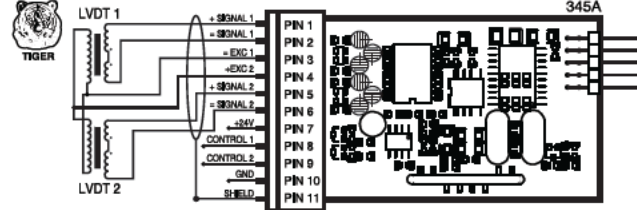
IS06: Pressure/Load Cell Ext Exc., 20/2mV/V, 4-wire



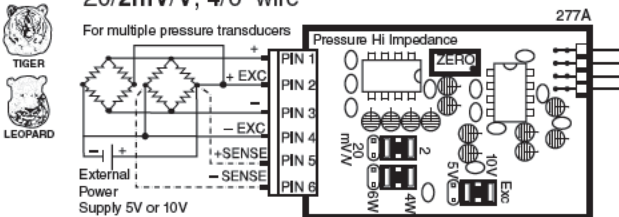
ISL1: Smart Dual LVDT. 50 Hz

ISL2: Smart Dual LVDT. 60 Hz

Also see spec sheet on page 30.

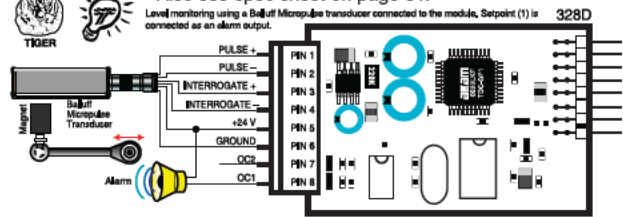


IS07: Pressure/Load Cell Ext Exc. High Impedance, 20/2mV/V, 4/6-wire

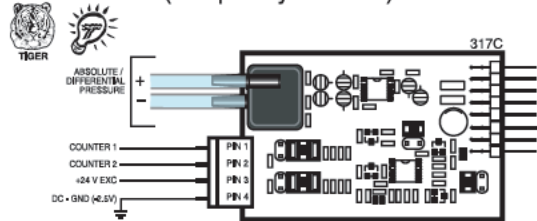


ISM1: Smart Magnetostrictive Input

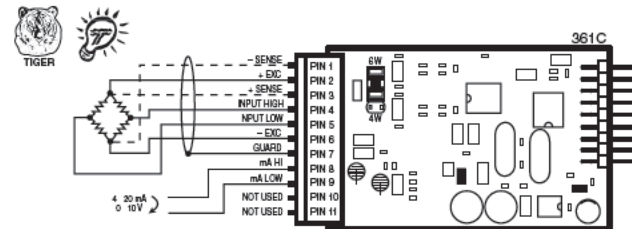
Also see spec sheet on page 31.



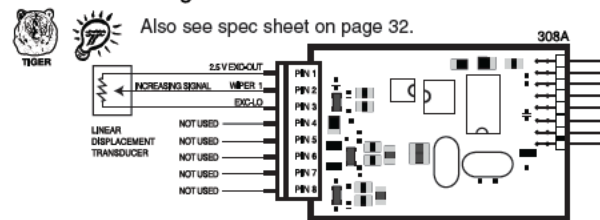
ISP1: Smart Triple Input, Pressure Direct and Dual Counter (Frequency/Counter)



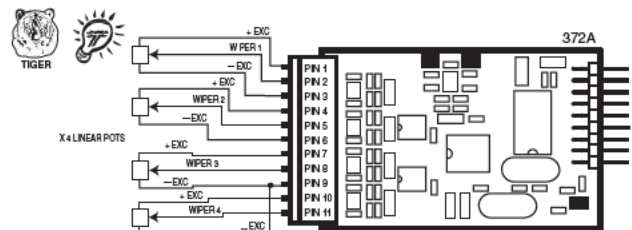
ISS9: Smart Dual Input, LC and Process (4-20mA)



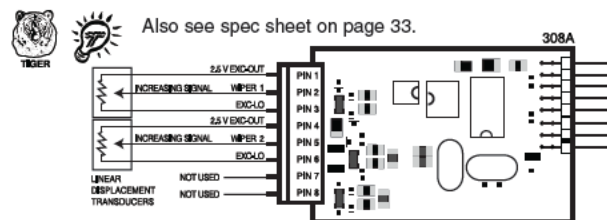
ISR1: Smart Single 3-Wire Potentiometer. 24 bit. 50 Hz
ISR2: Smart Single 3-Wire Potentiometer. 24 bit. 60 Hz



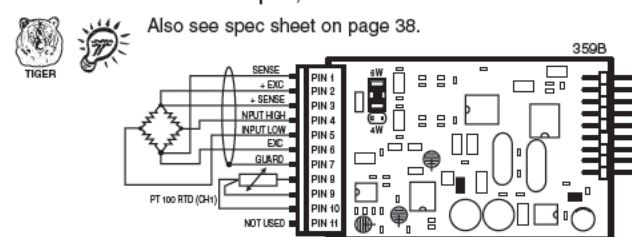
ISSA: Smart Quad Potentiometer/Resistance



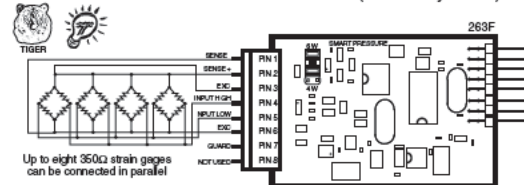
ISR3: Smart Dual 3-Wire Potentiometer. 16 bit. 50 Hz
ISR4: Smart Dual 3-Wire Potentiometer. 16 bit. 60 Hz



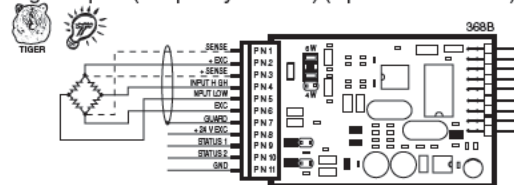
ISSB: Smart Dual Input, Load Cell and RTD



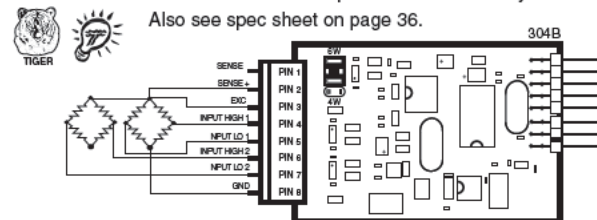
ISS1: Smart Pressure/Load Cell. 16 bit (50 Hz rejection)
ISS2: Smart Pressure/Load Cell. 16 bit (60 Hz rejection)
ISS3: Smart Pressure/Load Cell. 24 bit (50 Hz rejection)
ISS4: Smart Pressure/Load Cell. 24 bit (60 Hz rejection)



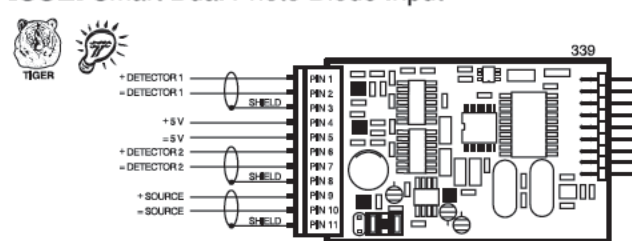
ISSC: Smart Triple Input, 16 bit, Load Cell and two Digital Inputs (Frequency/Counter) (Optimized for 50 Hz)
ISSD: Smart Triple Input, 16 bit, Load Cell and two Digital Inputs (Frequency/Counter) (Optimized for 60 Hz)



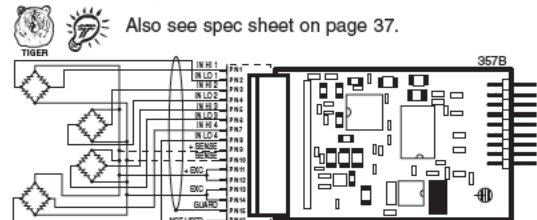
ISS5: Dual Smart Pressure. 16 bit. Optimized for 50 Hz rejection.
ISS6: Dual Smart Pressure. 16 bit. Optimized for 60 Hz rejection.



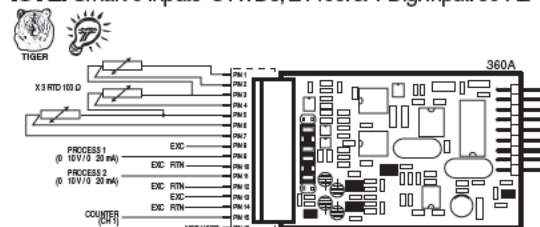
ISSE: Smart Dual Photo Diode Input



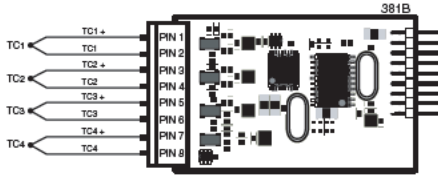
ISS7: Smart Quad Pressure/Load Cell. 16 bit. 50 Hz
ISS8: Smart Quad Pressure/Load Cell. 16 bit. 60 Hz



IST1: Smart 6 Inputs-3 RTDs, 2 Proc. & 1 Dig. Input. 50 Hz
IST2: Smart 6 Inputs-3 RTDs, 2 Proc. & 1 Dig. Input. 60 Hz



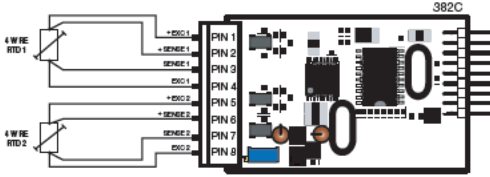
IST3: Smart Quad Thermocouple. 50 Hz
IST4: Smart Quad Thermocouple. 60 Hz



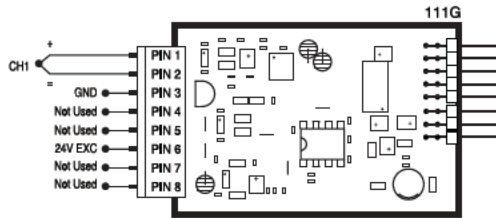
IST5: Smart Dual RTD with 0.01° Res. 50 Hz
IST6: Smart Dual RTD with 0.01° Res. 60 Hz



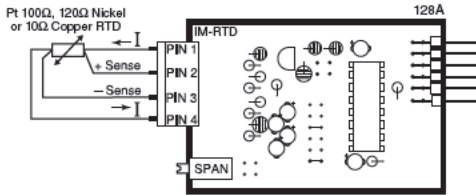
Also see spec sheet on page 40.



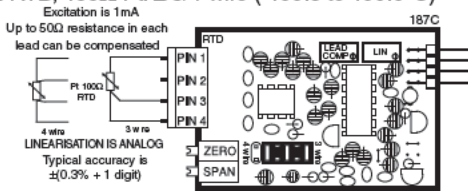
IT01: Thermocouple (J/K/R/S/T/B/N)



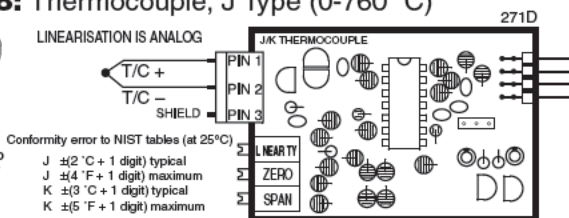
IT02: RTD, 100Ω Pt. 2,3,4-wire
IT12: RTD, 120Ω Nickel 2/3/4-wire
IT13: RTD, 10Ω Copper 2/3/4-wire



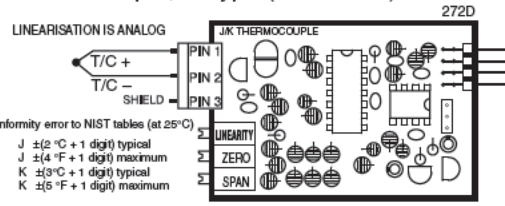
IT03: RTD, 100Ω Pt. 2/3/4-wire (-200 to 800°C)
IT04: RTD, 100Ω Pt. 2/3/4-wire (-200 to 1470°F)
IT05: RTD, 100Ω Pt. 2/3/4-wire (-199.9 to 199.9°F)
IT14: RTD, 100Ω Pt. 2/3/4-wire (-199.9 to 199.9°C)



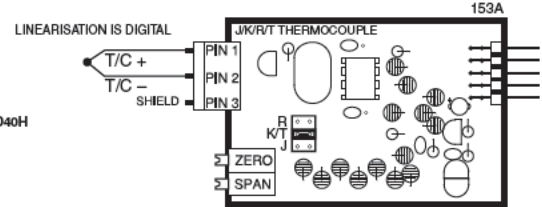
IT06: Thermocouple, J Type (0-1400 °F)
IT08: Thermocouple, J Type (0-760 °C)



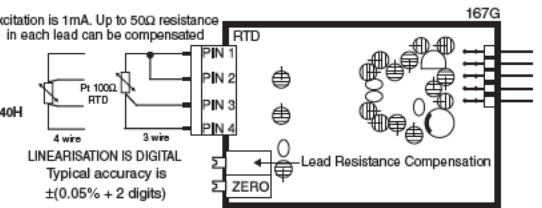
IT07: Thermocouple, K Type (0-1999 °F)
IT09: Thermocouple, K Type (0-1260 °C)



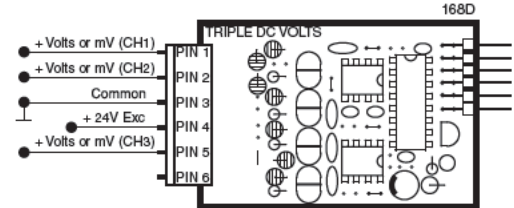
IT10: Thermocouple, J/K/R/T, Selectable °C/°F, 1°/0.1°



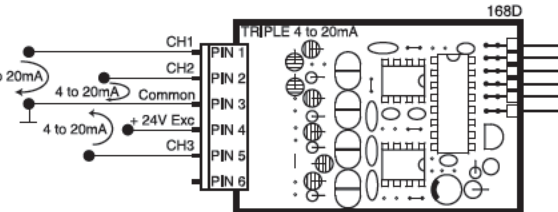
IT11: RTD, 100Ω Pt. Select 3/4-wire, °C/°F, 1°/0.1°
IT15: RTD, 1000Ω Pt. Select 3/4-wire, °C/°F, 1°/0.1°



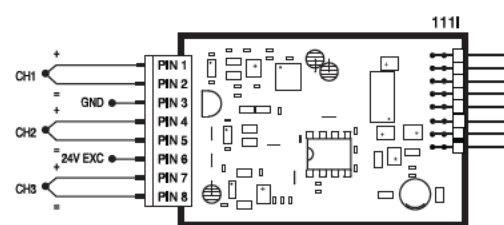
ITD1: Triple DC Volts, 2V DC
ITD2: Triple DC mV, 50mV DC



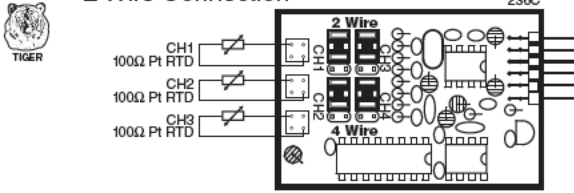
ITP1: Triple 4 to 20mA



ITT1: Triple Thermocouple (J/K/R/S/T/B/N)



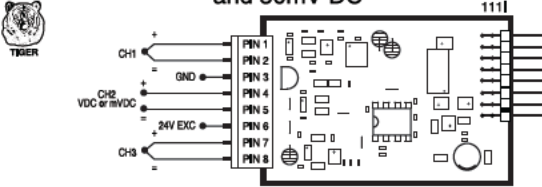
ITT2: Triple RTD Platinum 100Ω RTD
2 Wire Connection



All three RTDs **must** be connected for the meter to work.

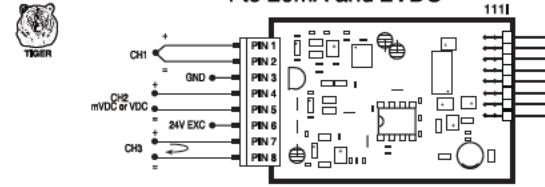
ITT3: Triple Input- T/C, T/C (J/K/R/S/T/B/N)
and 2VDC Input

ITT5: Triple Input- T/C, T/C (J/K/R/S/T/B/N)
and 50mV DC

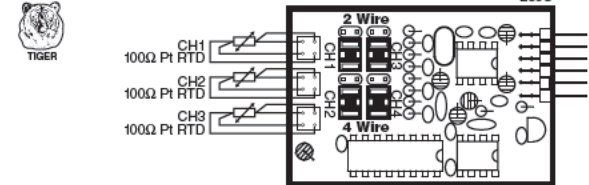


ITTA: Triple Input- T/C (J/K/R/S/T/B/N),
4 to 20mA and 50mV DC

ITTB: Triple Input- T/C (J/K/R/S/T/B/N),
4 to 20mA and 2VDC

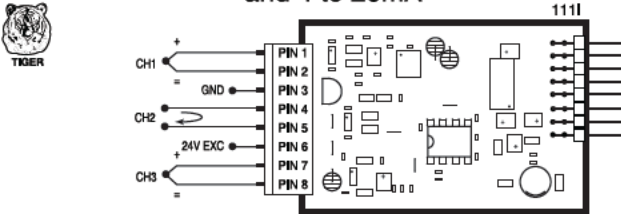


ITTC: Triple RTD Platinum 100Ω RTD
4 Wire Connection

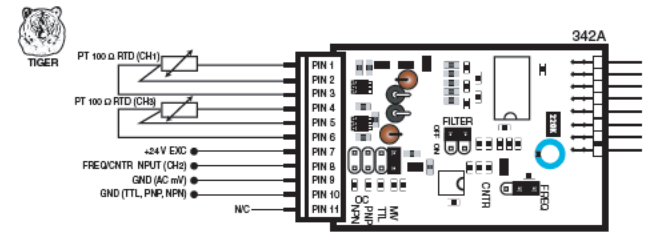


All three RTDs **must** be connected for the meter to work.

ITT4: Triple Input- T/C, T/C (J/K/R/S/T/B/N)
and 4 to 20mA

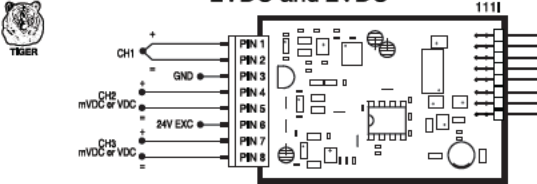


ITTE: Triple Input- RTD / RTD / FREQ



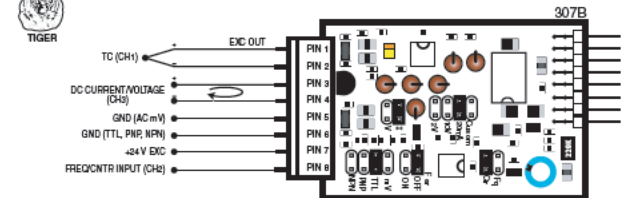
ITT6: Triple Input- T/C (J/K/R/S/T/B/N),
50mV DC and 50mV DC

ITT7: Triple Input- T/C (J/K/R/S/T/B/N),
2VDC and 2VDC

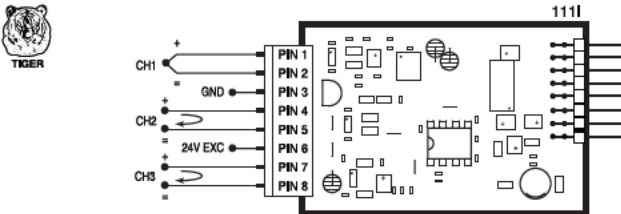


ITTF: Triple Input - Thermocouple / 4-20mA / Frequency

ITTG: Triple Input - Thermocouple / V / Frequency

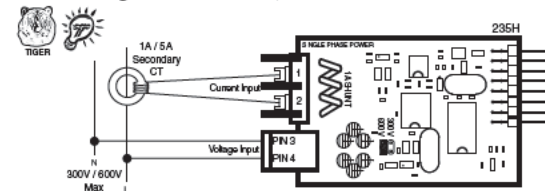


ITT8: Triple Input- T/C (J/K/R/S/T/B/N),
4 to 20mA and 4 to 20mA

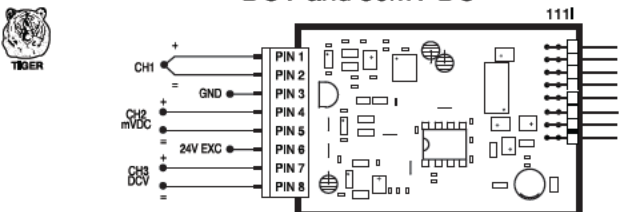


IWO1: Single Phase Power, 300V/1A
IWO2: Single Phase Power, 300V/5A
IWO4: Single Phase Power, 600V/1A
IWO5: Single Phase Power, 600V/5A

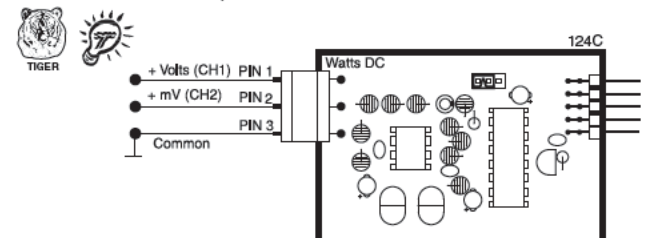
Also see spec sheet on page 41.



ITT9: Triple Input- T/C (J/K/R/S/T/B/N),
DCV and 50mV DC

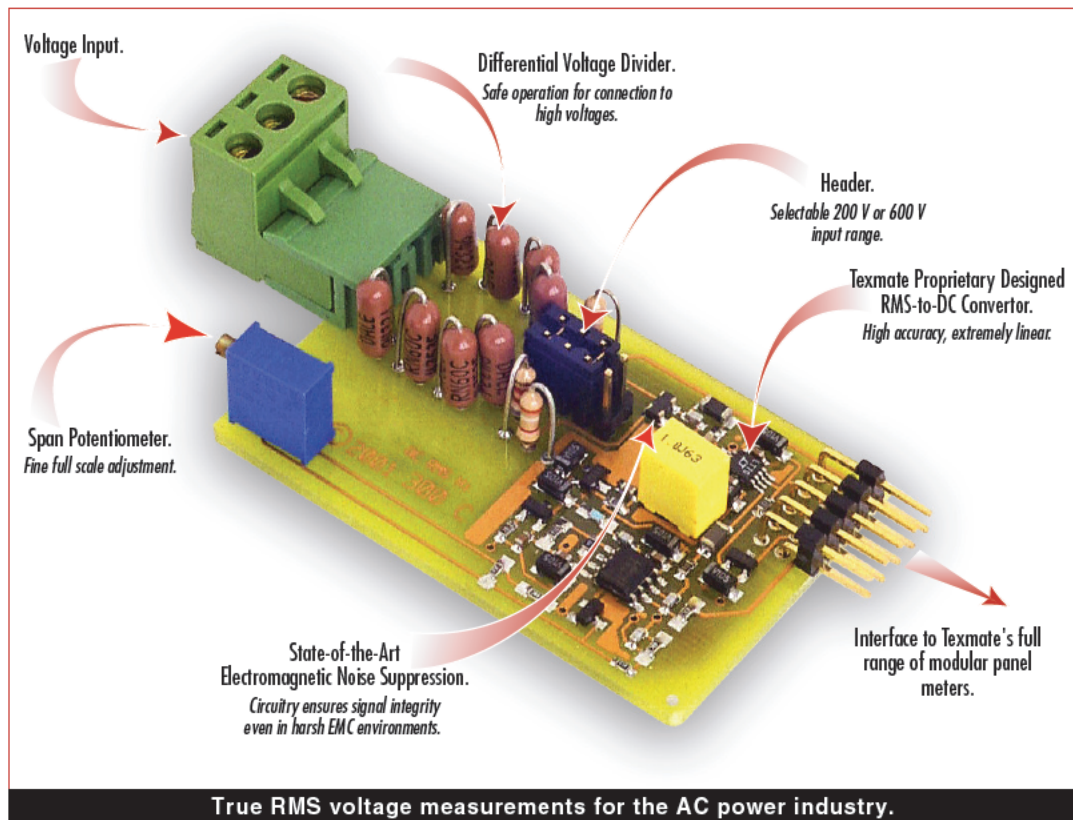


IWO3: DC-Watts, 10V/50mV DC



AC VOLTS TRUE RMS 200/600 V

**Order Code
IA06**



Compatible With:



INPUTS	
HIGH ACCURACY	★
PROCESS 4 / 20 mA, 1 / 5 V	
VOLTS AC / DC	
AMPS AC / DC	
WATTS AC / DC	
LOAD-CELL PRESSURE	
FREQUENCY RPM, Pulse, Counter	
TEMPERATURE T/C, RTD	
RESISTANCE	

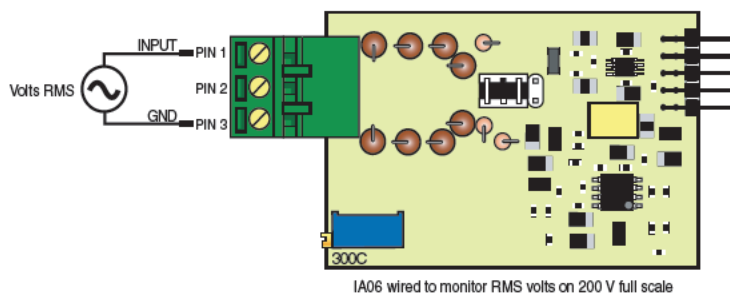
The IA06 true RMS input module provides unprecedented linearity over a choice of 200 or 600 volt RMS ranges utilizing the Texmate designed $\Delta\Sigma$ RMS-to-DC convertor circuit block. True differential input and high input impedance $2M\Omega$ improved RFI/EMI rejection and protection at high input voltages. High linearity means simple system calibration.

Hardware Module Specifications	
Voltage Range	200 V or 600 V RMS, header selectable 0.02 % linearity over full scale.
Frequency Range	0 to 6 KHz, independent of input voltage.
Resolution	1 mV RMS over full scale input.
Accuracy	
Lynx	0.05% of full scale input \pm 2 digit.
Leopard	0.05% of full scale input \pm 2 digit.
Tiger	0.05% of full scale input \pm 1 digit.
Output Signal	Adjustable about 2 V dc for 200 V RMS full scale using SPAN potentiometer.
Span Drift	\pm 50 ppm/ $^{\circ}$ C of full scale maximum.
Span Drift	\pm 500 ppm / $^{\circ}$ C of full scale maximum.

