

Wheatstone Bridge In-Line Signal Conditioner



Supply Voltage: 22 to 32 Vdc
Input Current: 200 mA Start Up
 (90 mA max)
Current Outputs: 4-20 mA,
 12 mA zero $\pm$ 8 mA
Voltage Outputs:
 0-5, 0-10, $\pm$ 5, $\pm$ 10 Vdc

IN-UVI, shown smaller
 than actual size, with one
 M12 accessory connector.



M12 connector accessory,
 shown smaller than actual size

IN-UVI Series



- ✓ Wide Range of Field Selectable Inputs and Outputs
- ✓ Input/Output Isolation
- ✓ Low Thermal Drift
- ✓ IP65 Protected
- ✓ Rugged Stainless Steel Enclosure
- ✓ Ideal for Use with Miniature Transducers or When Space is Limited