Some Relevant Operating System Features

- Direct display of true RMS voltage.
- Setpoint control (Tiger & Leopard).
- Full scale calibration accurate for any sized signal.

Connector Pinouts



Description

The AC volts true RMS input module is a universal module designed to function with the Lynx, Leopard, and Tiger range of indicators, meter relays, and programmable meter controllers (PMCs). Commonly used in the 0 to 200 V range, a 0 to 200/600 V range header provides the option to go to a higher voltage. The IA06 has a differential input with common mode filtering and a voltage divider to attenuate the high input voltage to safe levels. Zero input voltage produces a 0 output signal, meaning no zero adjustment is necessary.

AC AMPS TRUE RMS 1 OR 5 AMP MODULE

Order Code
IA09 (1 Amp)
IA11 (5 Amp)

Compatible With:



TIGER

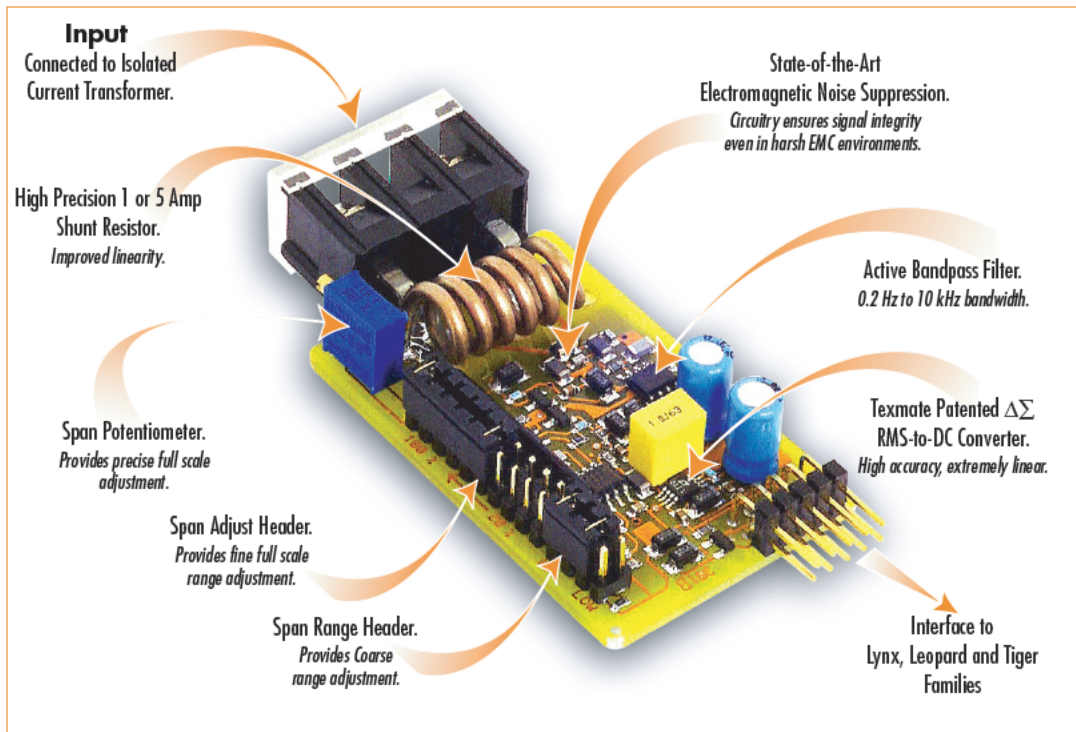
LEOPARD

LYNX

INPUTS



Amps AC Trms



At last, the answer to precise and repeatable RMS current measurements for the AC power industry.

This revolutionary module utilizes the Texmate designed $\Delta\Sigma$ RMS-to-DC convertor circuit block. This circuit block provides true RMS measurements over a wide range of isolated input currents while maintaining excellent linearity up to a 10 kHz waveform frequency.

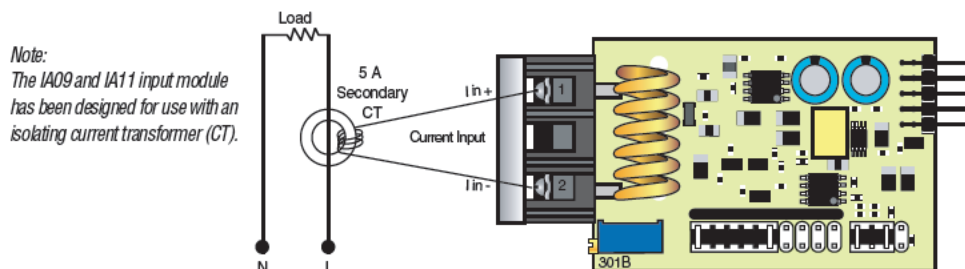
Hardware Module Specifications

Current Range (Isolated)	IA09: 0-1 A AC, IA11: 0-5 A AC. 0.02 % linearity on both.
Frequency Range	0.2 Hz to 10 KHz (3 dB).
Resolution	1 mA over full scale input.
Accuracy	
Lynx	0.03 % of full scale input \pm 2 digit.
Leopard	0.05 % of full scale input \pm 2 digit.
Tiger	0.02 % of full scale input \pm 1 digit.
Output Signal	Adjustable to 2 V full scale using on-board trimmer and header selections.
Forced Zero	Forces output to 0000 if below 1 % of full scale.
Span Drift	\pm 500 ppm / $^{\circ}$ C of full scale maximum.

Some Relevant Operating System Features

- Direct display of true RMS current.
- Setpoint control (Tiger & Leopard).
- Full scale calibration accurate for any sized signal.

Connector Pinouts



IA11 wired to monitor RMS amps usage on a resistive load connected to a single phase mains supply

Description

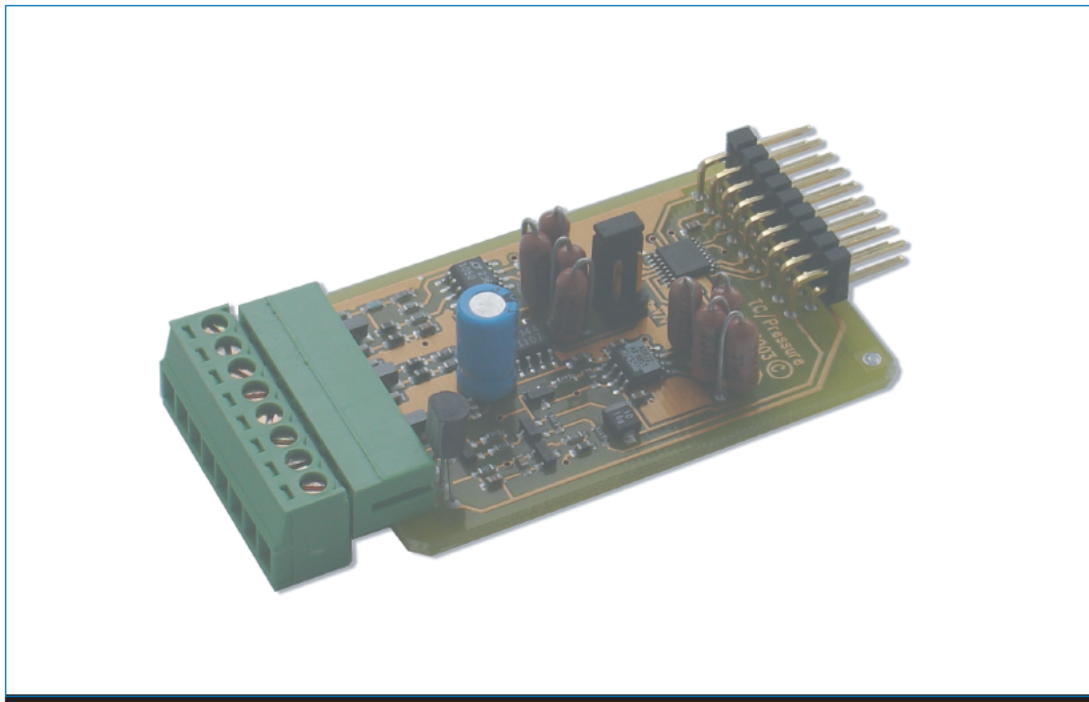
The AC amps true RMS input module is a universal module designed to function with the Lynx, Leopard, and Tiger range of indicators, meter relays, and programmable meter controllers (PMCs).

IA09 has a 1 amp high-precision shunt resistor installed for an isolated current range of 0 to 1 amp, while IA11 has a 5 amp high-precision shunt resistor installed for an isolated current range of 0 to 5 amps. A span potentiometer, span adjust header, and a span range header are used to adjust the input signal full scale. A zero input current produces a 0 V output signal, meaning no zero adjustment is necessary.

THERMOCOUPLE & LOAD CELL INPUT MODULE

**Order Code
IDT6**

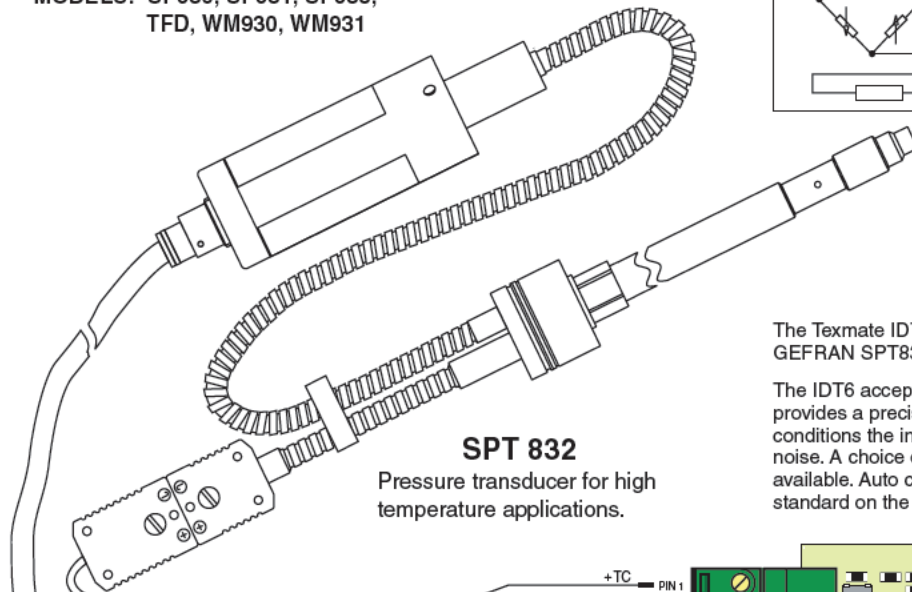
**Compatible
With:**



The solution for high-pressure applications.

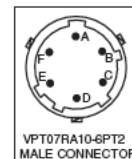
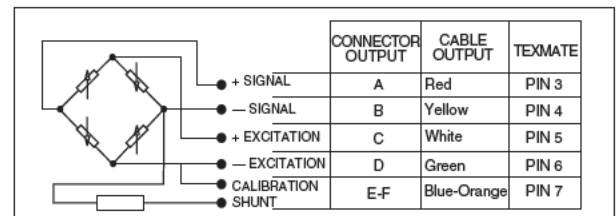
MELT PRESSURE WITH RCAL & TEMPERATURE
MODELS: SPT832 (shown), WMT932, TPF86, HP

PRESSURE WITH RCAL
**MODELS: SP830, SP831, SP833,
 TFD, WM930, WM931**



SPT 832
 Pressure transducer for high temperature applications.

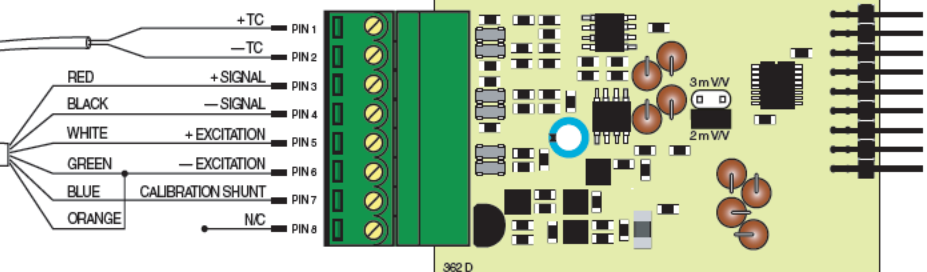
ELECTRICAL CONNECTIONS



When the transducer is fitted with connection cable, the above table shows the wiring color code.

The Texmate IDT6 input module easily interfaces with the GEFTRAN SPT832 probe head.

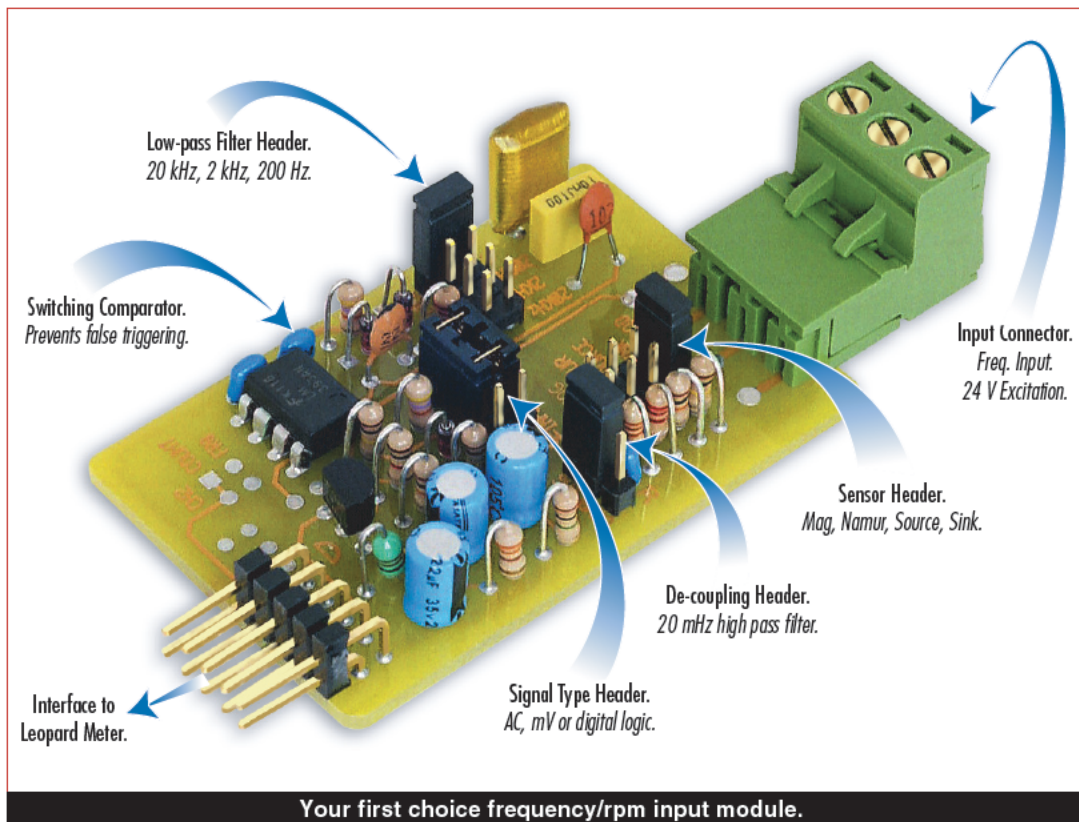
The IDT6 accepts industry standard thermocouples. The IDT6 provides a precise +8 V excitation for the pressure sensor and conditions the input signal ratiometrically to minimize drift and noise. A choice of 2 mV/V and 3 mV/V bridge sensitivities are available. Auto calibration using an external shunt resistor is standard on the IDT6.




Texmate TC / Pressure / Autocal Input Module IDT6.

FREQ./RPM INPUT MODULE WITH 24V EXC.

Order Code
IF05



Compatible With:



LEOPARD
BL-40F
BL-40RPM
DL-40F
DL-40RPM
FL-B101D40F
FL-B101D40R

INPUTS

★

FREQUENCY
RPM, Pulse, Counter

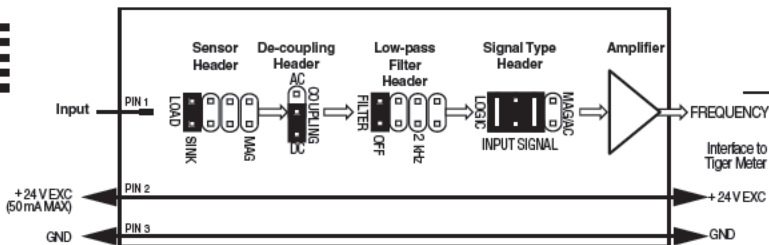
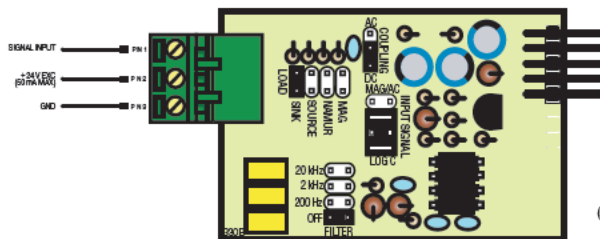
Your first choice frequency/rpm input module.

Should your transducer be a magnetic pick-up outputting small AC volts or an open-collector transistor switching voltage levels, the IF05 is easily connected with a selection of configuration headers. These headers provide a variety of options to interface to time varying or change-of-state signals.

Hardware Module Specifications

Signal Input	0-24 V DC, 0-30 V AC.
Low-pass Filter Header	Off, 200 Hz, 2 kHz, 20 kHz cut off frequency.
De-coupling Header	DC component removed by 0.02 Hz high-pass filter.
Sensor Header	Optional sink / source for digital transistor or switch interface; specific Namur 2-wire proximity detector option; magnetic pick-up (AC) choice.
Signal Type Header	Choice of DC (logic) or AC signal type.
Frequency Response	Set by Leopard meter configuration software. Display to 9999 counts.
Excitation Voltage	24 V DC (50 mA maximum) to power external transducers.
Maximum Input Frequency	20 kHz.

Connector Pinouts

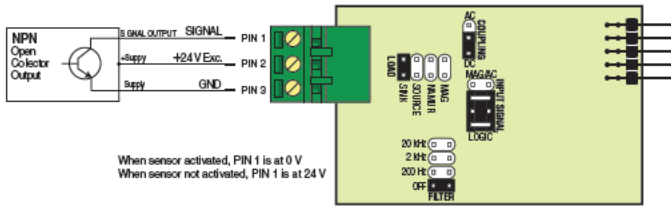


Description

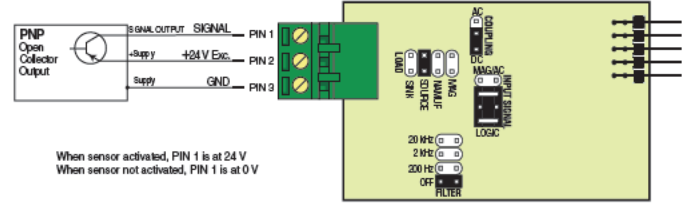
The IF05 is a frequency/RPM input module designed specifically for BL-40F, BL-40RPM, DL-40F, DL-40RPM, FL-B101D40F and FL-B101D40R meters in the Leopard family range. The IF05 input module receives and conditions a frequency input via pin 1 and supplies the input to the meter for further processing. Selectable on-board headers provide configuration settings allowing different sensor types to be selected along with high and low-pass filtering.

Interface Configuration Examples for IF05

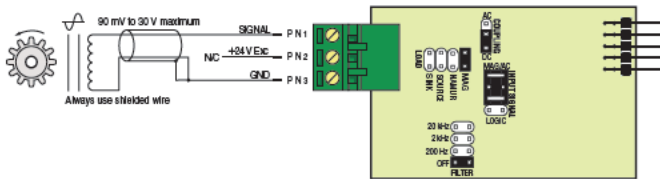
Example 1 – NPN Open-collector Output with Proximity Switch



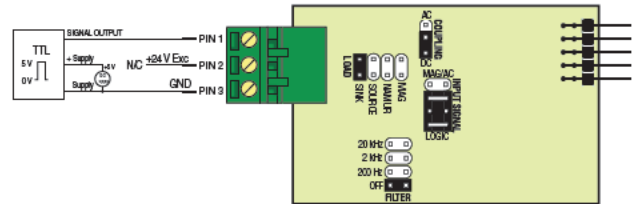
Example 2 – PNP Open-collector Output with Proximity Switch



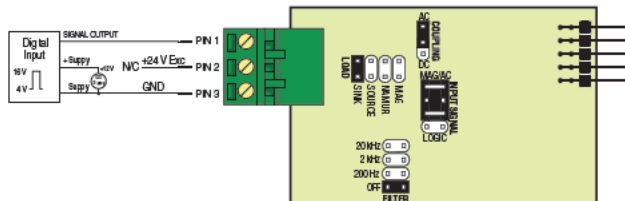
Example 3 – Hall Effect / Magnetic Pickup – mV Input



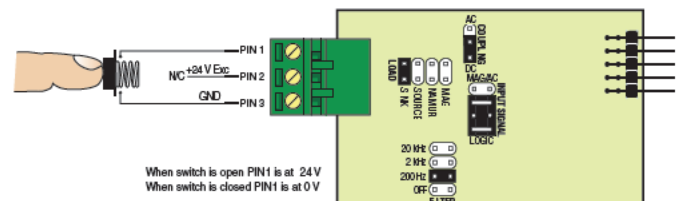
Example 4 – TTL Input



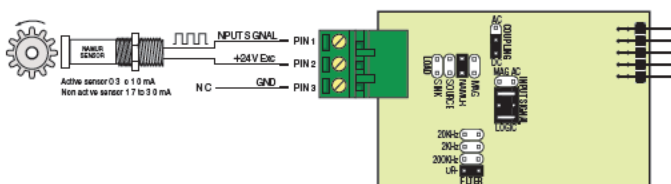
Example 5 – Digital Input with DC Voltage Offset



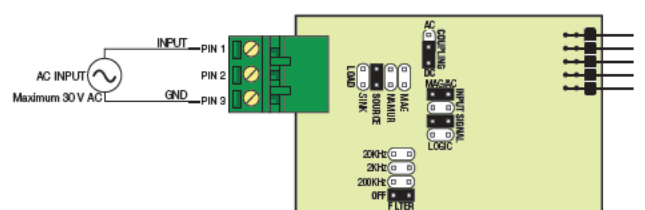
Example 6 – Pushbutton Switch



Example 7 – NAMUR Sensor

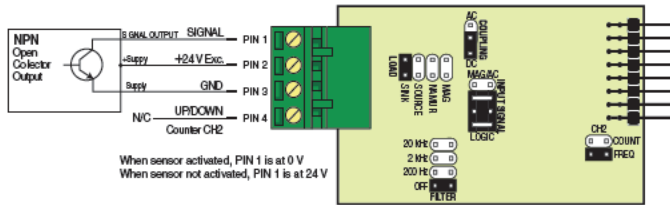


Example 8 – Tacho-generator Sensor

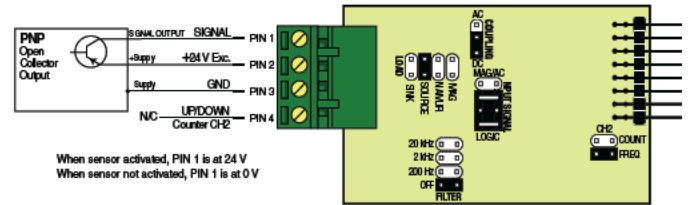


Interface Configuration Examples for IF10

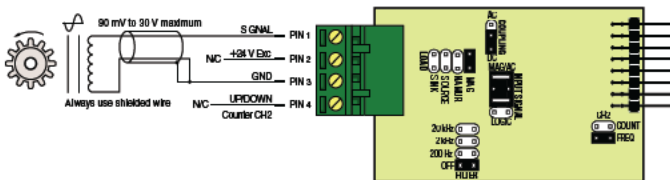
Example 1 – NPN Open-collector Output with Proximity Switch



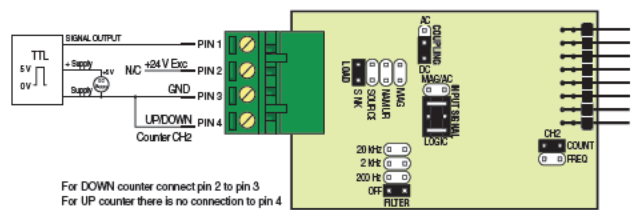
Example 2 – PNP Open-collector Output with Proximity Switch



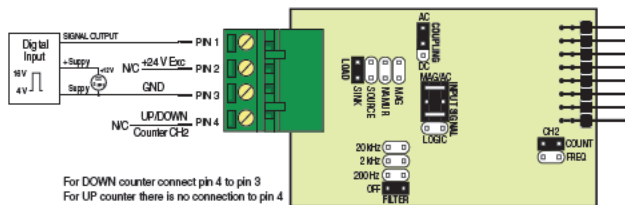
Example 3 – Hall Effect / Magnetic Pickup – mV Input



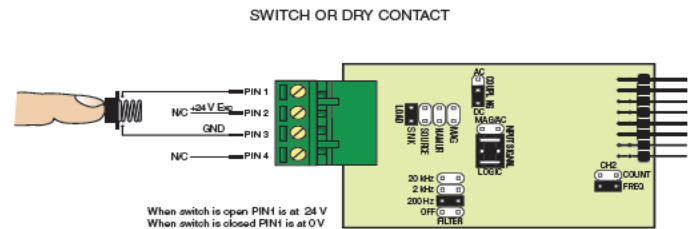
Example 4 – TTL Input



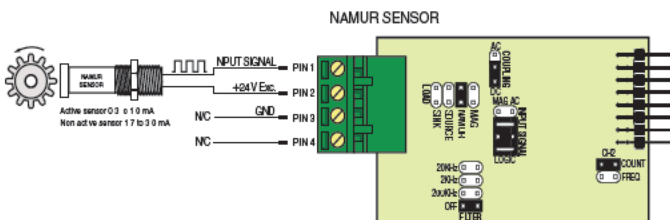
Example 5 – Digital Input with DC Voltage Offset



Example 6 – Pushbutton Switch with Frequency & UP Counter Option

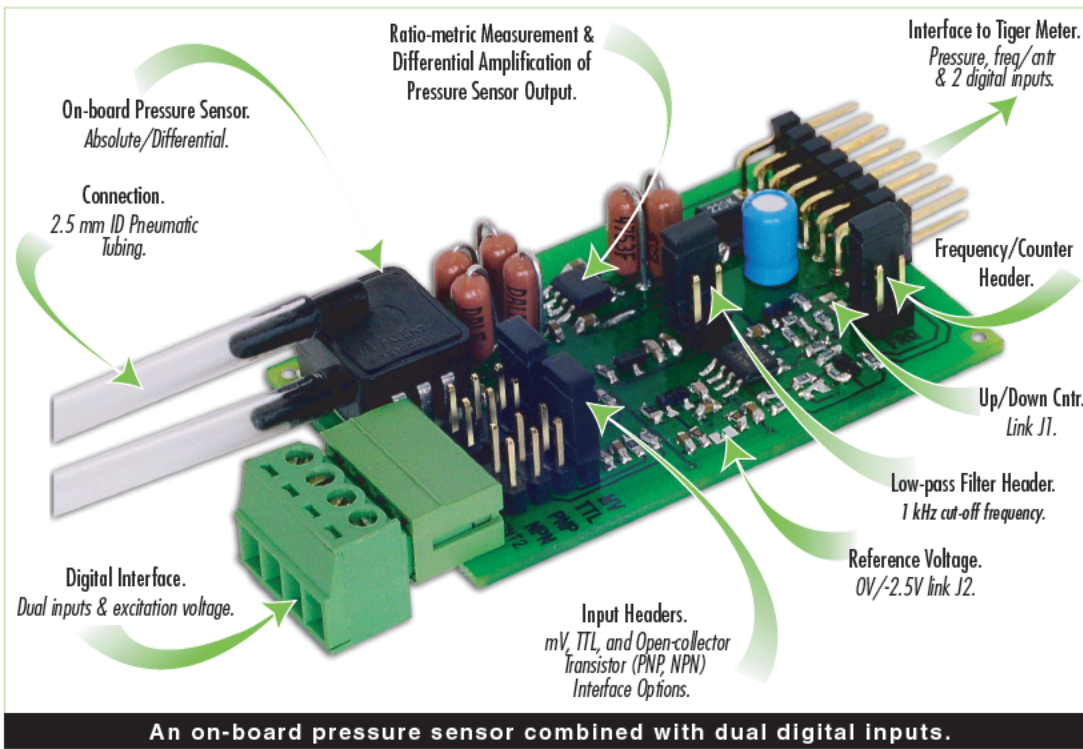


Example 7 – NAMUR Sensor



DIRECT PRESSURE SENSOR INPUT MODULE

**Order Code
IGYX**



Sensor Range	CH1
1 psi absolute	A
1 psi differential	B
5 psi absolute	C
5 psi differential	D
15 psi absolute	E
15 psi differential	F
30 psi absolute	G
30 psi differential	H
100 psi absolute	J
100 psi differential	K

For Single Channel IGYX with two status inputs, the last digit of the order code is always X.
For example, IGDX: CH1 5 psi, differential pressure.

Compatible With:

TIGER

INPUTS

- ★ DIRECT PRESSURE

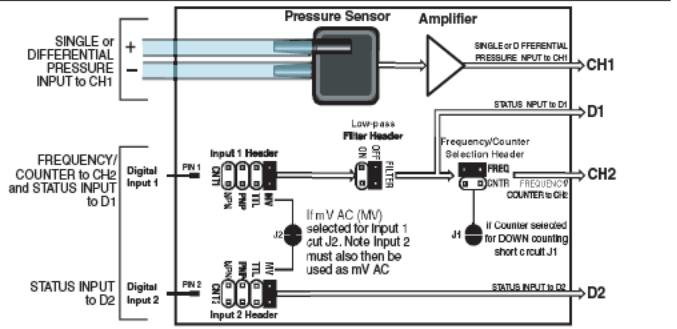
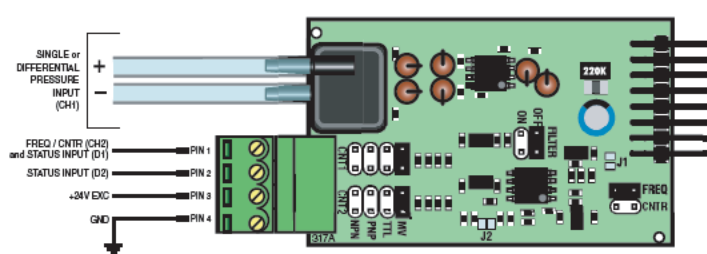
A cost effective solution for pressure applications requiring monitoring and process control of non-corrosive, non-ionic working fluids such as air, dry gases and similar. The pressure sensor is available in absolute and differential models and pressure ranges from 0 to 100 psi. Two independent digital inputs and a 24 V excitation voltage provide additional transducer and/or logic interfaces for measuring such variables as flow rate of the fluid being monitored.

Hardware Module Specifications	
Pressure Inputs Channel 1	Absolute or differential connections via 2.5 mm I.D. pneumatic tubing.
Pressure Ranges	0-1, 0-5, 0-15, 0-30, and 0-100 psi. Temperature compensated 0-50 °C, ± 0.4% F.S.
Max Pressure any Port	150 psi.
Repeatability	± 0.2% F.S. typical.
Linearity/Hysteresis	± 0.2% F.S. typical.
Digital Inputs	Dual independent digital inputs. Input 1 (Channel 2) can be configured to measure frequency, or as an UP/DOWN counter and as a digital input (D1). Input 2 is treated as a digital input only (D2). In both cases, frequency response is dependent on meter update rate.
Input Headers	Configured for mV, TTL, OC (NPN/PNP) interface.

Excitation Voltage
Low-pass Filter Header
Frequency/Counter Header

Millivolt reference to 0 V (open jumper J2)
TTL/PNP/NPN referenced to -2.5 V (close jumper J2)
24 V DC (50 mA) available for external signal exc.
Set to OFF position for high speed update.
Set to ON for 1 kHz cut off frequency low-pass filter. (Does not apply to Input 2.)
Input 1 selected as either a frequency or counter input. Up counter: open jumper J1. Down counter: close jumper J1. (Does not apply to Input 2.)

Connector Pinouts

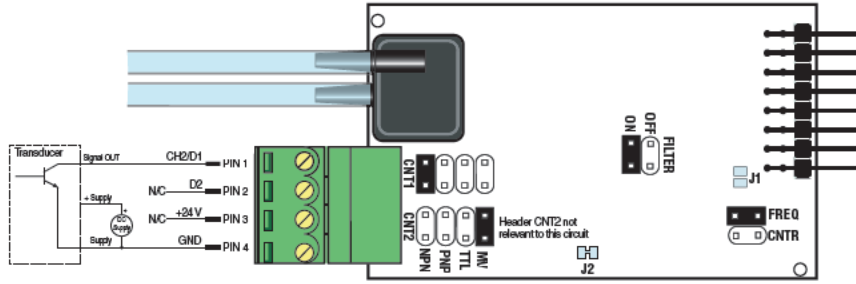


Description

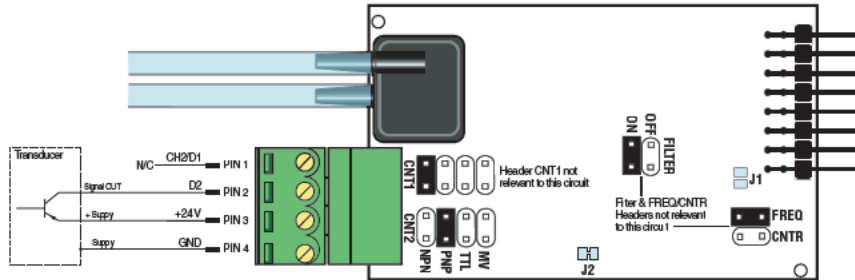
The Tiger 320 Series controller has four input channels capable of processing almost any input signal type. The direct pressure sensor input module IGYX uses only channels 1 and 2 and also the controller's digital inputs D1 and D2. The input module processes the pressure input via a built-in pressure sensor capable of processing an absolute or differential pressure input. The pressure signal is then fed to CH1 for further processing. Gain setting resistors are factory installed to optimize the full scale output for each pressure range. Contact Texmate when ordering to discuss your pressure range requirements. In addition to the pressure sensor, there is a digital interface with independent dual inputs and a 24 V excitation voltage. Each input uses an input header to interface to standard open collector (PNP or NPN), TTL, or millivolt digital signals. Frequency or counter inputs are fed through input 1 where they are conditioned and have the option of low-pass filtering, via a selection header, then fed to CH2 for further processing. Input 1 can also receive status inputs that are conditioned and fed to the controller's digital input D1, where it can be used for setpoint control or macro functions. Input 2 receives status inputs that are conditioned and fed to the controller's digital input D2, where it can also be used for setpoint control or macro functions.

Interface Configuration Examples for **IGYX**

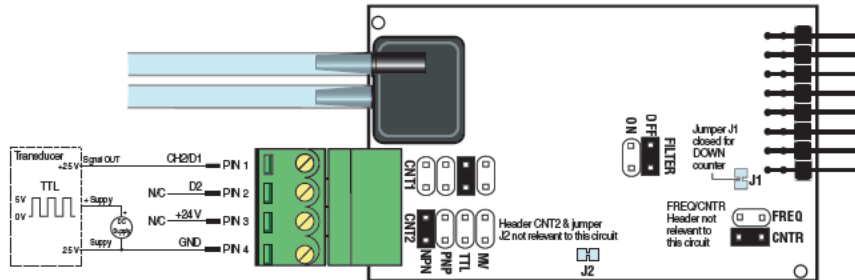
Example 1 – Frequency Input with 1 kHz Low-pass Filter



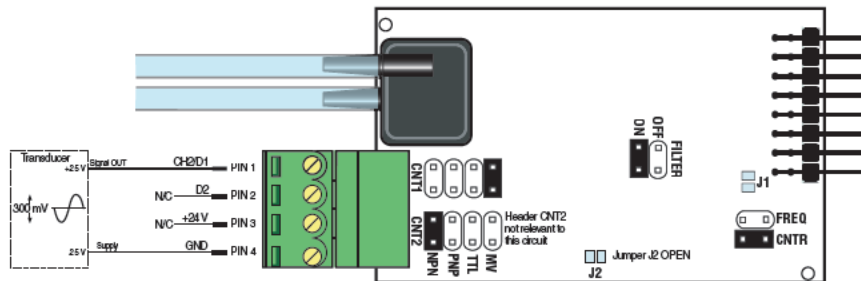
Example 2 – Monitoring Voltage Level Shifts



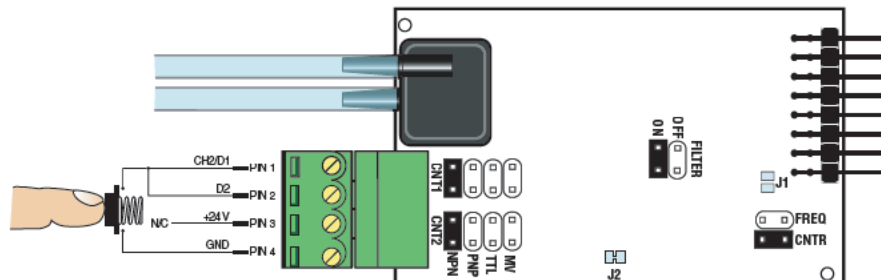
Example 3 – TTL Output Configured as a HS Down Counter



Example 4 – Transducer Input Configured as Up Counter

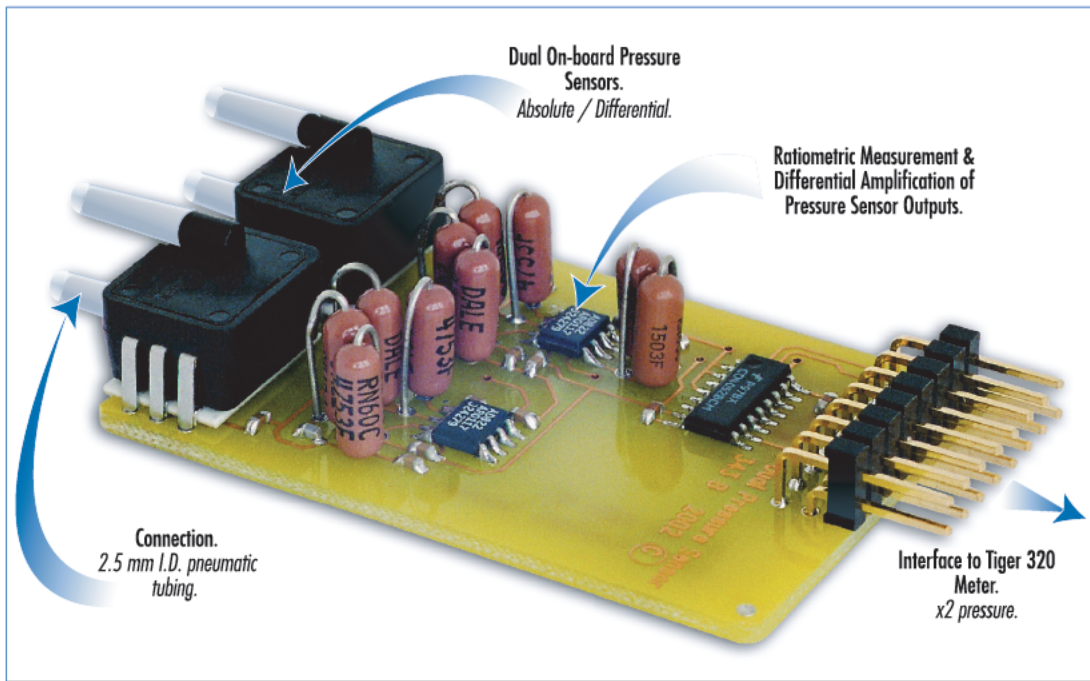


Example 5 – Switch Closure



DUAL DIRECT PRESSURE SENSOR INPUT MODULE

Order Code
IGYY



Dual on-board pressure sensors.

I G

Sensor Range	CH1	CH2
1 psi absolute	A	A
1 psi differential	B	B
5 psi absolute	C	C
5 psi differential	D	D
15 psi absolute	E	E
15 psi differential	F	F
30 psi absolute	G	G
30 psi differential	H	H
100 psi absolute	J	J
100 psi differential	K	K

For example, IGCD:
CH1 5 psi, absolute pressure.
CH2 5 psi, differential pressure.

Compatible With:



The cost effective solution for pressure applications requiring monitoring and process control of non-corrosive working fluids such as air, dry gases and similar. Two independent pressure sensors are available in absolute and differential combinations in five pressure ranges covering 0 to 100 psi. Select your type and range from the order code listed above.

Hardware Module Specifications

Pressure Inputs for Channel 1 & Channel 2
 Pressure Ranges

Absolute or differential connections via 2.5 mm I.D. pneumatic tubing.

0-1, 0-5, 0-15, 0-30, and 0-100 psi.

Max Pressure any Port
 Repeatability

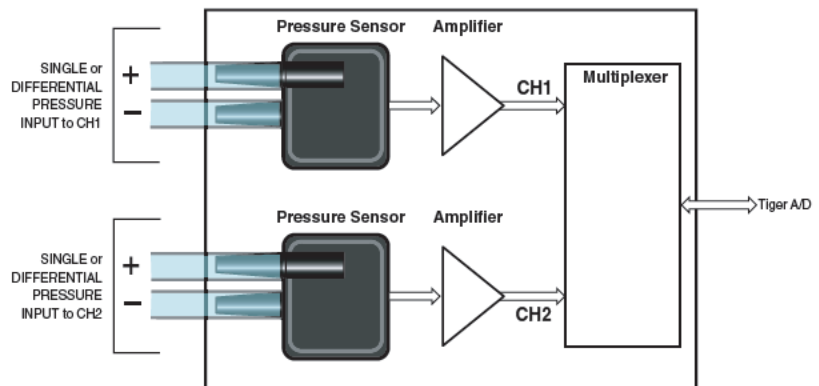
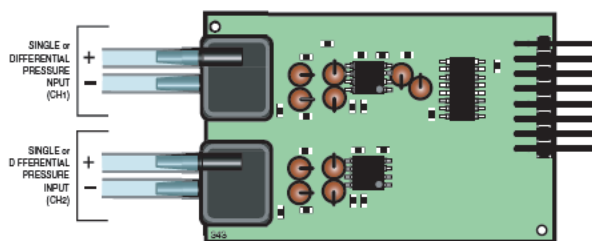
Temperature compensated 0-50 °C, ± 4% full scale
 150 psi.

Linearity/Hysteresis

± 0.2% full scale typical.

± 0.2% full scale typical.

Connector Pinouts



Description

The Tiger 320 Series controller has four input channels capable of processing almost any input signal type. The dual direct pressure sensor input module IGYY uses only channels 1 and 2.

The input module processes the pressure inputs via built-in pressure sensors capable of processing an absolute or differential pressure input. The pressure signals are then fed to CH1 and CH2 for further processing. Gain setting resistors are factory installed to optimize the full scale output for each pressure range. Contact Texmate when ordering to discuss your pressure range requirements.

UNIV. DIRECT PRESSURE SENSOR INPUT MODULE

Order Code
IGYZ

I G Z

Sensor Range	CH1
Not available	A
1 psi differential	B
Not available	C
5 psi differential	D
15 psi absolute	E
15 psi differential	F
30 psi absolute	G
30 psi differential	H
100 psi absolute	J
100 psi differential	K

The last digit of the order code is always Z.

For example, IGDZ:
CH1 5 psi, differential pressure.

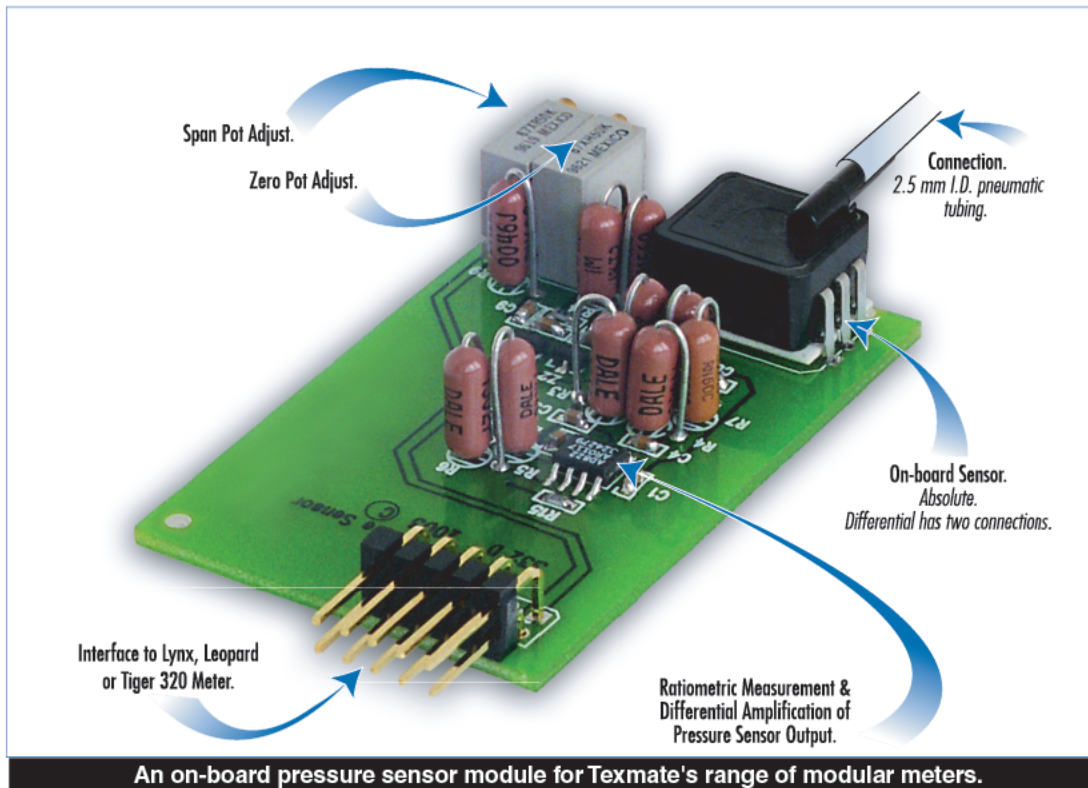
Compatible With:



TIGER

LEOPARD

LYNX



An on-board pressure sensor module for Texmate's range of modular meters.

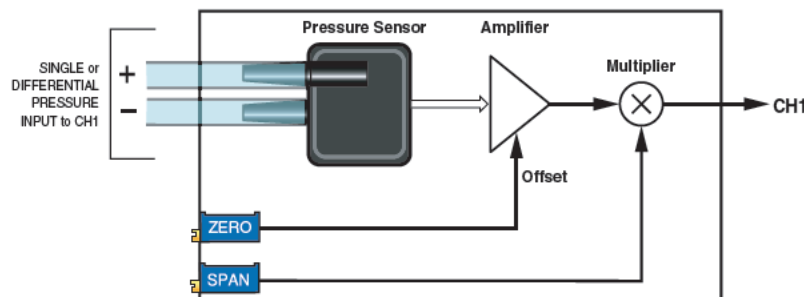
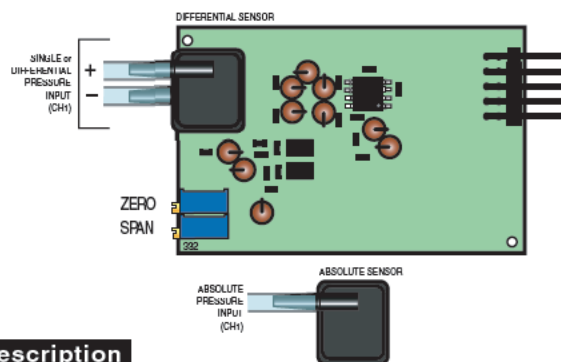
A cost effective solution for pressure applications requiring monitoring and process control of non-corrosive, non-ionic working fluids such as air, dry gases and similar. The pressure sensor is available in absolute and differential models and pressure ranges from 0 to 100 psi. The input module interfaces directly with Lynx, Leopard, and Tiger 320 Series meters.

Hardware Module Specifications

Pressure Inputs Channel 1	Absolute or differential connections via 2.5 mm I.D. pneumatic tubing.
Pressure Ranges	0-1, 0-5, 0-15, 0-30, and 0-100 psi. Temperature compensated 0-50 °C, ± 0.4% Full Scale.
Max Pressure any Port	150 psi.
Repeatability	± 0.2% Full Scale typical.
Linearity/Hysteresis	± 0.2% Full Scale typical.
Output Voltage	± 2 V Full Scale.
Zero Adjust	Zero potentiometer.
Span Adjust	Span potentiometer.



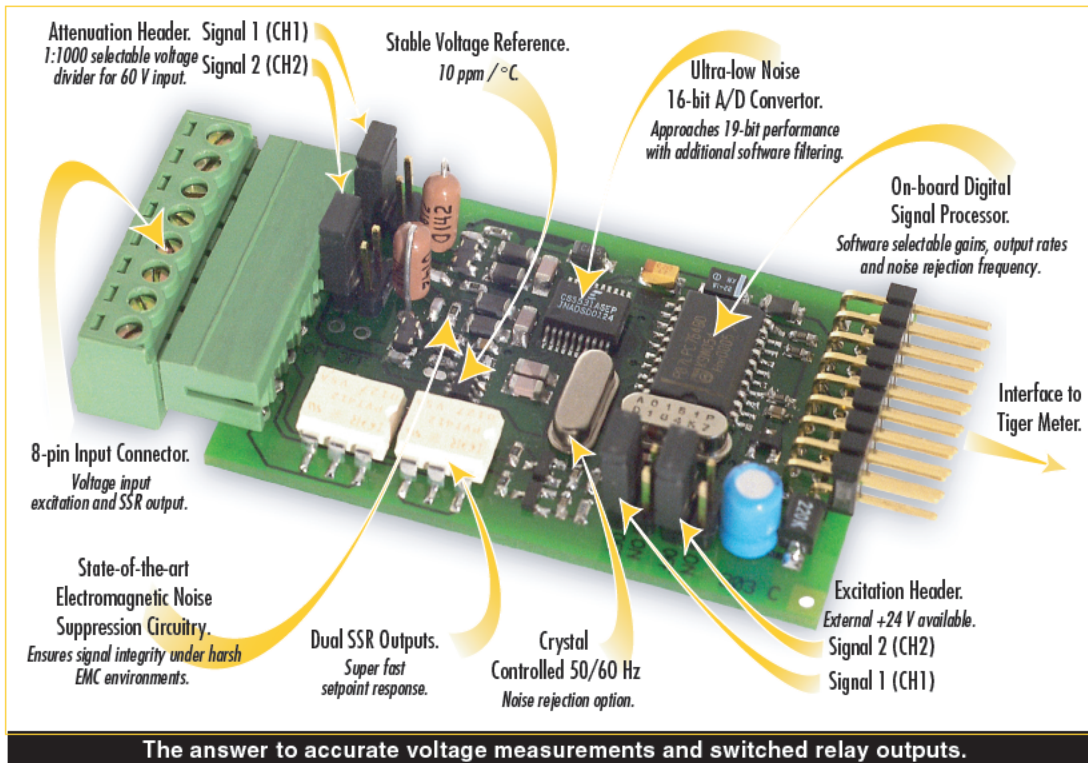
Connector Pinouts



Description

This module interfaces directly with Texmate's Tiger, Leopard, and Lynx range of modular controllers and panel meters. It has a single output that is an amplified and scaled version of the on-board direct pressure sensor. The sensor can be ordered as either an absolute or differential pressure type. Gain setting resistors are factory installed to optimize the full scale output for each pressure range. Contact Texmate when ordering to discuss your pressure range requirements.

16-BIT SMART DC VOLTS INPUT MODULE



The answer to accurate voltage measurements and switched relay outputs.

When faced with the task of supplying precise and stable voltage measurements over a large dynamic range, the automation engineer now has the solution at his fingertips. Combined with the Tiger 320 Series operating system, this module is the smart design solution for many and varied control applications.

Hardware Module Specifications

Input Channels	1 of 2 inputs available and chosen through software.
Input Range	Software selectable from ± 25 mV to ± 2 V for signal (1) and fixed ± 1 V for signal (2), + 2.1 V common mode.
Attenuation Header	1: 1000 voltage divider on both inputs for ≤ 60 V with optional current shunt configuration.
Excitation Header	+ 24 V (50 mA) available to power external sensors.
Input Sensitivity	0.08 μ V / count maximum.
Zero Drift	± 40 nV / °C typical.
Span Drift	± 5 ppm / °C of full scale maximum.
Non-linearity	$\pm 0.003\%$ of full scale maximum.
Input Noise	160 nVpp typical at 1 Hz output rate.
Signal processing Rate	50 Hz maximum, 1 Hz minimum.
Solid State Relays (SSR)	17 Ω , 140 mA (± 400 V breakdown).

Software Module Features

Output Rates	A choice of average response outputs, 1-50 Hz.
Gain Select	A choice of 7 voltage ranges from ± 25 mV to ± 2 V.
Frequency Select	50 / 60 Hz noise rejection (Software selectable).
Setpoint Switching	High speed (>1 ms) SSR outputs under setpoint control.

Some Relevant Operating System Features

- Setpoint Timer Functions.
- Setpoint Register Reset and Trigger Functions.
- On-demand Calibration.
- Macro Compiler for PLC Functions.
- 32-Point Linearization.
- Totalizer and Serial Printing.

Order Code

- ISD1** (50 Hz Rejection)
- ISD2** (60 Hz Rejection)
- ISD3** (50 Hz with SSRs)
- ISD4** (60 Hz with SSRs)

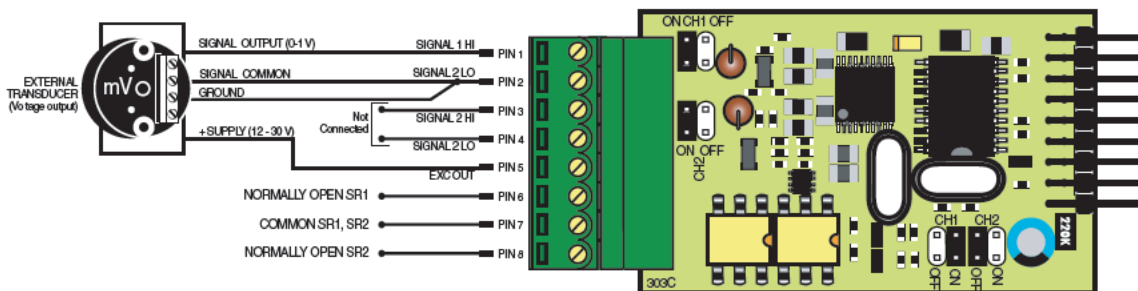
Compatible With:



INPUTS

★ Smart Precision DC Volts High Speed S.S.R. Output High Accuracy

Connector Pinouts



Description

The meter uses three smart setup registers to configure all smart input modules. Input modules ISD1 and ISD2 require smart register 1 to be set up, while input modules ISD3 and ISD4 require smart register 1 and smart register 2 to be set up. All four modules are single input signal modules with the choice of two channels. ISD3 and ISD4 also has two solid state relay (SSR) outputs driven by SP5 and SP6 control. SSR1 is controlled by SP5 and SSR2 is controlled by SP6.

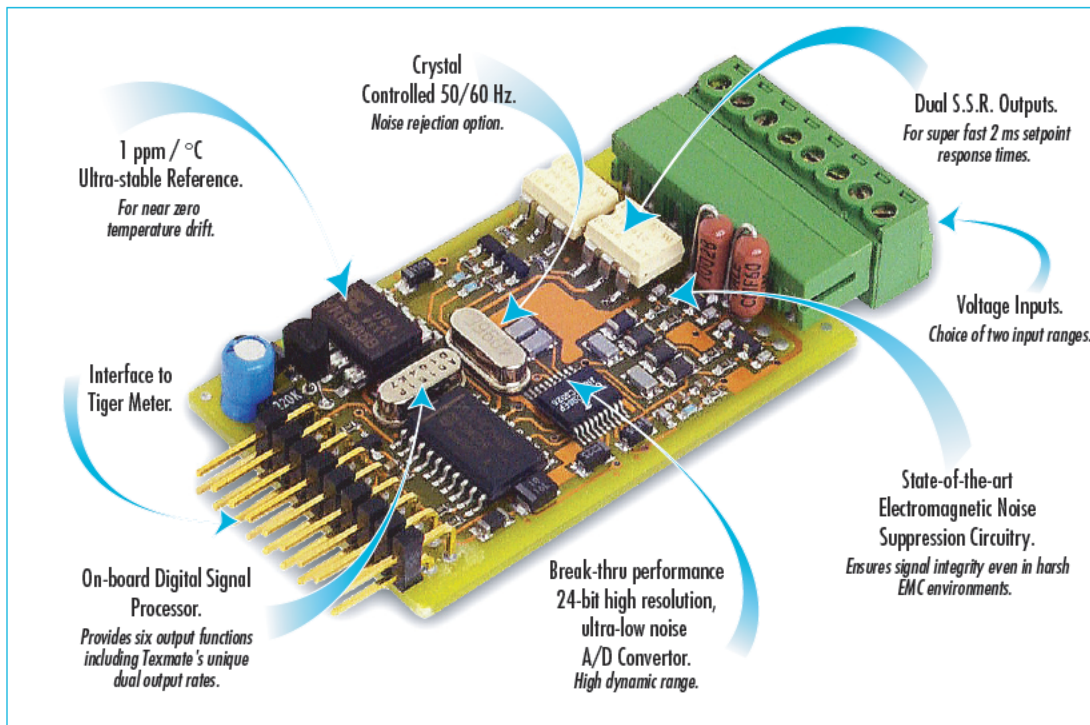
24-BIT SMART DC VOLTS INPUT MODULE

Order Code
ISD5 (50 Hz Rejection)
ISD6 (60 Hz Rejection)
ISD7 (50 Hz with SSRs)
ISD8 (60 Hz with SSRs)

Compatible With:  **TIGER**

INPUTS
 ★ High Resolution
 High Accuracy
 High-speed S.S.R. Output

Volts DC
 Millivolts DC
 Amps DC
 with Ext. Shunt



For the first time, an exceptionally high performance mV/V controller is available at a panel meter price.

This input module outperforms many laboratory benchtop meters and calibrators. Where absolute accuracy is a must, this is the module to use.

Hardware Module Specifications

Input Range	Software selectable from 30 mV to 60 V.
Input Sensitivity	5 nV / count maximum.
Zero Drift	± 40 nV / °C typical.
Span Drift	± 3 ppm / °C of F.S. (typical) for 30 mV to 2 V ranges. ± 30 ppm / °C of F.S. (typical) for 60 V range.
Non-linearity	± 0.002% of full scale maximum.
Input Noise	40 nV p-p typical at 1 Hz output rate (30 mV range).
SSR Processing Rate	960 Hz maximum 1 Hz minimum.
Tiger 320 Processing Rate	10 or 100 Hz.
Solid State Relay (SSR)	17 Ω, 140 mA (± 400 V Breakdown).

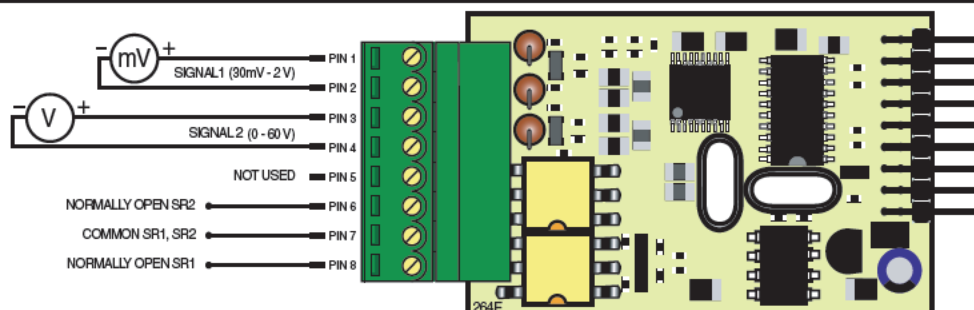
Software Module Features

Dual output rates	Rapid and average response outputs.
Peak & Valley Outputs	Monitoring over and under-shoots.
Capture Output	Hardwire signal capture.
Rate of Change Output	Useful for fine tuning reaction times.

Some Relevant Operating System Features

Smart Averaging.
 Setpoints.
 Linearization.
 Macro Compiler for complex math Functions.

Connector Pinouts



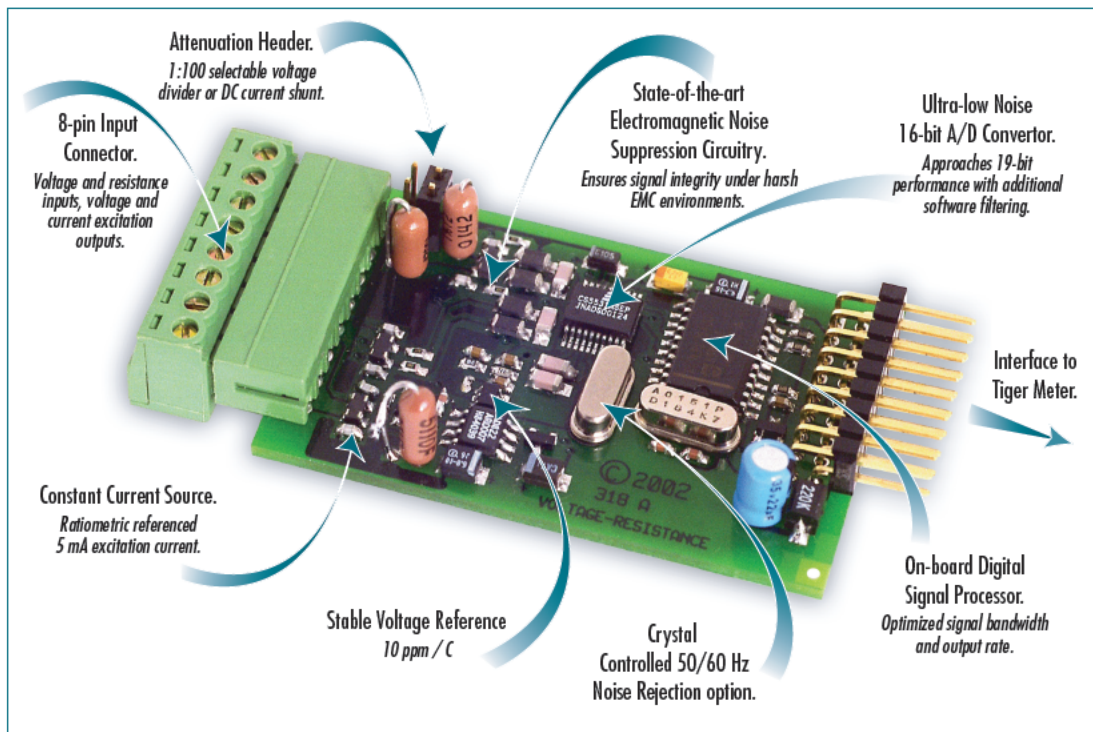
Description

The meter can be connected to two input ranges, but perform signal conditioning on only one. The required input range is selected through software configuration. ISD5 is a crystal controlled 50 Hz frequency range input module and ISD6 is a crystal controlled 60 Hz frequency range input module. ISD7 is a crystal controlled 50 Hz frequency range input module with two solid state relay (SSR) outputs. ISD8 is a crystal controlled 60 Hz frequency range input module with two SSR outputs. The SSR outputs are known as smart relay 1 (SR1) and smart relay 2 (SR2) and are controlled through meter setpoints SP5 and SP6 respectively. In their unenergized state, the SSRs can be configured in software to be either a normally open (NO) or normally closed (NC) contact and can be switched at the selected averaged input signal or rapid response rate. The meter uses three smart setup registers to configure all smart input modules. ISD5 and ISD6 require only smart register 1 to be set up, while ISD7 and ISD8 require smart register 1 and smart register 2 to be set up. This module produces six output registers. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6.

VOLTAGE & RESISTANCE SMART MODULE

Order Code
ISD9

Compatible With:



The smart answer to precise resistance & voltage measurement.

Initially designed to measure copper winding resistance to within fractions of an ohm and the surface temperature using an infrared sensor. When coupled with the Tiger 320 Series operating system this module, and its on-board current and voltage excitation outputs, satisfy OEMs wishing to accurately measure a range of resistance and voltage/current signals.

INPUTS	
★	Dual Smart 16-bit Precision

Volts DC

Resistance

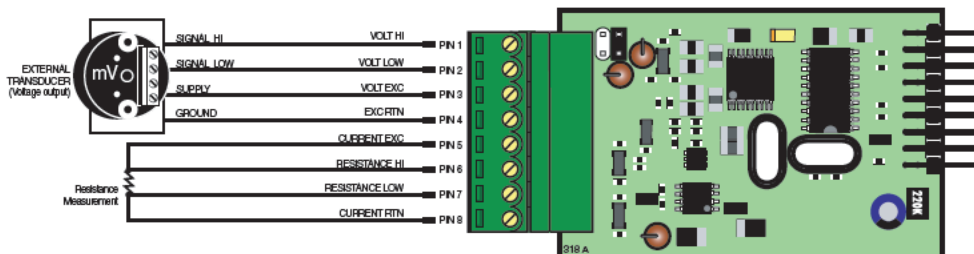
Hardware Module Specifications

A/D Converter	Dual channel ultra-low noise 16-bit A/D with effective 19-bit resolution in post processing software.
Input Sensitivity	0.08 $\mu\text{V}/\text{count}$ maximum.
Zero Drift	$\pm 40 \text{ nV}/^\circ\text{C}$ typical.
Span Drift	$\pm 5 \text{ ppm}/^\circ\text{C}$ of full scale maximum.
Non-linearity	$\pm 0.003\%$ of full scale maximum.
Input Noise	160 $\mu\text{Vp-p}$ typical at 1 Hz output rate.
Voltage Reference	+ 2.5 V, 10 ppm.
Voltage Input	Selection of ranges $\pm 25 \text{ mV}$ to $\pm 2 \text{ V}$, 2.1 V common mode.
Attenuation Header	1:100 voltage + for voltage inputs $\leq 60 \text{ V}$ or optional mA current shunt configuration.
Excitation Voltage	+ 24 V (50 mA) to drive external sensors.
Resistance Input	Designed to measure voltage drop across small resistances (typically $\sim 10 \Omega$), +3 V common mode.
Resistance Resolution	1 m Ω (10 Ω load resistor).
Excitation current	5 mA constant current source to drive external resistor. Ratiometrically referenced to A/D for precision low-drift resistance measurement.

Software Module Features

Output Rates	A choice of average response outputs, 1-20 Hz.
Gain Select	7 voltage ranges to optimize signal resolution.
Frequency Select	50 / 60 Hz noise rejection. Software selectable.

Connector Pinouts



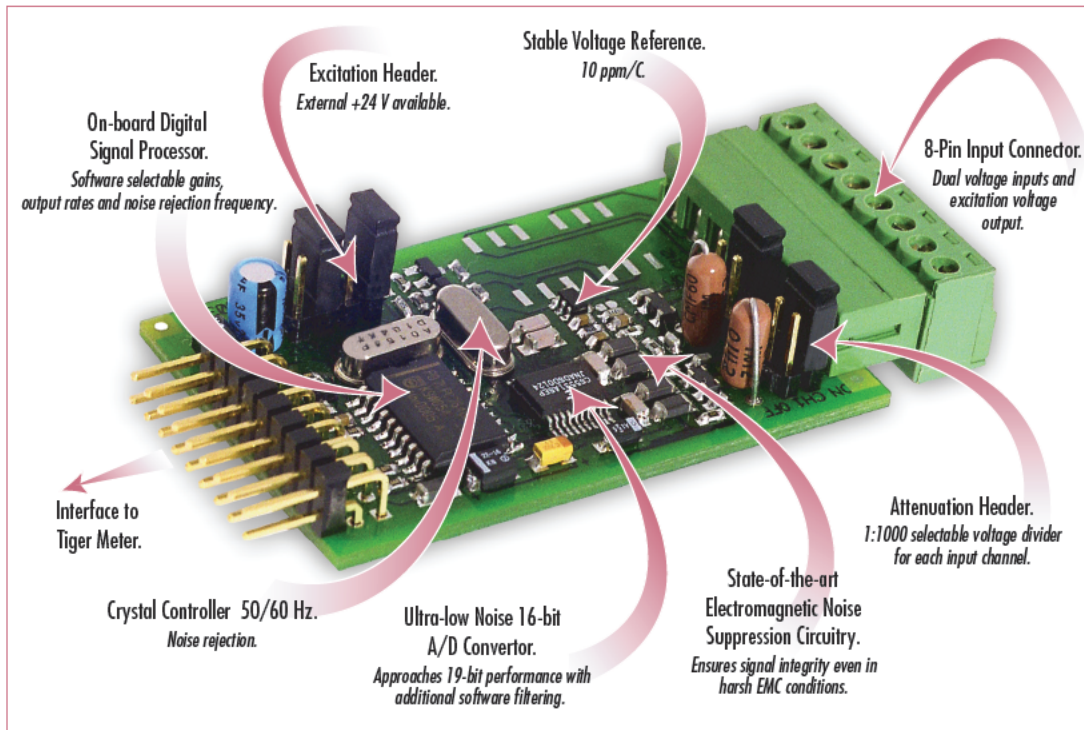
Description

The meter has three smart setup registers to configure all smart input modules. ISD9 requires smart registers 1 and 2 to be configured. Because this is a dual input module, measuring voltage and resistance, independent sensor inputs can be software selected for Tiger 320 Series meter channels 1, 2, 3, and 4. This module produces two output registers. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6.

16-BIT SMART DUAL DC VOLTS INPUT MODULE

Order Code
ISDA (50 Hz Rejection)
ISDB (60 Hz Rejection)

Compatible With:  **TIGER**



An extremely flexible and powerful dual input mV/V Input Module.

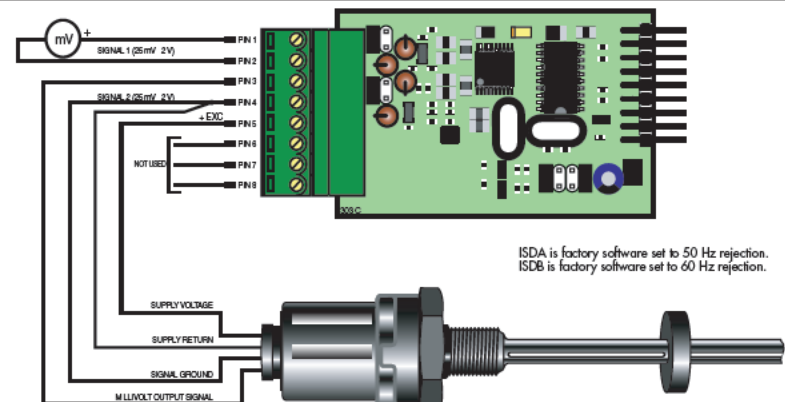
This input module comes with a myriad of hardware and software options to satisfy the requirements of precision voltage measurement and dual input functionality. When combined with the Tiger 320 Series operating system, the OEM has a powerful solution to applications ranging from small voltage measurement through to process control, all at a very affordable price.

	Hardware Module Specifications
Input Range	Software selectable from 25 mV to 2 V, +2.1 V common mode.
Input Channels	Maximum 60 V using signal attenuation header. Dual with independent gains. Zero X-talk between channels each having 19-bit effective resolution.
Input Sensitivity	0.08 μ V/Count maximum.
Zero Drift	± 40 nV/°C typical.
Span Drift	± 5 ppm/°C of full scale maximum.
Non-linearity	± 0.003 % of full scale maximum.
Input noise	160 nVp-p typical at 1 Hz output rate.
Signal Processing Rate	20 Hz maximum, 1 Hz minimum.
Excitation Voltage	+24 V (50mA) available to power external sensors.

	Software Module Features
Output Rates	Choice of 4 average response outputs, 1-20 Hz.
Gain Select	Choice of 7 voltage ranges from ± 25 mV to ± 2 V.
Frequency Select	50/60 Hz noise rejection (Software selectable).

- Some Relevant Tiger 320 Series Operating System Features**
- Auto Zero Maintenance.
 - Set TARE, Reset TARE.
 - Setpoint Timer Functions.
 - Setpoint Register Reset and Trigger Functions.
 - On-demand Calibration.
 - Macro Compiler for PLC Functions.
 - 32-Point Linearization.
 - Totalizer and Serial Printing.

Connector Pinouts



Description

The meter has three smart setup registers to configure all smart input modules. ISDA and ISDB require smart registers 1 and 2 to be configured. Because this is a dual input module, independent sensor inputs can be software selected for Tiger 320 Series meter channels 1, 2, 3, and 4. This module produces two output registers. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6.

DUAL LVDT SMART INPUT MODULE

Order Code

ISL1 (50 Hz Rejection)

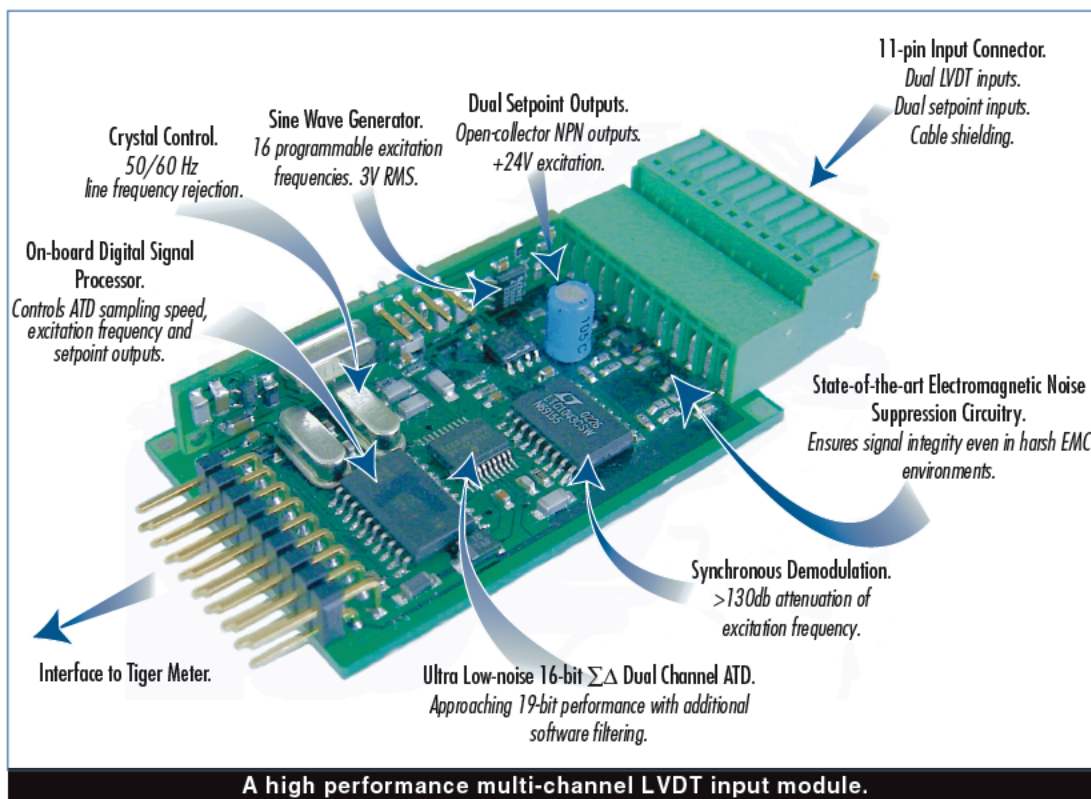
ISL2 (60 Hz Rejection)

Compatible With:



INPUTS

SPECIAL	★
PROCESS	4 / 20 mA 1 / 5 V
VOLTS	AC / DC
AMPS	AC / DC
WATTS	AC / DC
LOAD-CELL	PRESSURE
FREQUENCY	RPM, Pulse, Counter
TEMPERATURE	TC, RTD
RESISTANCE	



A dual LVDT signal conditioning input module interfaced to the Tiger 320 Series Operating System provides programmable excitation frequency, ATD sampling and averaging rate, and high-speed setpoint outputs. Synchronous demodulation at multiples of line frequency ensures high frequency response applications unhindered by carrier noise.

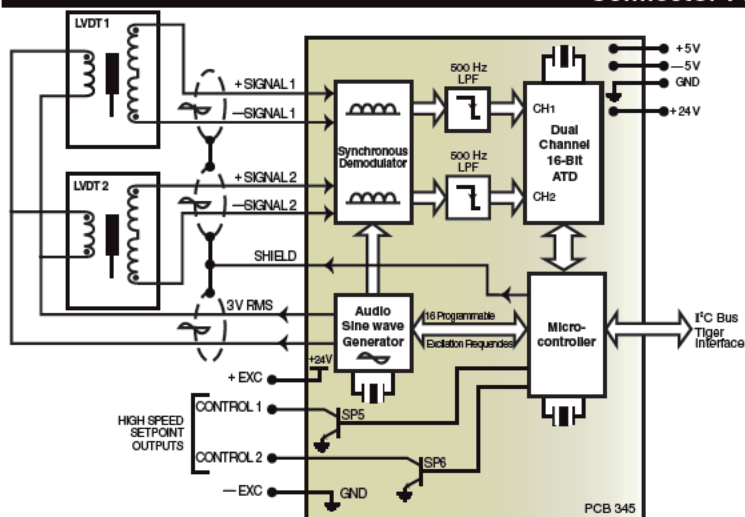
Hardware Module Specifications

Excitation Voltage	3 V RMS sine wave, Zero DC component THD < 2% (1.2 KHz).
Excitation Frequency	x 16 available (1.2 KHz to 11.52 KHz) as multiples of 50/60 Hz line frequency. Crystal locked, software driven.
Temperature Coefficient	± 50ppm/°C full scale (typical).
Dual LVDT Inputs	30K Ω input impedance. Synchronous demodulation of excitation carrier. >130dB rejection of excitation carrier.
Frequency Response	500Hz (-3dB) low-pass filter.
Analog to Digital	Dual channel $\Sigma\Delta$ A/D converter approaching 19-bit resolution. Ratiometric operation relative to excitation voltage magnitude.
High-speed Control Outputs	Dual high speed open collector transistor outputs 600mA max. under setpoint control (SP5/SP6).

Software Module Specifications

Dual Output Rates	Rapid & average response outputs. 1Hz, 4Hz, 10Hz, 20Hz, averaged.
Single Fast Output	Single channel, increased signal to noise. 4Hz, 10Hz, 20Hz, 40Hz averaged.
Excitation Frequency	16 selectable frequencies.
Line Frequency Rejection	50/60 noise rejection.
High-speed Control Outputs	Choice of logic modes to control high speed setpoints.

Connector Pinouts



Description

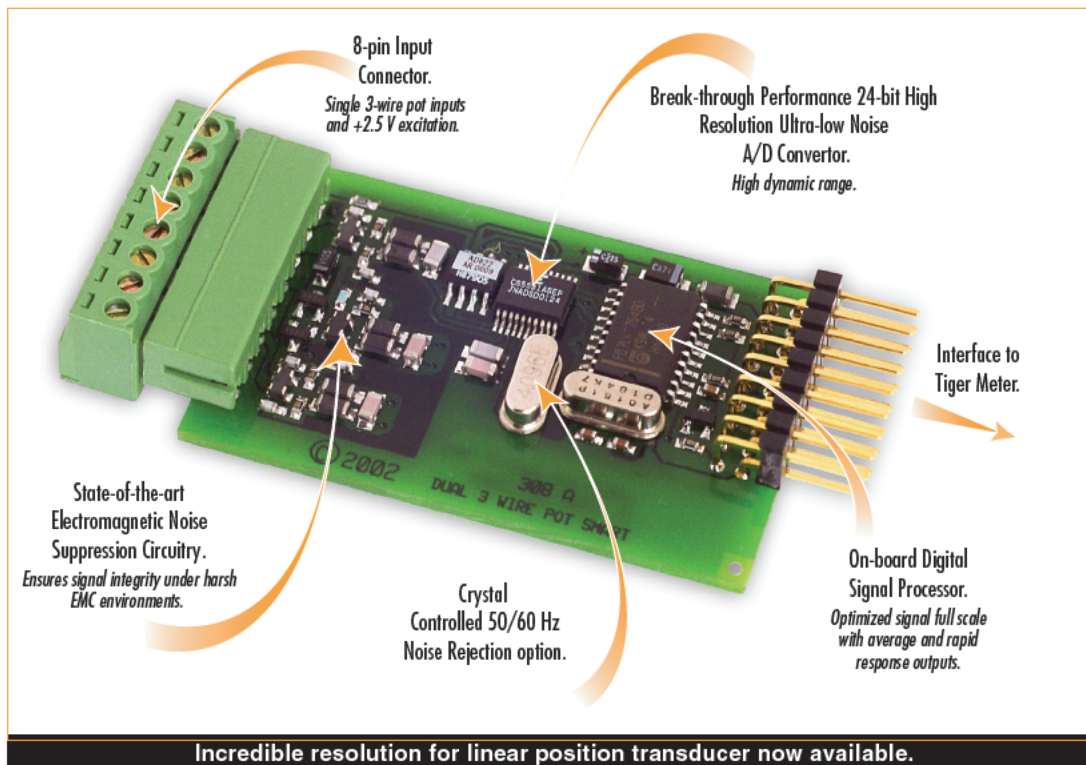
ISL1 / ISL2 is a smart input module designed to drive and condition the signals from two LVDT transducers. The module contains two high-speed microcontrollers and a S D 16-bit dual channel A/D converter. It communicates with the selected Tiger controller via the I²C data bus. One of the microcontrollers generates the sine wave for the LVDT excitation frequency. These frequencies are produced as multiples of the line frequency (either 50 Hz or 60 Hz). Up to 16 frequencies are available and are selected using the Tiger controller setup.

The output to the primary coil of both LVDTs is a 3 V RMS sine wave. The received LVDT signals are synchronously demodulated and filtered to remove the carrier frequency. The S D 16-bit A/D converter has over 130 dB noise rejection at the excitation frequencies and is capable of 40 Hz averaged output on 45 samples. Two open collector NPN transistors are available as high-speed controlled outputs. Tiger controller setpoint SP5 controls output CONTROL 1 and SP6 and controls output CONTROL 2.

SINGLE 3-WIRE POTENTIOMETER SMART MODULE

Order Code
ISR1 (50 Hz Rejection)
ISR2 (60 Hz Rejection)

Compatible With: 
TIGER



INPUTS

★ Smart High Resolution 24-bit Accuracy

Resistance

Incredible resolution for linear position transducer now available.

Designed exclusively for continuous linear displacement measurements, ISR1 and ISR2 provide unprecedented resolution with over 8,000,000 denominator counts available full scale. Combined with the Tiger 320 Series operating system, the user has the design solution for the most demanding industrial applications.

Hardware Module Specifications

A/D Converter	Single channel high performance 24-bit A/D with post processing signal averaging.
Input Sensitivity	0.02 $\mu\text{V}/\text{count}$ maximum.
Zero Drift	$\pm 40 \text{ nV}/^\circ\text{C}$ typical.
Span Drift	$\pm 5 \text{ ppm}/^\circ\text{C}$ of full scale maximum.
Non-linearity	$\pm 0.002\%$ of full scale maximum.
Input Noise	80 $\mu\text{Vp-p}$.
Potentiometer Inputs	Single, + 2.5 V excitation (10 mA) ratiometric referenced to A/D.
Resolution	1:8,000,000 counts of full scale.
Frequency Select	ISR1 50 Hz; ISR2 60 Hz.

Output Rates
Gain Select

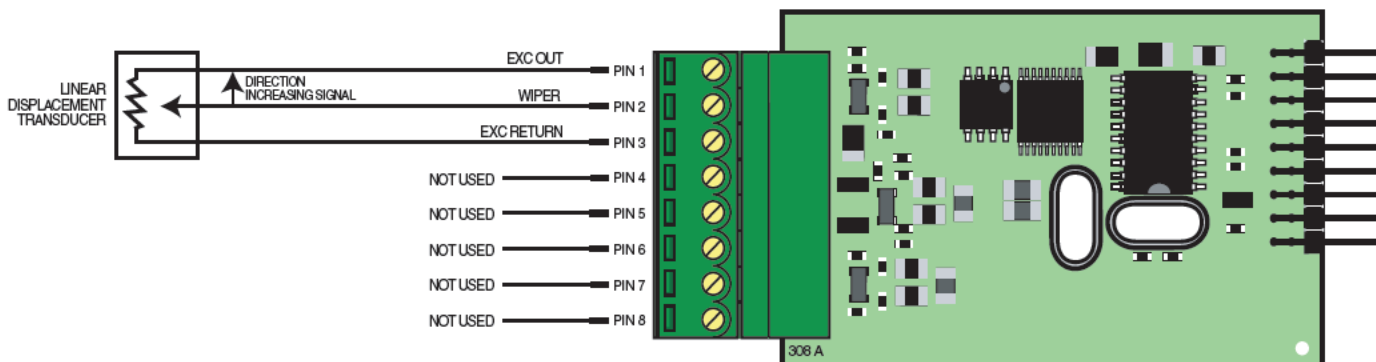
Software Module Features

A choice of average response outputs, 1-50 Hz. Optimized for +2.5 Volt excitation.

Some Relevant Operating System Features

- Setpoint Timer Functions.
- Setpoint Register Reset and Trigger Functions.
- On-demand Calibration.
- Macro Compiler for PLC Functions.
- 32-Point Linearization.
- Totalizer and Serial Printing.

Connector Pinouts



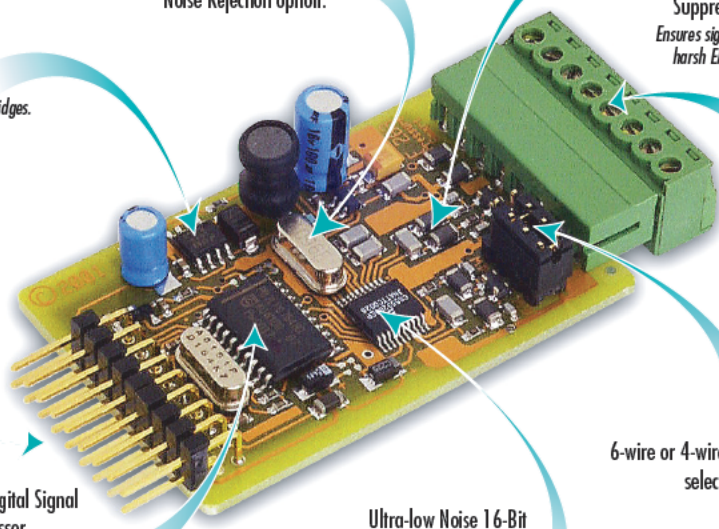
Description

The meter has three smart setup registers to configure smart input modules. ISR1 and ISR2 requires smart register 1 to be configured. The averaged potentiometer signal can be software selected for Tiger 320 Series meter channels 1, 2, 3, & 4. The signals can be transferred to Channel 1 via Code 2, to Channel 2 via Code 4, to Channel 3 via Code 5, and to Channel 4 via Code 6.

16-BIT SMART LOAD CELL INPUT MODULE

Order Code
ISS1 (50 Hz Rejection)
ISS2 (60 Hz Rejection)

Compatible With: 
TIGER



Crystal Controlled 50/60 Hz Noise Rejection option.

On-board Excitation Voltage Generator.
 Enough to power 8 x 350 Ω bridges.

State-of-the-art Electromagnetic Noise Suppression Circuitry.
 Ensures signal integrity even in harsh EMC environments.

8-pin Input Connector.

Interface to Tiger Meter.

On-board Digital Signal Processor.
 Provides six output functions including Texmate's unique dual output rates.

Ultra-low Noise 16-Bit A/D Converter.
 Approaching 19-bit performance with additional software filtering.

6-wire or 4-wire Bridge Header selectable.

For the first time, a high performance load cell controller is available at a panel meter price.

INPUTS

★ Smart High 16-bit Resolution High Accuracy

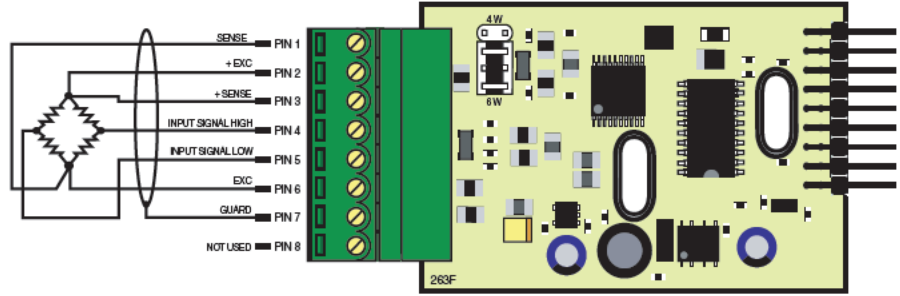
Combining this input module with the functionality of the Tiger 320 Series Operating System, results in a versatile, powerful controller. Now such tasks as weighing, bagging, batching, and continuous batching control can be performed. In fact our customers have replaced multi-faceted control systems including weighing controllers, PLCs and timers with a single Tiger controller.

	Hardware Module Specifications
Excitation	5 V DC, 130 mA maximum.
Input Range	Software selectable for sensors from 1 mV/V to 20 mV/V.
Input Sensitivity	0.08 μV/Count maximum.
Zero Drift	± 40 nV/ °C typical.
Span Drift	± 5 ppm/ °C of full scale maximum.
Non-linearity	± 0.003% of full scale maximum.
Input Noise	160 nVpp typical at 1 Hz output rate.
Signal processing Rate	50 Hz maximum, 1 Hz minimum.

	Software Module Features
Dual output rates	Rapid and average response outputs. Ideal for 2 and 3-speed weighing / bagging systems.
Peak & Valley Outputs	Monitoring over and under-shoots.
Capture Output	Hardwire signal capture.
Rate of Change Output	Useful for fine tuning reaction times.
Frequency Select	ISS1 50 Hz noise rejection; ISS2 60 Hz noise rejection.

- Some Relevant Operating System Features**
- Auto Zero Maintenance.
 - Set TARE, Reset TARE.
 - Setpoint Timer Functions.
 - Setpoint Register Reset and Trigger Functions.
 - On-demand Calibration.
 - Macro Compiler for PLC Functions.
 - 32-Point Linearization.
 - Totalizer and Serial Printing.

Connector Pinouts



Description

The meter uses three smart setup registers to configure smart input modules. ISS1 and ISS2 requires only smart register 1 to be set up. This module produces six output registers. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6.

DUAL RTD SMART INPUT MODULE

Order Code

IST5 (50 Hz Rejection)

IST6 (60 Hz Rejection)

Compatible With:



TIGER

8-pin Input Connector.
Dual 4-wire RTD inputs.

State-of-the-art Electromagnetic Noise Suppression Circuitry.
Ensures signal integrity even in harsh EMC environments.

On-board Digital Signal Processor.
Produces 10 Hz averaged output of each RTD signal.
Monitors RTD's for O/C conditions.

Ultra low-noise 16-bit $\Sigma\Delta$ Dual Channel ATD.
Approaching 19-bit performance with additional software filtering.

Crystal Controlled Line Frequency Rejection.
50/60 Hz line frequency rejection.

Interface to Tiger Meter.

Unprecedented 0.01° accuracy on two channels.

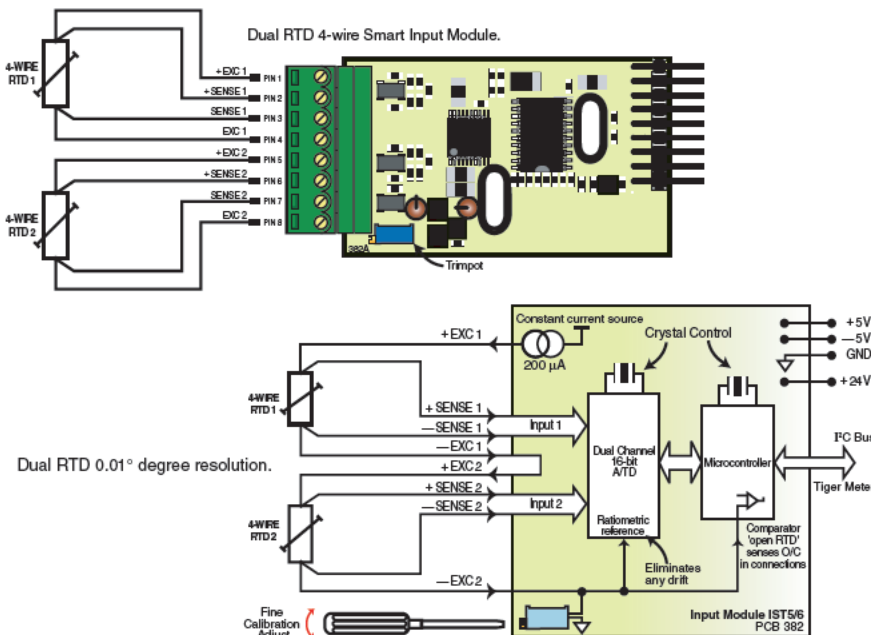


Designed for applications in precision temperature measurement and calibration systems, the dual channel RTD input module interfaces directly with all Tiger 320 Series controllers. Using 4-wire RTDs, 0.01° resolution and repeatability is possible on each channel.

Dual Inputs	Hardware Module Specifications
	4-wire RTD, choice of Pt 385 or Pt 392.
	800/960 sample rate per channel.
	10 Hz average output per channel.
Excitation Current	200 μ A constant current source.
	Ratiometric referenced to ATD.
	Current sense for open circuit RTD.
Resolution	0.01° on each channel.
Analog-to-Digital	Dual channel $\Sigma\Delta$ ATD converter approaching 19-bit resolution operating ratiometric with respect to excitation current.

	Software Module Specifications
Line Frequency Rejection	50 Hz (IST5) / 60 Hz (IST6).
Input Type Selection	Select from either Pt 385 or Pt 392 for both channels.
Calibration	Easy calibration with wide operating temperatures through Tiger 320 Series software.

Connector Pinouts



Description

Input module IST5/6 has two RTD inputs: RTD1 and RTD2. RTD1 is physically connected to input 1 and RTD2 is physically connected to input 2 of IST5/6's dual channel, 16-bit A to D convertor.

SMT1 resides in IST5/6's microcontroller and allows you to select the RTD type to suit your input. SMT1 applies a Pt 385 or Pt 392 linearization table to both input 1 and input 2.

The IST5/6 input module produces two output registers, one for the averaged signal output from each RTD. The data from one of these registers can be transferred to a channel in the Tiger meter. All four channels can be selected for either RTD1 or RTD2, or a combination of both inputs can be selected, for example:

- RTD1 to CH1.
- RTD2 to CH2.
- CH3 not used.
- CH4 not used.

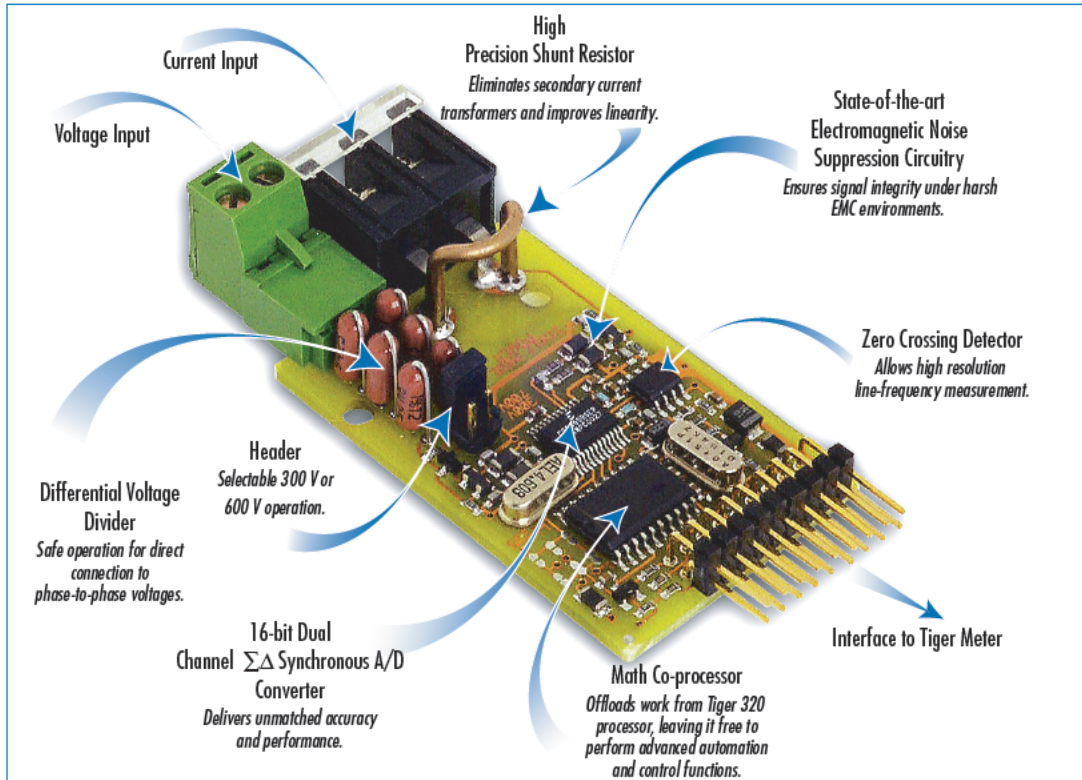
The channels are selected through the codes in the Tiger meter's main programming mode:

- RTD1 or RTD2 to CH1 via Code 2.
- RTD1 or RTD2 to CH2 via Code 4.
- RTD1 or RTD2 to CH3 via Code 5.
- RTD1 or RTD2 to CH4 via Code 6.

SINGLE PHASE SMART POWER MODULE

Order Code
IW01 (300V, 1Amp)
IW02 (300V, 5Amp)
IW04 (600V, 1Amp)
IW05 (600V, 5Amp)

Compatible With: 
TIGER



The complete solution to stand-alone low cost metering applications required in the power industry.

When combined with the powerful Tiger 320 Series controller, this module performs many common AC functions including:

- Power for single-phase 2-wire and single-phase 3-wire systems.
 - R.M.S. voltage for both line-to-line and line-to-neutral systems.
 - R.M.S. current via 1 amp or 5 amp CTs. Power factor (Cos ϕ).
- The Tiger 320 Series controller can convert kW to kWh and amps to amp hrs using its dual totalizers and resolve the zero crossing detector line-frequency to 3 decimal places.

Hardware Module Specifications

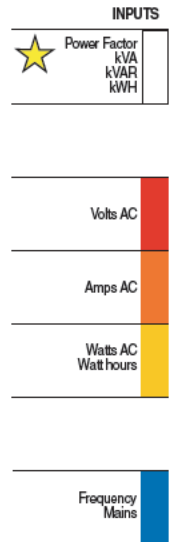
Voltage Range	50-300 VAC, 100-600 VAC header selectable.
Current Range	Either 1 amp or 5 amp current transformers.
Voltage Accuracy	0.1% of full scale input.
Current Accuracy	0.05% of full scale input.
Power Accuracy	$\pm 0.2\%$ of full scale input.
Cos ϕ Accuracy	$\pm 0.5\%$ of full scale output $\pm 0.3^\circ$.
Temperature Drift	60 ppm/ $^\circ\text{C}$ maximum.
Output Signal Rate	5 Hz.
Frequency Resolution	± 0.001 Hz

Software Module Features

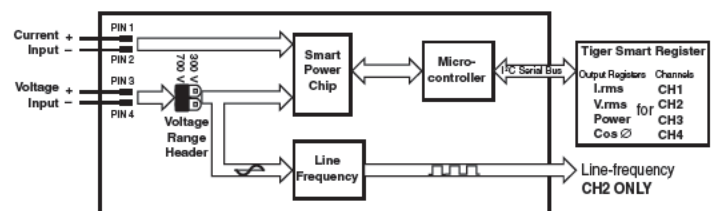
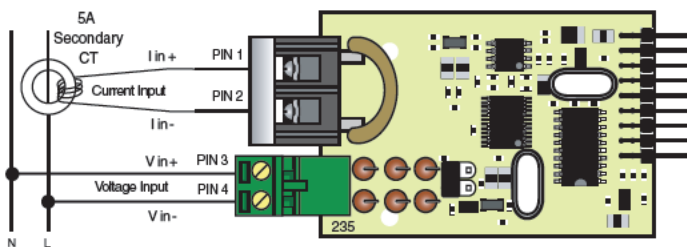
Current Gain	Selectable between 1.0 for typical systems, and 0.2 for systems with large crest factors.
Factory Calibrated	User need only scale results, no AC calibrator required.

Some Relevant Operating System Features

- Setpoint timer functions.
- Setpoint register reset and trigger functions.
- Totalizers.
- Analog outputs.
- Direct display of selected outputs.



Connector Pinouts



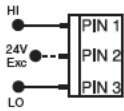
Description

The meter uses three smart setup registers to configure all smart input modules. Input modules IW01 to IW05 require only smart register 1 to be set up. These modules produce four output registers. One of these registers can be transferred to Channel 1 via Code 2, the same or another register to Channel 2 via Code 4, the same or another register to Channel 3 via Code 5, and the same or another register to Channel 4 via Code 6. Input modules IW01 to IW05 have a zero crossing detector that is available for direct line-frequency measurement in Channel 2. The following resolution settings can be selected in Code 4:

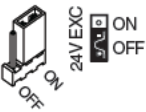
- 0 to 99,999 Hz, 0.001 Hz resolution. Set Code 4 to [30X].
- 0 to 999.99 Hz, 0.01 Hz resolution. Set Code 4 to [31X].

INPUT MODULE COMPONENT GLOSSARY

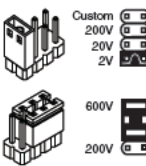
Dual input modules, and those modules exclusively compatible with the Leopard or Tiger Families, do not have zero and span adjustments. These modules are scaled and calibrated using the internal software functions of each individual meter.



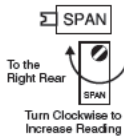
Input and Output Pins
On most modules Pin 1 is the Signal High input and Pin 3 is the Signal Low input. Typically Pin 2 is used for Excitation Voltage output.



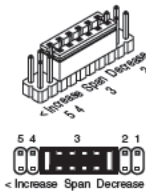
24 V DC Output for 4-20 mA Header
On some modules this header enables a 24 V DC 25 mA (max) Excitation/Auxiliary output to be connected to Pin 2 that can power most 4-20 mA process loop sensors.



INPUT RANGE Headers
Range values are marked on the PCB. Typically two to eight positions are provided, which are selected with either a single or multiple jumper clip. When provided, a custom range position is only functional when the option has been factory installed.

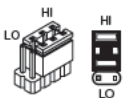
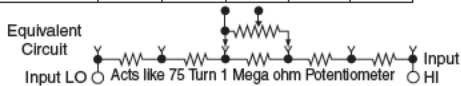


SPAN Potentiometer (Pot)
If provided, the 15 turn SPAN pot is always on the right side (as viewed from the rear of the meter). Typical adjustment is 20% of the input signal range.



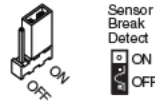
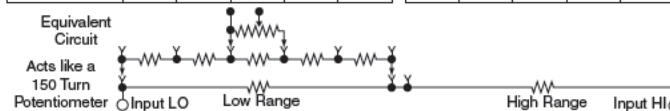
SPAN ADJUST Header
This unique five-position header expands the adjustment range of the SPAN pot into five equal 20% steps, across 100% of the input Signal Span. Any input Signal Span can then be precisely scaled down to provide any required Display span from full scale to the smallest viewable unit.

SPAN Adjust Header position	1	2	3	4	5
SPAN Pot %	20%	20%	20%	20%	20%
Signal Span %	20%	40%	60%	80%	100%



SPAN RANGE Header
When this header is provided it works in conjunction with the SPAN ADJUST Header by splitting its adjustment range into a Hi and a Lo range. This has the effect of dividing the adjustment range of the SPAN pot into ten equal 10% steps across 100% of the input Signal Span.

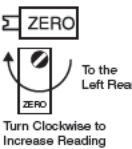
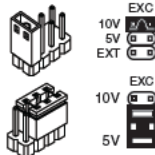
SPAN Adjust Header position	Span Adjust Header					Span Range Header				
	1	2	3	4	5	1	2	3	4	5
SPAN Pot %	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Signal Span %	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%



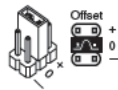
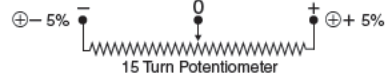
Function Select Headers
On some modules various functions such as Amps and Volts, 4 wire and 6 wire, or cold junction compensation are selected by header positions that are marked on the PCB.



Excitation Output Select Headers
When excitation outputs are provided, they are typically 5 V DC max 30 mA, 10 V DC max 30 mA (300Ω or higher resistance) or external supply. They are selected by either a single or multiple jumper clip.

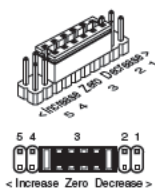


ZERO Potentiometer (Pot)
If provided, the ZERO pot is always to the left of the SPAN pot (as viewed from the rear of the meter). Typically it enables the input signal to be offset ±5% of the full scale display span.



ZERO OFFSET RANGE Header
When provided, this three position header increases the ZERO pot's capability to offset the input signal, by ±25% of the full scale display span. For example a Negative offset enables a 1 to 5 V input to display 0 to full scale. The user can select negative offset, positive offset, or no offset (ZERO pot disabled for two step non-interactive span and offset calibration).

	NEGATIVE OFFSET Decreases Digital Reading	POSITIVE OFFSET Increases Digital Reading
ZERO Pot %	-100% of Offset	+100% of Offset
Offset Range	⊕ - 25%	⊕ + 25%



ZERO ADJUST Header
When this header is provided, it works in conjunction with the ZERO OFFSET RANGE Header, and expands the ZERO pot's offset capability into five equal negative steps or five equal positive steps. This enables virtually any degree of input signal offset required to display any desired engineering unit of measure.

ZERO Adjust Header Position	Zero Adjust Header NEGATIVE OFFSET					Zero Offset Range Header					Zero Adjust Header POSITIVE OFFSET				
	5	4	3	2	1	1	2	3	4	5	1	2	3	4	5
ZERO Pot %	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400	6400
Offset Range	-25200 to -31600	-18900 to -25300	-12600 to -19000	-6300 to -12700	0 to -6400	0 to +6400	+6300 to +12700	+12600 to +19000	+18900 to +25300	+25200 to +31600	0 to +6400	+6300 to +12700	+12600 to +19000	+18900 to +25300	+25200 to +31600

CALIBRATE position, Zero Pot disengaged (no offset applied)

HARNESSING THE POWER OF THE TIGER 320

A combination of modular hardware and software resources enable Tiger 320 Series Programmable Meter Controllers (PMCs) to be easily configured as a cost effective solution for the most simple or the most complex of applications.

A review of your Project's objectives, its physical layout, the proposed sensors and control outputs will enable you to select the optimum configuration of the Tiger 320 PMC's unique hardware and software capabilities.

Input Signals & Sensors

4-20 mA or Sensor Direct

Unless sensors are located at a far distance, the greatest accuracy and best performance is usually obtained by connecting sensors directly to the Tiger 320, which will then function as the primary measurement device.

PLANNING TIP There are more than 120 Tiger compatible input signal conditioning modules, with the appropriate excitation outputs, to suit almost any type of sensor or combinations of up to 4 sensors.

In most cases, sensors with a 4-20 mA output are more costly, and when a separate 4-20 mA transmitter is used, signal conversion, drift, and calibration inaccuracies are introduced.

PLANNING TIP Some Tiger input modules combine direct sensor inputs with 4-20 mA inputs, enabling both local and far distant sensor inputs to be combined.

Sensor Linearization or Compensation

The performance of many sensors can be greatly enhanced or expanded with linearization and or compensation. Sensors may be compensated for temperature, frequency, altitude, humidity and mechanical position, to name just a few parameters.

PLANNING TIP Tiger PMCs with 32 kilobits or more of memory provide up to four 32-point user defined linearization tables or one combined 125-point table.

PLANNING TIP Many compensation methods can be implemented with the standard cross channel math capabilities of the Tiger's 32-bit operating system. Complex three-dimensional compensation can also be implemented using the powerful macro programming capability.

PLANNING TIP The serial number and calibration date of a sensor can be entered into the meter. The serial number, linearization tables, and compensation factors of a newly calibrated sensor can then be saved for future reloading, either serially through a PC or directly through the web via an Ethernet port.

PLANNING TIP Although there are numerous input modules with combinations of various input signals, some inputs such as watts or pH are provided on input modules dedicated to a single function. Combining these inputs with each other signals two or more Tiger meters can serially communicate, and be configured to share their data and processing resources.

Display Options

Tiger PMCs have a large range of display options, including digital and alphanumeric LCDs, LEDs and Touch Panel HMIs.



LED or LCD Displays

LED displays are a lower cost and popular display option. They operate over the largest temperature range, have better viewing angles and viewing distances, and have the longest operational life. However, red LEDs are difficult to read in direct sunlight without a shade hood and consume more power. Green LEDs and backlit LCD displays can be more easily read in direct sunlight.

PLANNING TIP The Tiger range can be ordered with red or green LEDs. LCD displays are also available, with or without backlighting.

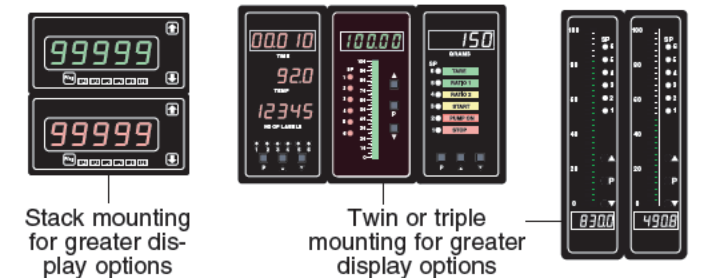
Numeric or Alphanumeric Displays

Generally, numeric displays are a lower cost option than alphanumeric displays. The Tiger range supports a full 7-segment numeric and 14-segment alphanumeric alphabet of English letters and Arabic numerals. Where complex text messaging or alarm annunciation is required, we recommend using the 14-segment alphanumeric option.

Single or Multiple Display

The Tiger meter has four input channels and can be configured to display many different inputs or results. These can be viewed constantly on the operational display, or on demand in one of the view modes by pressing a button. Some applications require multiple values to be displayed simultaneously. With single, dual, or triple displays, and single displays with 51 or 101-segment bargraph combinations, we have a large range of display options to choose from.

PLANNING TIP Tiger meters can communicate with each other to share their data and processing resources and be stack or twin mounted to provide a wider range of display options.



Push Button or Membrane Touch Pads

Tiger PMCs are shipped as standard with high usage hard plastic push buttons. An optional clear lens cover that opens on a cam hinge with a key lock can provide full NEMA 4 or IP65 dust and water proofing. Alternatively, an optional membrane touch pad faceplate can be ordered.

PLANNING TIP Faceplates can be customized to suit any OEM application, and be quickly produced in large or small quantities for push buttons or membrane touch pads.

Control Outputs & I/O Logic

Electromechanical Relays or Solid State Control Outputs

Tiger PMCs have a wide selection of control outputs to choose from. The decision on which control output to choose depends on the current and the switching frequency.

Electromechanical relays are a popular choice for most control outputs. Tiger output modules are available with combinations of two 10 amp form C and two to six 5 amp form A relays that can be used to directly drive fractional HP motors or actuators.

PLANNING TIP The limitation of electromechanical relays is switching speed. If a relay needs to operate in less than 30 mS, or be cycled faster than .5 cpm, it is advisable to select an output module with solid state relays (SSR) or open collector outputs (OC), that can drive external high current SSRs.

HARNESSING THE POWER OF THE TIGER 320

PID or On/Off Control

Depending on the process to be controlled, either PID or on/off control should be selected. If the process variables are reasonably consistent, then the on/off control is generally more than adequate and easier to implement. Super smart setpoint control software supports many selectable functions, such as Hi or Lo activation, Latching, Hysteresis, Tracking, Register Resetting and 7 Multi-function internal Timers on all setpoints.

Control systems with large lag and lead times are not suitable for on/off control and tend to overshoot and undershoot. PID is needed to stabilize and control these systems. One of the many powerful setpoint functions provided by the Tiger 320 Operating System is single or dual PID.

Retransmission 0-10V or 4-20mA

Tiger PMCs can have an optional single (0-10 V or 0/4-20 mA) or dual (0-10 V) analog output module installed. The isolated 16-bit output is fully scalable and highly accurate. With a compliance of up to 500Ω at 20mA, the 4-20 mA output can be used over very long distances and still drive more than one output device, such as a PID controlled valve positioner.

The analog outputs can be reversed to output 20mA to 4/0 or 10 to 0VDC. They can be scaled across any portion of the digital range, up to full scale. The output can be programmed to swing 0 to 20mA or 0 to 10V in one digital count to drive external logic or SSRs as additional setpoints. Under Macro Program Control, the analog outputs can be programmed to produce pulses or even sinewaves.

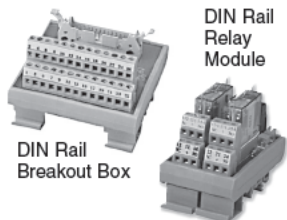
I/O Logic, Rear Panel or Breakout Box

The Tiger Operating System has many built-in logic functions that can be used to develop sophisticated control systems. The Tiger PMC has three logic inputs/outputs available via the LOCK, HOLD, and CAPTURE pins, and three logic I/Os are available for input module use via pins D1, D2 and D3.

More complex I/O intensive applications require an opto-isolated I/O plug-in module, which supports six inputs and up to 16 outputs. This module can connect to an external Breakout Box that is DIN Rail mountable with screw terminal blocks. There are also compatible DIN Rail mounting electromechanical relays and SSR modules.

- 6 Inputs & 16 Outputs or 6 Inputs & 6 Outputs
- Fully Programmable

Connects to DIN Rail terminal block module with 3M IDC cable



Serial Communication

The easiest way to configure or program a Tiger PMC is with the free user-friendly Configuration or Macro Development Software. Serial I/O is provided via an optional Plug-in output carrier board, which supports RS-232 or RS-485 output modules. If serial I/O is not required by the application, the serial carrier board can be removed for reuse. The Tiger 320 Operating System supports several serial protocols, including ASCII, Modbus RTU and Print Mode (which includes a printer driver and support for direct meter to meter communications). Also supported is DeviceNet, which requires a special dedicated carrier board, and Ethernet (TCP/IP), which requires an external converter box.

RS-232 or RS-485

Except for DeviceNet, all serial communication modes supported by the Tiger can function with either RS-232 or RS-485. The limitations of RS-232 are that only one meter at a time can be connected to the serial port of a computer, and the distance from the computer to the meter is limited in practical terms to around 30 meters (100 feet).

Up to 32 meters can be connected on an RS-485 bus. The differential current drive of the RS-485 bus ensures signal integrity in the most harsh environments to distances up to 1230 meters (4000 feet). However, RS-485 generally requires a special RS-485 output card to be installed in the computer or an external RS-232 to RS-485 converter has to be used.

Select the Communication Mode Best Suited to Your Application:

Modbus (RTU)

Modbus is widely used in industry. It has a large base, and most SCADA and HMI software packages support it. See also Modbus Wrapped in Ethernet (Modbus/TCP) below.

There are 100s of HMI Touch Panel Screens that are compatible with the Tiger 320 Modbus interface.



ASCII

The meter configuration utility program and the development software use the ASCII protocol. The ASCII protocol allows you to write your own driver for your own application via the development software and should provide the quickest development time.

Print Mode

This is an ASCII based printer driver output that enables the serial port to be directly connected to any serial printer with Epson compatibility. Printer output can be configured to occur from a setpoint or on demand, and can be date or time stamped.



The print mode can also be used for computer data logging applications. The meter can be connected directly to a computer, set up in Microsoft Hyperterminal mode, with the meter programmed to output directly into a Microsoft Excel spreadsheet format. (Also see Data Logging).

Print Mode for Meter to Meter Communication

Two or more Tiger PMCs can be connected together allowing data to be transferred from the master meter (in print mode) to the slave meter (in ASCII mode). This enables the meters to share input data and control output functions.

Master Mode


This mode is for use with macro programming to expand the meter to meter communication capability to multiples of Tiger PMCs. This is useful for building an entire system of Tiger PMCs, sharing information and control output resources.


Ethernet

Ethernet has become a popular automation and control protocol. We supply an ethernet output option and several external ethernet converters that are compatible with the serial outputs of Tiger PMCs.



 **Ethernet ASCII Wrap** - The ethernet output carrier board option wraps the ASCII output into the Ethernet protocol, and provides a T-base 10/100 Ethernet output socket. This allows the Configuration Utility Program or the Macro Development Software to run over a standard Ethernet network. This enables the Tiger meter to be configured or macro programmed from anywhere in the world via the web.

 Up to 32 Tiger PMCs can be connected by RS-485 to a single Ethernet Converter, which will support up to 32 separate IP addresses.

 **Ethernet Modbus Wrap** - This converter accepts the Tiger PMC's modbus protocol and outputs Modbus/TCP through an Ethernet T-base 10 port. This has become a standard for Ethernet at the factory floor. Many SCADA and HMI software packages connect directly to Modbus/TCP.

HARNESSING THE POWER OF THE TIGER 320

DeviceNet

DeviceNet was originally developed by Allen Bradley to connect sensors from the factory floor to PLCs. It is a deterministic real-time system, typically used to connect to networks using Allen Bradley PLCs. An optional carrier board is required for DeviceNet which replaces the standard serial output with a dedicated DeviceNet output connector.

Data Logging

The Tiger 320 Operating System has built-in, sophisticated data logging software. Data logging can be triggered from the PROGRAM button, digital inputs, time or alarm functions. Up to 1MB of optional extra on-board memory provides a powerful, multichannel data capture and acquisition system.



Tiger PMCs can be configured to log in an endless loop, overwriting the oldest data first and utilizing the maximum amount of memory available. Similar to the Black Box on an aircraft, the data can be downloaded for analysis after a problem event occurs.



Data logging can be combined with an Ethernet converter to provide an individual Web Page with data that can be accessed by a browser over the internet.



Real-time Clock

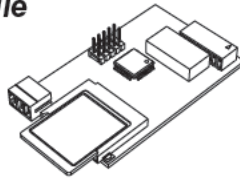
The Tiger meter has an optional real-time clock with a 15 year lithium battery backup, ensuring that time information is not lost in the event of a power failure. It can be configured in 12 or 24-hour modes for printing and data logging applications.

Other applications of the real-time clock include activating a setpoint or control action at fixed times of the hour, day, week, month or year.



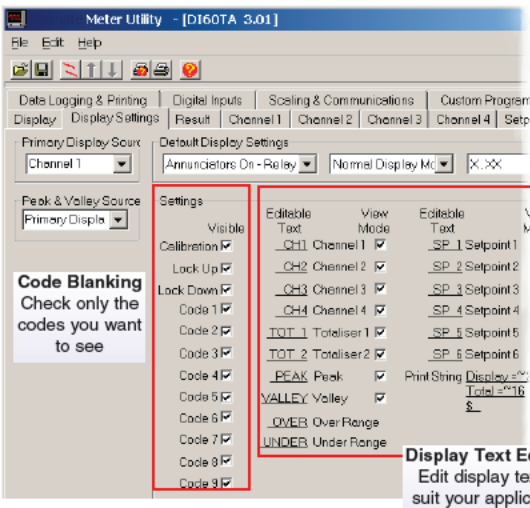
Flash Card Memory Module

For long term data logging, a Flash Card Memory Module that plugs in to the carrier board output socket is available. Flash Cards are available from 4 to 128 meg. They can be removed and read by a standard card reader, or the data can be downloaded through the serial port or over the internet with an Ethernet converter. The module also has an SSR setpoint output to trigger an external event.



Configuration and Programming with a PC

With a serial output module installed, Tiger 320 PMCs are most easily configured using the Tiger 320 Configuration Utility, which can be downloaded free from the web and run on any Windows-based PC. The utility also enables the user to access some special capabilities of the Tiger 320 which cannot be programmed manually by the front panel but-



Code Blanking
Check only the codes you want to see

Display Text Editing
Edit display text to suit your application



The Configuration Utility requires that an RS-232 interface board be installed in a Tiger 320 for programming. However, if the final application does not require a serial output, the RS-232 board can be easily removed, after programming is completed, and kept for future use.



When a Tiger 320 is to be used in a custom application, the utility enables all or any of the front panel programming functions to be disabled (code blanking). Customized descriptive text can also be entered to appear with any setpoint action or event.

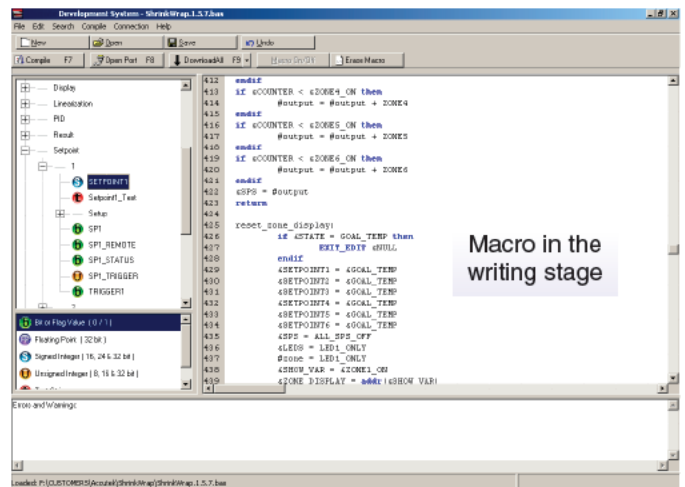


Different configurations can be stored in a PC for fast downloading into a meter by the user. Custom configurations can also be issued a serial number and preloaded at the factory.

Development Software

Custom Macro Programming

This powerful, easy to use development system enables programs to be written in BASIC, utilizing any combination of the hundreds of functions and thousands of registers embedded in the Tiger 320 Operating System. When your Basic program is compiled into the Tiger 320 Macro-language it is error checked and optimized. There are also numerous off-the-shelf application specific programs available. Many only need the blanks to be filled in to use them and do not require any knowledge of BASIC programming.



Macro in the writing stage



Macros are useful when implementing any specialized control system that cannot be achieved by the standard configuration capability of the Tiger 320 Operating System. Using the development software, functions can be altered or added in a standard meter to perform the required job. This may typically include logic sequencing functions and mathematical functions.



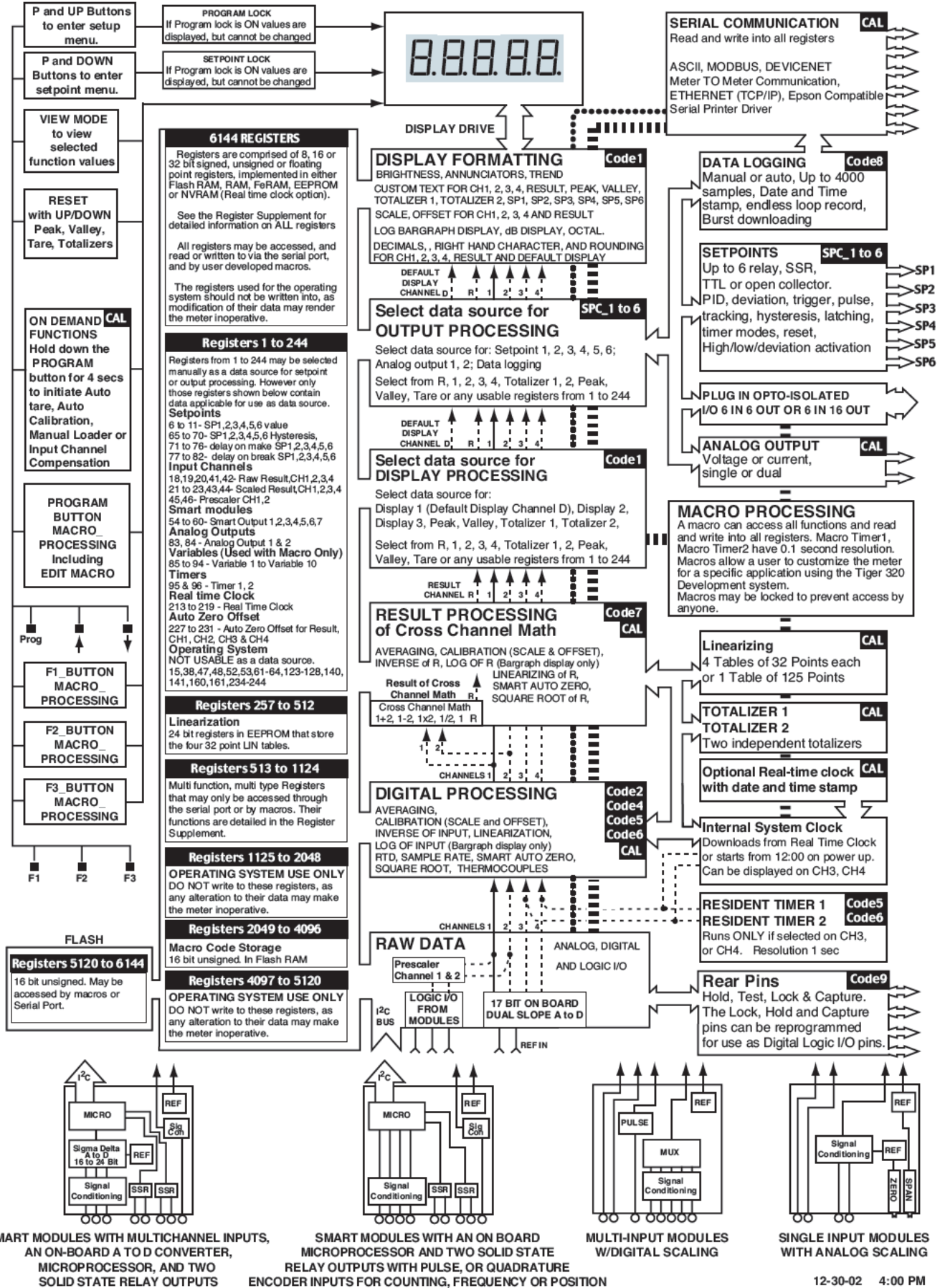
Developing a Macro is much easier and quicker than programming a PLC, because the basic code required to customize the Tiger meter is considerably less than the ladder logic programming required for PLCs. This is due to the hundreds of functions built into the Tiger meter that can be manipulated or invoked by a macro, to fulfill the requirements of almost any application.



Scrolling annunciator messages can be programmed to appear with any setpoint activation, selected events or logic inputs. Easy to read, plain text prompts can be programmed to replace the manual programming codes and provide a user-friendly interface for any custom application.



DIAGRAM OF THE TIGER 320 SOFTWARE & HARDWARE STRUCTURE



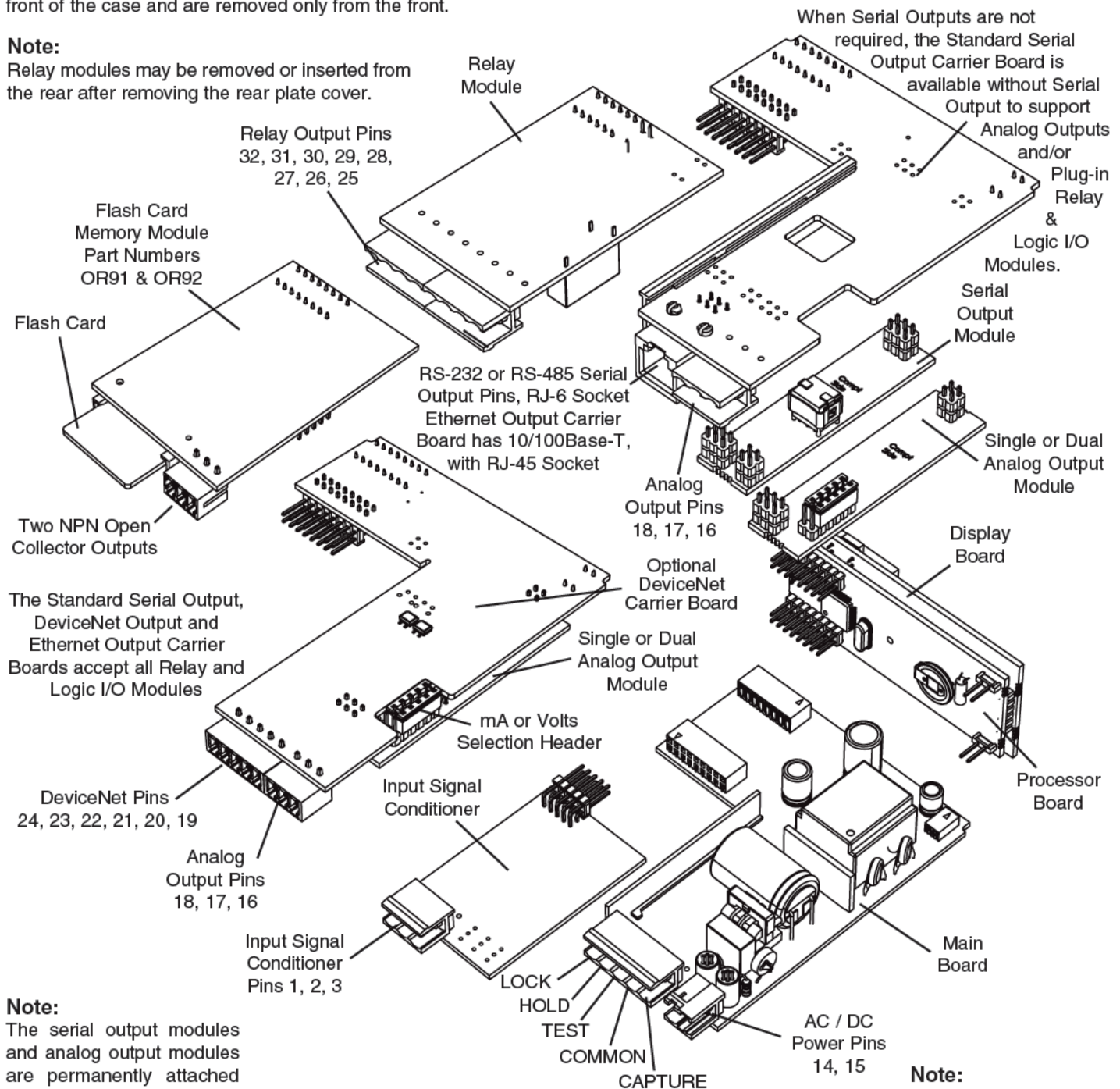
TIGER 320 SERIES MODULAR CONSTRUCTION

DI - Case Format

Note:
The display board and processor board snap into the front of the case and are removed only from the front.

Note:
Relay modules may be removed or inserted from the rear after removing the rear plate cover.

Note:
The output carrier board can be removed or inserted from the rear after removing the rear cover plate. The carrier board must be removed before removing the main board.



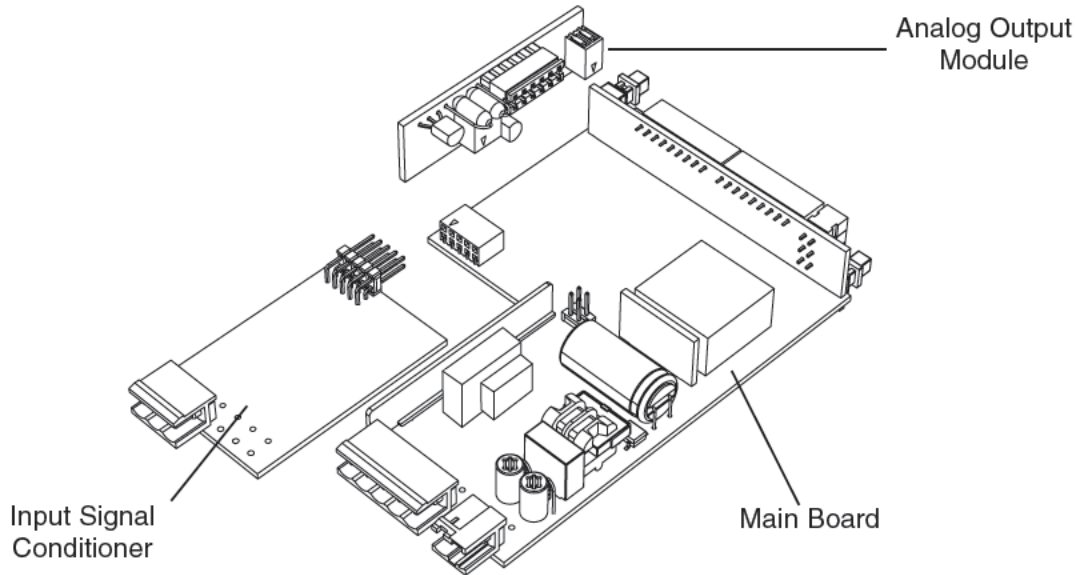
Note:
The serial output modules and analog output modules are permanently attached to the carrier board at the factor and cannot be readily removed or inserted without professional desoldering tools.

Note:
Input signal conditioning modules may be removed or inserted from the rear after removing the rear cover plate.

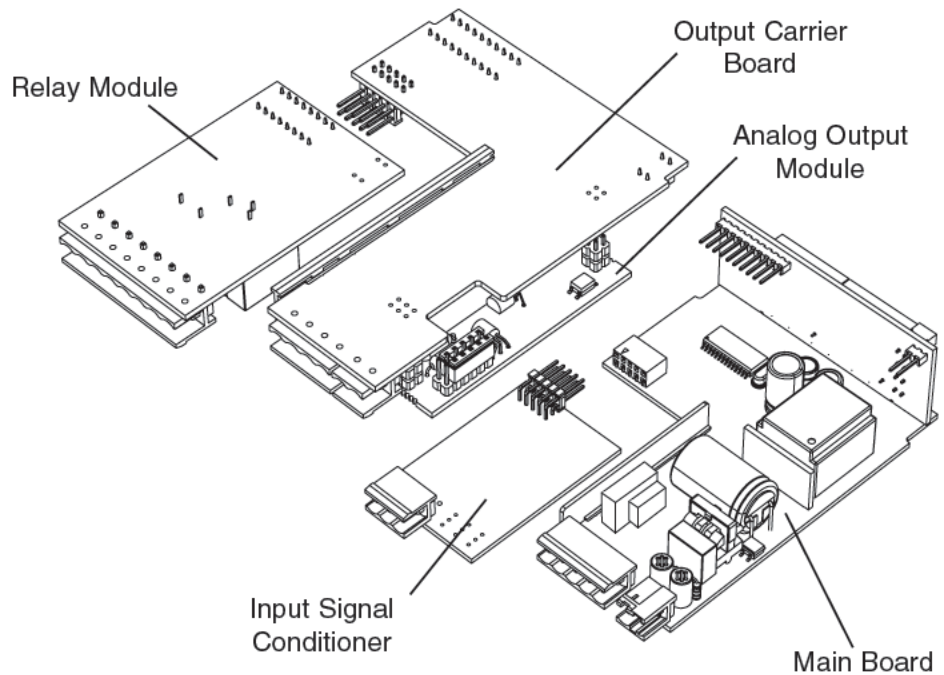
Note:
Before removing the main board. The output carrier board must be removed first.

LEOPARD BL & DL SERIES MODULAR CONSTRUCTION

BL-40 Series



DL-40 Series



Relay Modules that can be used with DL-Series meters:

Relay Modules with 2 Non-Isolated 5A Form A Relays, and 2 Non-Isolated 10A Form C Relays

DL Series				
Order Code	SP2	SP4	SP1	SP3
OR11			10A	
OR12	10A		10A	
OR23	10A	5A	10A	
OR14	10A	5A	10A	5A
OR15		5A	10A	5A
OR16		5A	10A	

Relay Modules with 4 Isolated 5A Form A Relays

DL Series				
Order Code	SP4	SP3	SP2	SP1
OR31				5A
OR32			5A	5A
OR33		5A	5A	5A
OR34	5A	5A	5A	5A

Relay Modules with 4 Independent 400V (210mA DC only) or (140mA AC/DC) SSRs

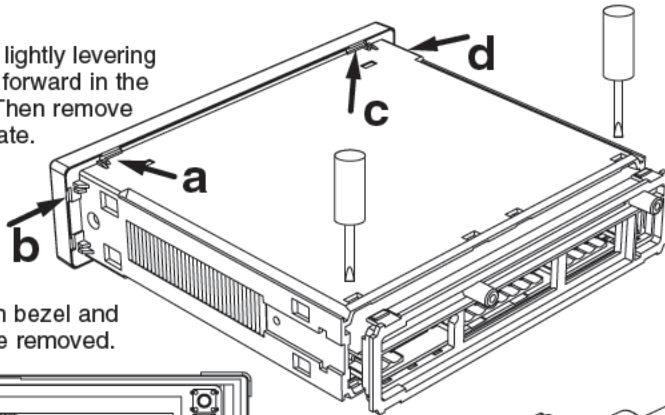
DL Series				
Order Code	SP4	SP3	Options	SP1
OR51, OR61				210mA, 140mA
OR52, OR62			210mA, 140mA	210mA, 140mA
OR53, OR63		210mA, 140mA	210mA, 140mA	210mA, 140mA
OR54, OR64	210mA, 140mA	210mA, 140mA	210mA, 140mA	210mA, 140mA

LEOPARD FL-D & FL-Q SERIES BARGRAPHS

Mode select headers are located on the Display Driver Board assembly. To change any of the modes, it is best to remove the Display Driver Board assembly from the case. Before removing the Display Driver Board assembly from the front of the case, it is necessary to remove the rear cover first. To do this, follow the 5 step directions below:

Step 1

Remove the front bezel by lightly levering the plastic catches up and forward in the a b c d sequence shown. Then remove the cover and scale faceplate.



Front view with bezel and scale faceplate removed.

Step 2

Remove the rear cover plate by pressing down lightly with a small flat bladed screw driver to release two plastic catches, on either side of the case and levering backwards.

Step 3

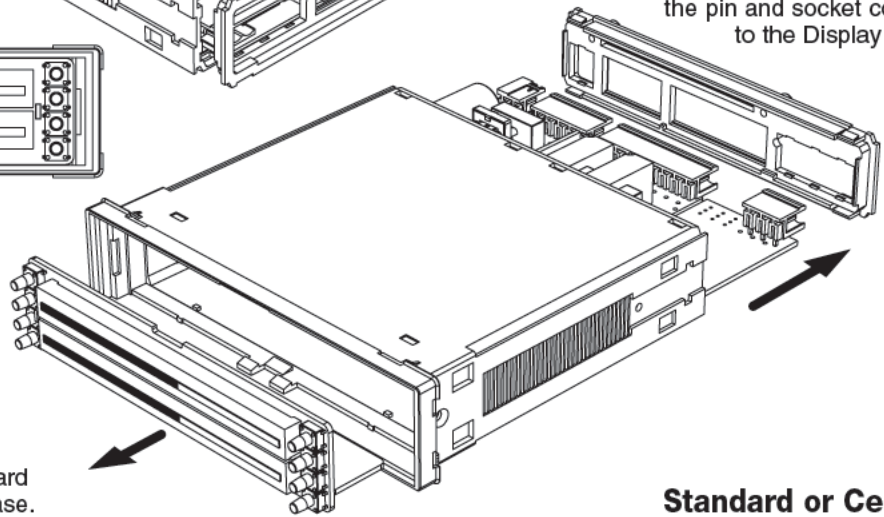
Slide the Main Board back approximately 1" to disengage the pin and socket connection to the Display Driver Board.

Step 4

Starting with the top first, insert a small flat bladed screw driver and carefully lever the plastic catch up and tilt the Display Board assembly forward. Then repeat this action with the bottom catches.

Step 5

Remove the entire Display Board assembly by sliding it out of case.

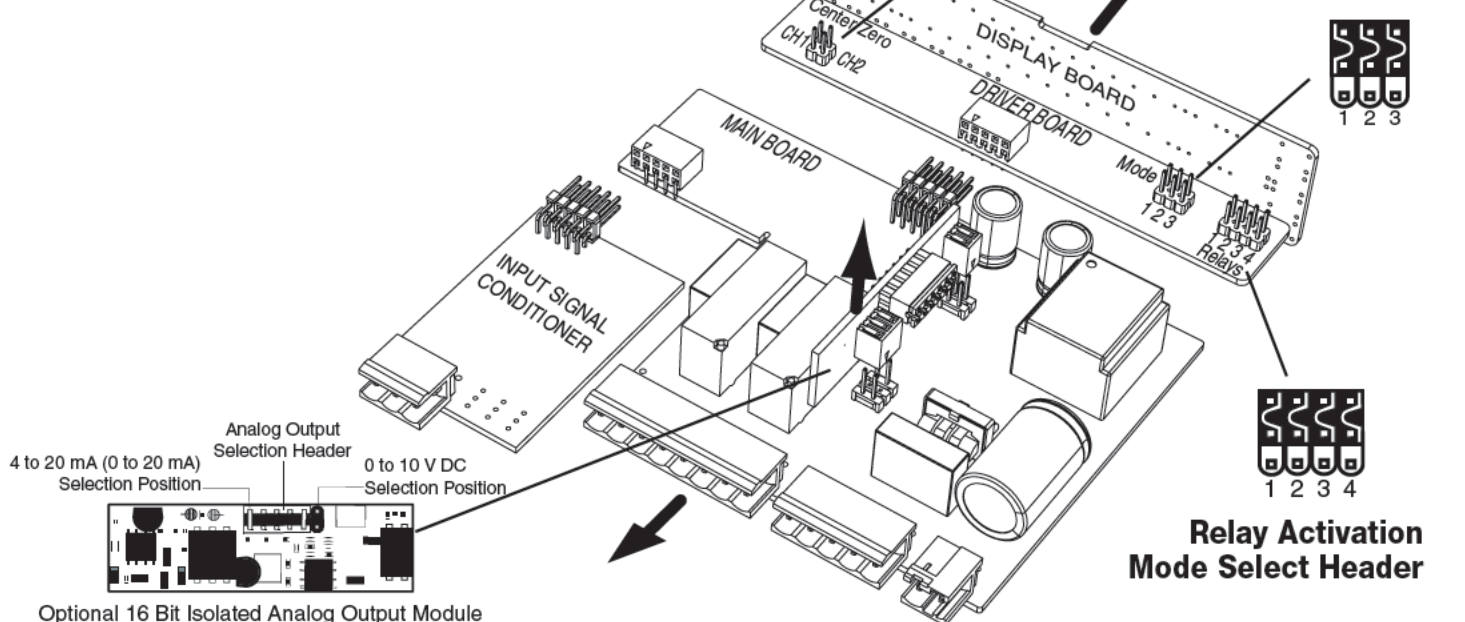


Standard or Center Zero Display Mode Select Header



Accessing the Q-Series Mode Select Headers:

Operating Mode Select Header



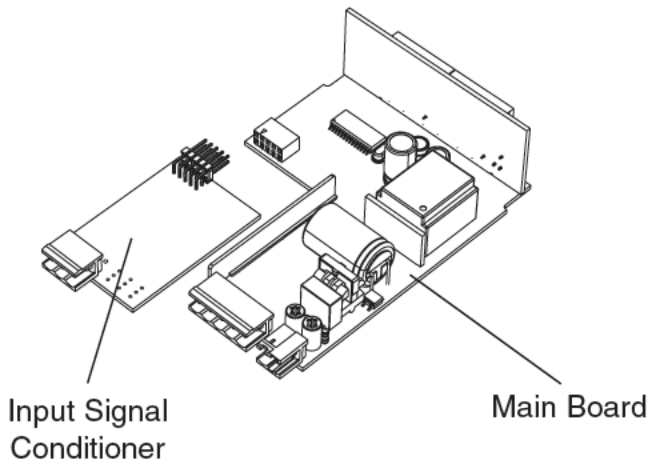
Relay Activation Mode Select Header



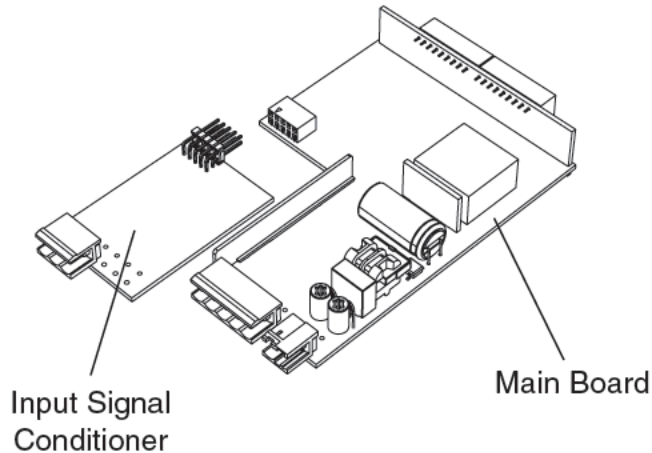
Optional 16 Bit Isolated Analog Output Module

LYNX FAMILY MODULAR CONSTRUCTION

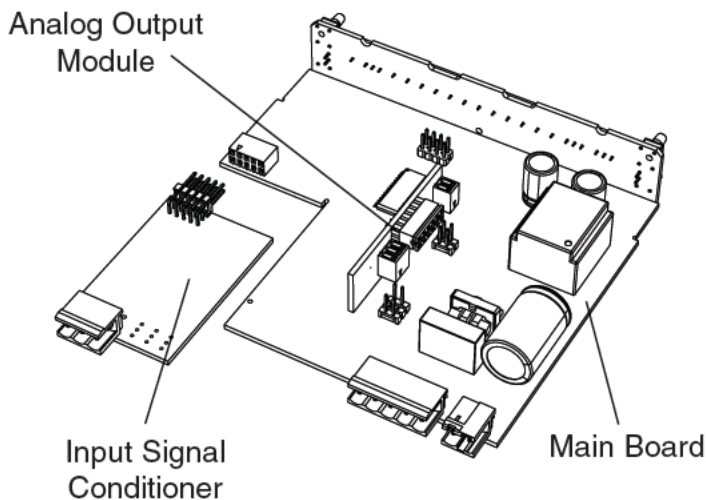
DX Series



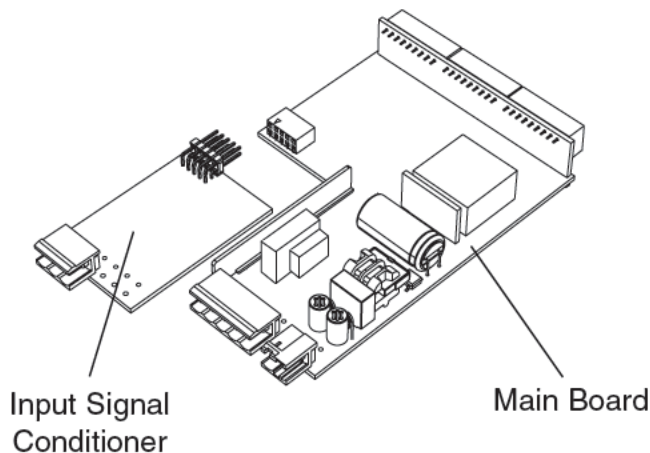
BX Series



FX-B101Q



BX-B31



CALIBRATION OF MODULES THAT HAVE SPAN OR ZERO POTENTIOMETERS

Tiger, Leopard and Q-Series Lynx meters have software calibration and scaling functions that can expand or be used in conjunction with the analog capabilities of any compatible modules.

Note: I-Series modules with analog calibration and scaling capability can be interchanged between any compatible meter without recalibration. However, meters that also have software scaling and calibration capabilities such as meters in the Leopard and Tiger families or Lynx Q-Series (Quickset programming), must have their software scaling set to unity gain.

Basic standard range calibration of direct reading modules that utilize either Auto Zero or a ZERO pot, an INPUT RANGE Header and/or a SPAN pot.

1. If the module has an INPUT RANGE Header, reposition the jumper clip to select the desired input signal range.
2. Apply a zero input or short the input pins. The display will auto zero, or if the module has a ZERO pot, it should be adjusted until the display reads zero.
3. Apply a known input signal that is at least 20% of the full scale input range and adjust the SPAN pot until the display reads the exact input value. For negative inputs, Leopard Family Meters will display negative overrange at 50% of full scale range.
4. Decimal Points. The selection or positioning of decimal points has no effect on the calibration of the modules.

Wide range scaling, in engineering units not requiring offsets, with modules that utilize auto-zero or a ZERO pot, a SPAN RANGE Header and/or a SPAN ADJUST Header.

Texmate's unique SPAN ADJUST and SPAN RANGE Headers provide the circuit equivalent of an ultra-precision one megohm 75 or 150 turn potentiometer that can infinitely scale down any Input Signal SPAN to provide any Display Span from full scale to the smallest viewable unit.

If the module has an INPUT RANGE Header, and the required full scale Display Span (digital counts or bargraph segments) is to be larger than the directly measured value of the input Signal Span, then the next lower range on the INPUT RANGE Header should be selected. The resulting over range Signal Span is then scaled down, by selecting the position of the SPAN RANGE Header and/or the SPAN ADJUST Header, which will reduce the input Signal Span to a percentage, that the required Display Span can be reached by calibration with the SPAN pot.

Example A: Using a DX-35 Lynx, 3.5 digit meter.
Input signal 0 to 10 V to read 0 to 1800 gallons.
Signal Span = 10 V, Digital Display Span = 1800 counts

1. Select the 2 V INPUT RANGE Header position. This will provide a digital display of 1800 counts with an input of only 1.8 V which is $(1.8 \div 10) = 18\%$ of the examples 10 V Signal Span.
2. To scale down the Signal Span to 18% select the 20% Signal Span position on the SPAN ADJUST Header (position 1) or if the module has a SPAN RANGE Header, select (LO Range) and 20% Signal Span position on the SPAN ADJUST Header (position 2).
3. Apply a zero input or short the input pins. The display will auto zero, or if the module has a ZERO pot, it should be adjusted until the display reads zero.
4. Apply 10 V and adjust the SPAN pot until the display reads 1800.

OVER 20 OUTPUT MODULES TO CHOOSE FROM

BASIC MODEL # DISPLAY POWER SUPPLY INPUT MODULE ANALOG OUTPUT* SERIAL OUTPUT* RELAY OUTPUT* OPTIONS / ACCESSORIES

DI-60A — XXX — XXX — XXXX — XXX — XXX — OR11 — OA XXX

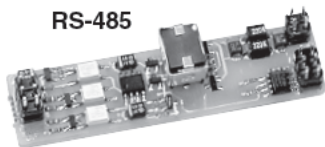
*If a meter is ordered with a Relay Output Module, but without Analog or Serial Output, an Output Module Carrier Board for \$7 should be automatically added to the order. To order an Output Module by itself, enter the Basic Model number and the Output Module order code into the order form, place an X in all other order code boxes. Please see the ordering example above for an OR11 Relay Output Module.

OUTPUT MODULE PRICE LIST

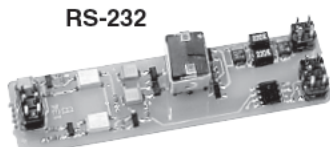
Relay and SSR outputs, analog and serial outputs to suit almost any control or data output require-

Function	Code	Price	Function	Code	Price	Function	Code	Price			
ANALOG OUTPUT FOR DI, GI, FI and DL SERIES			<ul style="list-style-type: none"> • Two 400V DC Solid State Relays (SSR) 210mA OR52 • Three 400V DC Solid State Relays (SSR) 210mA OR53 • Four 400V DC Solid State Relays (SSR) 210mA OR54 			<ul style="list-style-type: none"> • Isolated ModBus Protocol RS232 S5 • Isolated ModBus Protocol RS485 S6 					
<ul style="list-style-type: none"> • Isolated 16 Bit Current Output, 4-20mA AIC • Isolated 16 Bit Voltage Output, 0-10VDC AIV • Isolated 16 Bit Voltage Output, Dual 0-10VDC ADV 			SOLID STATE RELAY (SSR) OUTPUT MODULE AC/DC			<ul style="list-style-type: none"> • Isolated DeviceNet™ Output for DI only, includes a special Output Carrier Board that accepts analog outputs and I/O modules S7 • Ethernet Output for DI only, includes a special Output Carrier Board that accepts analog outputs and I/O modules S7 					
ANALOG OUTPUT FOR BL AND FL SERIES, AND FX-B101Q			<ul style="list-style-type: none"> • One 400V DC Solid State Relay (SSR) 140mA OR61 • Two 400V DC Solid State Relays (SSR) 140mA OR62 • Three 400V DC Solid State Relays (SSR) 140mA OR63 • Four 400V DC Solid State Relays (SSR) 140mA OR64 			CARRIER BOARDS			<p>*One carrier board must be ordered with any meter that includes any one or more of the following options: Analog Output, Serial Output and/or Relay Output Modules. The exception is when the DeviceNet™ option is ordered, as it includes a special Output Carrier Board that accepts analog output options and relay output modules.</p> <ul style="list-style-type: none"> • Output Module Carrier Board, DI Series SA-DI/OM-CB • Output Module Carrier Board, FI Series SA-FI/OM-CB • One 400V AC/DC SSR, Factory Inst. (FI) SA-FI/OIS1 • Two 400V AC/DC SSRs, Factory Inst. (FI) SA-FI/OIS2 • Output Module Carrier Board, GI Series SA-GI/OM-CB 		
<ul style="list-style-type: none"> • Isolated 16 Bit Current Output, 4-20mA OIC • Isolated 16 Bit Voltage Output, 0-10VDC OIV 			OPEN COLLECTOR / TTL / 5VDC OUTPUTS TO DRIVE EXTERNAL SSRs or LOGIC INPUT DEVICES								
RELAY OUTPUTS FOR DI & GI SERIES			<ul style="list-style-type: none"> • Six 5V DC 50mA Outputs OR71 • Six Open Collector Outputs OR72 			OPTO ISOLATE I/O MODULES FOR CONNECTING TO EXTERNAL BREAKOUT BOX (T Version Meters only)					
<ul style="list-style-type: none"> • One 10 Amp Form C Relay, Isolated OR11 • One 10 Amp Form C and Two 5 Amp Form A Relays OR15 • One 10 Amp Form C and One 5 Amp Form A Relays OR16 • Two 10 Amp Form C Relays, Isolated OR12 • Two 10 Amp Form C and Two 5 Amp Form A Relays OR14 • Two 10 Amp Form C and One 5 Amp Form A Relays OR23 • One 5 Amp Form A Relay, Isolated OR31 • Two 5 Amp Form A Relays, Isolated OR32 • Three 5 Amp Form A Relays, Isolated OR33 • Four 5 Amp Form A Relays, Isolated OR34 • Five 5 Amp Form A Relays, Isolated OR45 • Six 5 Amp Form A Relays, Isolated OR46 			<ul style="list-style-type: none"> • Six Outputs & Six Inputs OR81 • Sixteen Outputs & Six Inputs OR82 								
SOLID STATE RELAY (SSR) OUTPUT MODULE DC ONLY			DATA ACQUISITION MODULES WITH REMOVABLE FLASH CARD MEMORY AND TWO SSR OUTPUTS								
<ul style="list-style-type: none"> • One 400V DC Solid State Relay (SSR) 210mA OR51 			<ul style="list-style-type: none"> • Module with 4 Meg Memory OR91 								
			SERIAL OUTPUT								
			<ul style="list-style-type: none"> • Isolated ASCII Code RS-232 S2 • Isolated ASCII Code RS-485 S4 								

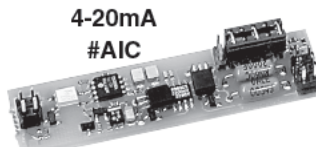
SERIAL AND ANALOG OUTPUT MODULES FOR DI, GI & FI CARRIER BOARDS



RS-485



RS-232



4-20mA #AIC

AIC is also used in DL-Series meters.



0-10V #AIV

Single and Dual

Analog Outputs

- Pin 16 – Positive (+) analog output 1.
- Pin 17 – Negative (-) analog output 1 and 2.
- Pin 18 – Positive (+) analog output 2.

Serial Outputs RS-232 or RS-485

Pin No.	RS-232	RS-485
19	Reserved for future use	Reserved for future use
20	RXD. Received Serial	B (Low)
21	TXD. Transmitted Serial	A (High)
22	+5 VDC to power external converters	+5 VDC to power external converters
23	Isolated Ground	Isolated Ground
24	Reserved for future use	Reserved for future use



RELAY OUTPUT MODULES FOR GI, DI & DL

There are 7 Output Modules providing 26 output options for DI and GI Series meters, and 3 Output Modules providing 18 output options for the DL Series meters.

Relay Modules with up to two 5A Form A Relays, and up to two 10A Form C Relays



Order Code	Options			
	SP2	SP4	SP1	SP3
OR11	-	-	10A	-
OR12	10A	-	10A	-
OR23	10A	5A	10A	-
OR14	10A	5A	10A	5A
OR15	-	5A	10A	5A
OR16	-	5A	10A	-



Relay Modules with up to 4 Independent 400V (210mA DC only) or (140mA AC/DC) SSRs

Order Code	Options			
	SP4	SP3	SP2	SP1
OR51, OR61	-	-	-	210mA, 140mA
OR52, OR62	-	-	210mA, 140mA	210mA, 140mA
OR53, OR63	-	210mA, 140mA	210mA, 140mA	210mA, 140mA
OR54, OR64	210mA, 140mA	210mA, 140mA	210mA, 140mA	210mA, 140mA

Relay Modules with up to four 5A Form A Relays



Order Code	Options			
	SP4	SP3	SP2	SP1
OR31	-	-	-	5A
OR32	-	-	5A	5A
OR33	-	5A	5A	5A
OR34	5A	5A	5A	5A



Open Collector / TTL / 5V Output

Order Code	Options					
	SP6	SP5	SP4	SP3	SP2	SP1
OR71	0 to 5V	0 to 5V	0 to 5V	0 to 5V	0 to 5V	0 to 5V
OR72	0 to V+	0 to V+	0 to V+	0 to V+	0 to V+	0 to V+

Opto Isolated I/O Module for External Breakout Box with 6 Outputs & 6 Inputs, or 16 Outputs & 6 Inputs



Relay Modules with five or six 5A Form A Relays

Order Code	Options					
	SP6	SP5	SP4	SP3	SP2	SP1
OR45	-	5A	5A	5A	5A	5A
OR46	5A	5A	5A	5A	5A	5A



Order Code	Options		
	NPN Open Collector Setpoint	Max 50V @ 100mA MACRO Setpoint	Sink/Source Logic Input
OR81	6 Outputs	-	6 Inputs
OR82	6 Outputs	10 MACRO Outputs	6 Inputs

Flash Card Memory Module



Order Code	Options
	OR91

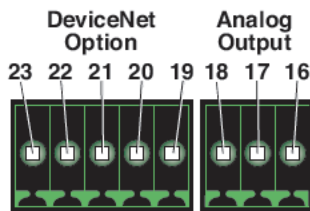
ETHERNET, DEVICENET™ AND OTHER CARRIER BOARD ACCESSORIES FOR DI, GI & FI SERIES

Because of size restraints, Ethernet, DeviceNet and Relay Output Modules do not apply to the FI-Series. See the Texmate Short Form Catalog (Z888) or www.texmate.com for a complete list of all accessories and prices.

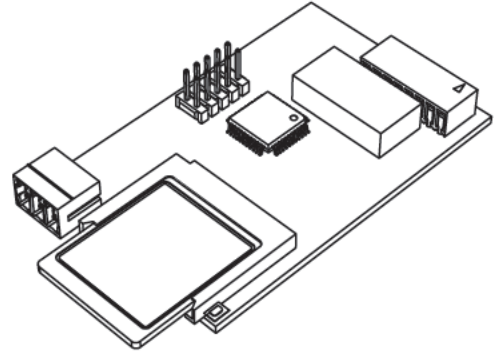
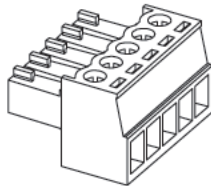
Ethernet – The Ethernet carrier board has the same analog output pins as the standard carrier board, with 10/100Base-T Ethernet (RJ-45 Socket).

DeviceNet – The DeviceNet carrier board has the same analog pinouts as the standard carrier board, but with a 3.5mm Pitch Socket. The serial output pins are replaced with DeviceNet pins, as follows:

- Pin 19 - Positive (+) 24V.
- Pin 20 - Can + (positive).
- Pin 21 - N/C.
- Pin 22 - Can - (negative).
- Pin 23 - Negative (-) 24V.



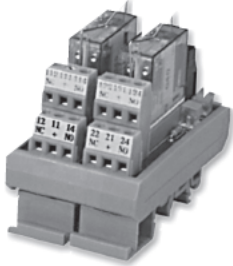
3.5mm Pitch Screw Terminal



Flash Card Memory Module

For long term data logging, a Flash Card Memory Module that plugs in to the carrier board output socket is available. Flash Cards are available from 4 to 128 meg. They can be removed and read by a standard card reader, or the data can be downloaded through the serial port or over the internet with an Ethernet converter. The module also has an SSR setpoint output to trigger an external event.

DIN Rail Relay Module



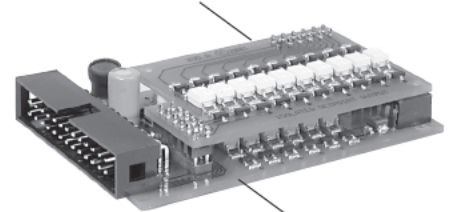
Ethernet Converter RS-232 or RS-485



80-9F/25M-6



10 Digital Outputs Add-on Board



CN-DB/9

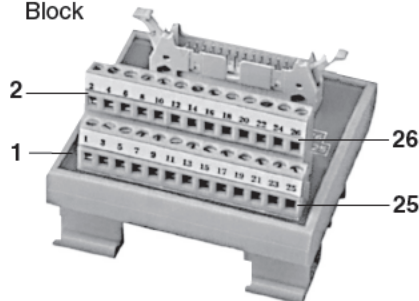


Standard 6 Digital Inputs/6 Digital Outputs

80-MOD/PLG



DIN Rail Terminal Block



3M IDC Cable



OM-CABLE232
OM-CABLE485



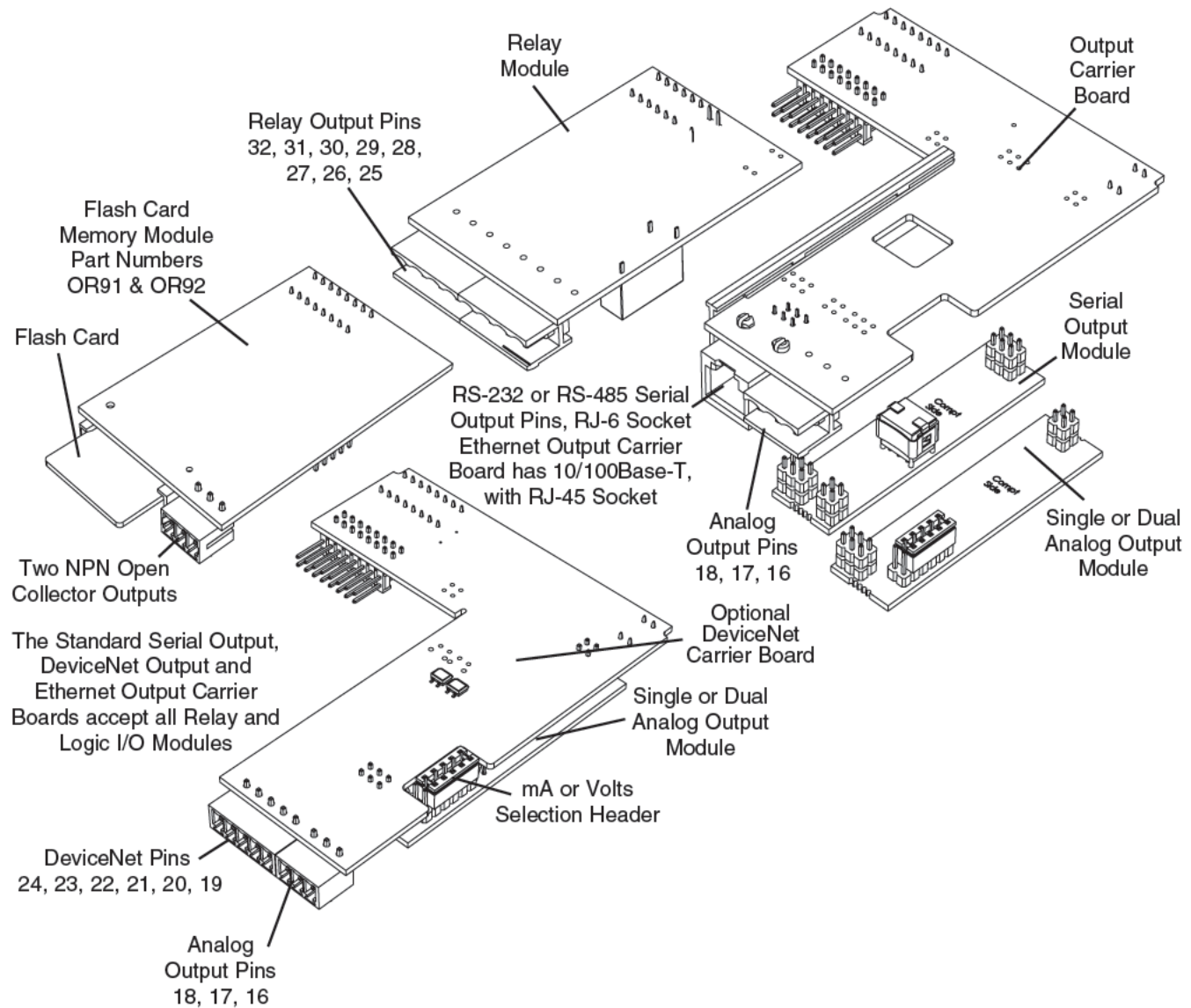
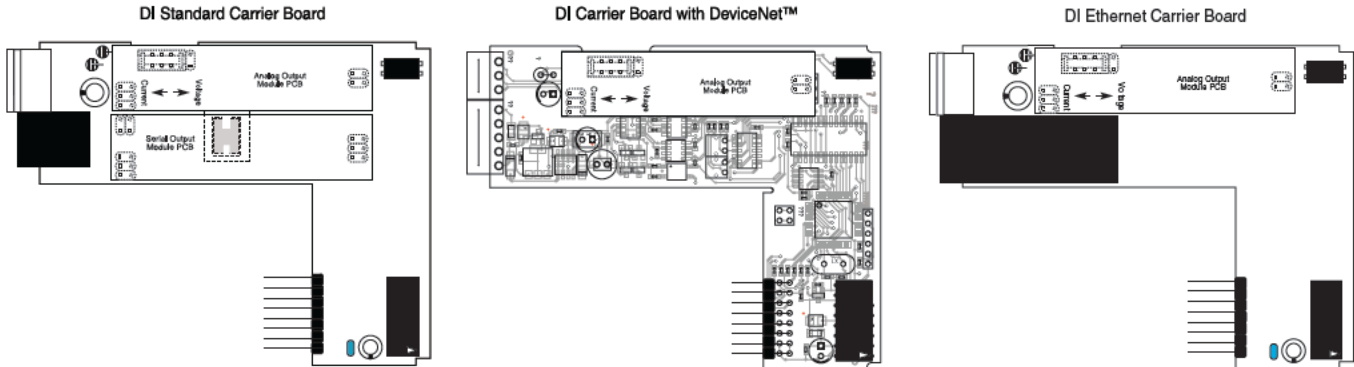
CV-485/232



CN-PUSH/FI.



DI SERIES CARRIER BOARD



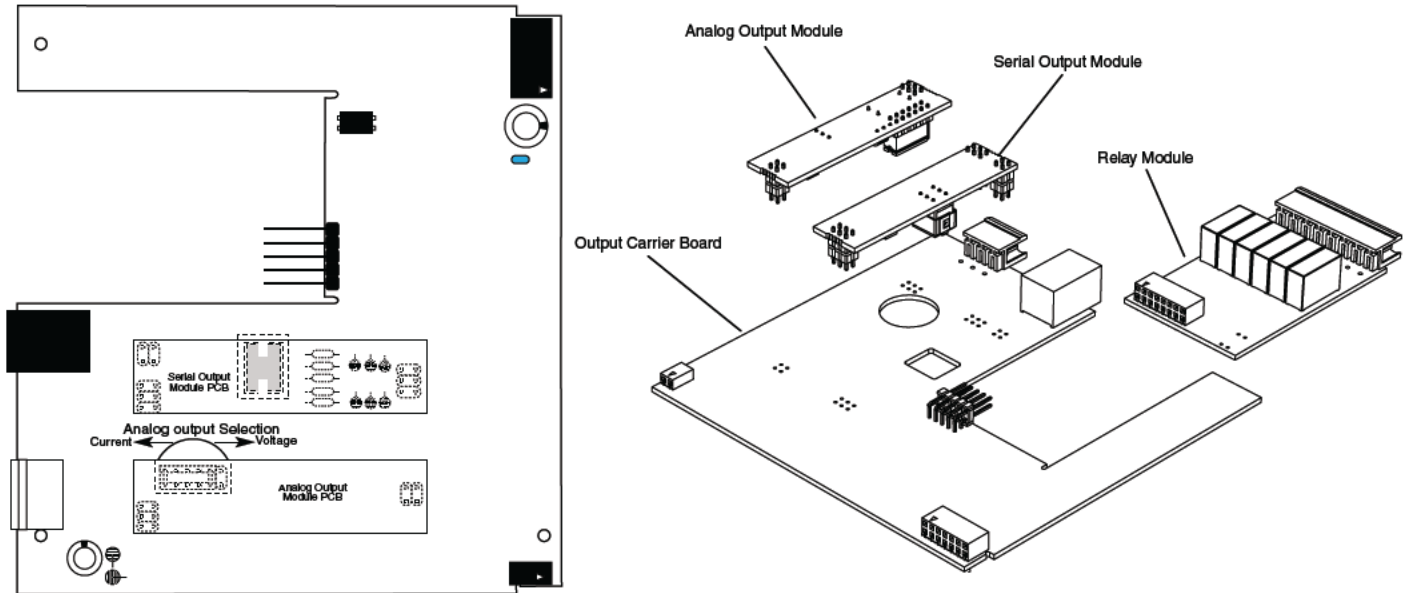
Meters that use the DI carrier board:

DI-50E	.....	96x48mm, 5 Digit, E Version
DI-60E	.....	96x48mm, 6 Digit, E Version
DI-60AE	.....	96x48mm, 6 Digit, Alphanumeric, E Version
DI-60XE	.....	96x48mm, 6 Digit, LCD, E Version
DI-602AE	.....	96x48mm, 6 Digit x 2 Display, E Version
DI-50EAN6	.....	96x48mm, 5 Digit, 6 Annunciators, E Version
DI-503E	.....	96x48mm, 5 Digit X 3 Displays, E Version
DI-50EB51	.....	96x48mm, 5 Digit, 51 Segment Bar, E Version
DI-802XAE	.....	96x48mm, 8 Digit X 2 Display LCD Alphanumeric, E Version

DI-50T	.....	96x48mm, 5 Digit, T Version
DI-60T	.....	96x48mm, 6 Digit, T Version
DI-60AT	.....	96x48mm, 6 Digit, Alphanumeric, T Version
DI-60XT	.....	96x48mm, 6 Digit, LCD, T Version
DI-50TAN6	.....	96x48mm, 5 Digit, 6 Annunciators, T Version
DI-503T	.....	96x48mm, 5 Digit X 3 Displays, T Version
DI-50TB51	.....	96x48mm, 5 Digit, 51 Segment Bar, T Version
DI-802XAT	.....	96x48mm, 8 Digit X 2 Display LCD Alphanumeric, T Version
DI-60AM	.....	96x48mm, Text-Based, 6 Digit, Alphanumeric
DI-60XM	.....	96x48mm, Text-Based, 6 Digit, Numeric LCD

GI SERIES CARRIER BOARD

All Relay Output Modules can be used with the GI-Series (see page 52).
Ethernet and DeviceNet do not apply to the GI-Series.



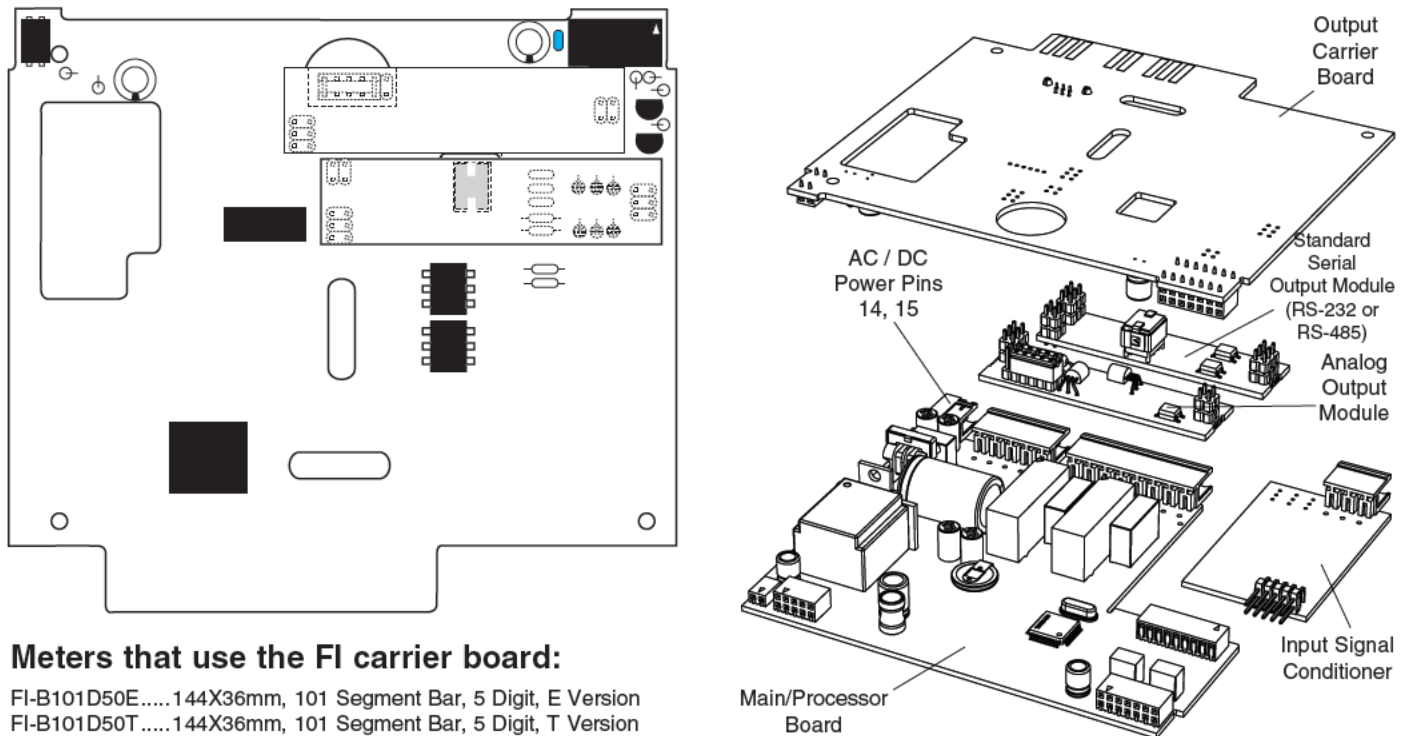
Meters that use the GI carrier board:

- GI-50E 144X72mm, 5 Digit, E Version
- GI-50EB101..... 144X72mm, 5 Digit, 101 Segment Bar, E Version
- GI-50T 144X72mm, 5 Digit, T Version
- GI-50TB101..... 144X72mm, 5 Digit, 101 Segment Bar, T Version



FI SERIES CARRIER BOARD

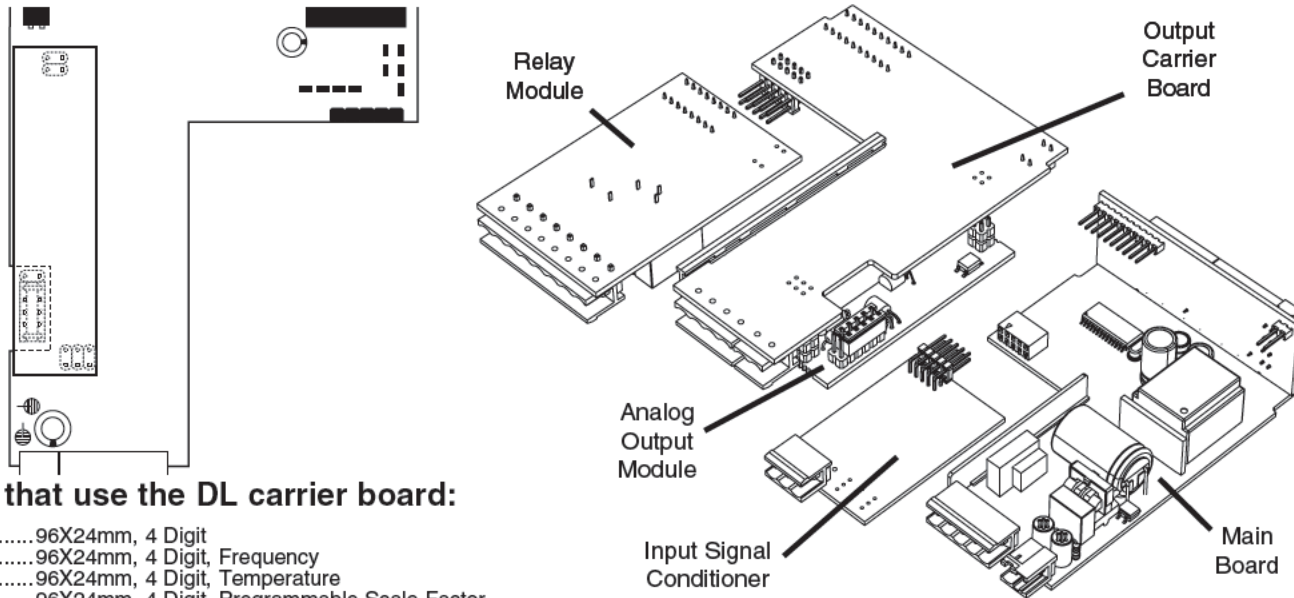
Because of size restraints, Ethernet, DeviceNet and Relay Output Modules do not apply to the FI-Series.



Meters that use the FI carrier board:

- FI-B101D50E..... 144X36mm, 101 Segment Bar, 5 Digit, E Version
- FI-B101D50T..... 144X36mm, 101 Segment Bar, 5 Digit, T Version

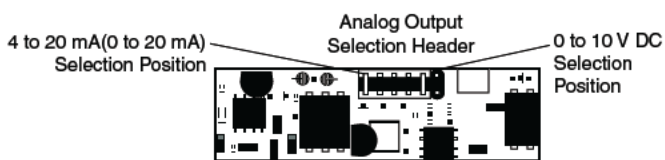
DL SERIES CARRIER BOARD



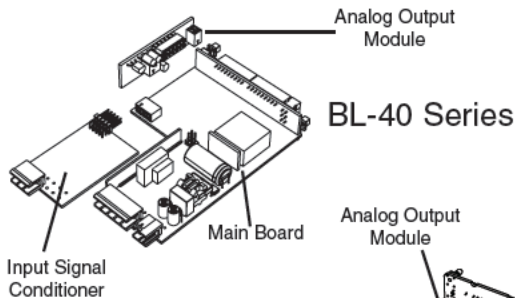
Meters that use the DL carrier board:

- DL-40.....96X24mm, 4 Digit
- DL-40F.....96X24mm, 4 Digit, Frequency
- DL-40H.....96X24mm, 4 Digit, Temperature
- DL-40PSF.....96X24mm, 4 Digit, Programmable Scale Factor
- DL-40RPM.....96X24mm, 4 Digit, RPM

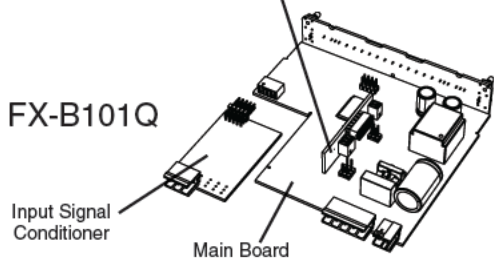
ANALOG OUTPUT MODULE FOR THE LEOPARD FAMILY AND THE LYNX FX-B101Q



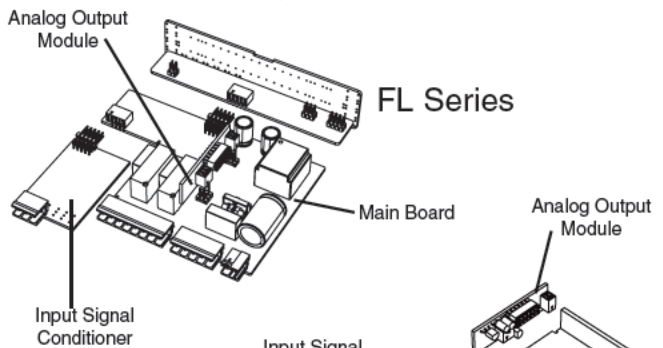
Analog Output Module



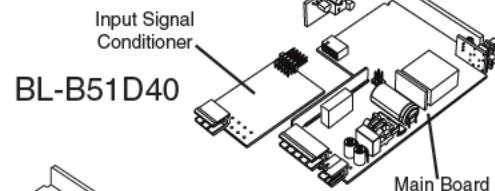
BL-40 Series



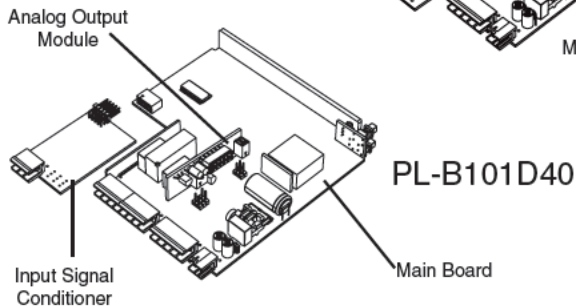
FX-B101Q



FL Series



BL-B51D40



PL-B101D40

Meters that use this module:

- BL-40.....96x24mm, Leopard, 4 Digit
- BL-40F.....96x24mm, Leopard, 4 Digit, Frequency
- BL-40H.....96x24mm, Leopard, 4 Digit, Temperature
- BL-40PSF.....96x24mm, Leopard, 4 Digit, Programmable Scale Factor
- BL-40RPM.....96x24mm, Leopard, 4 Digit, RPM
- BL-B51D40.....96x24mm, Leopard, 51 Segment Bargraph, 4 Digit

- FL-B101D40....144x36mm, Leopard, 101 Segment Bargraph, 4 Digit
- FL-B101Q.....144x36mm, Leopard, 101 Segment Bargraph
- FL-B202Q.....144x36mm, Leopard, Dual 101 Segment Bargraphs
- FX-B101Q.....144x36mm, Lynx, 101 Segment Bargraph
- PL-B101D40...144x24mm, Leopard, 101 Segment Bargraph, 4 Digit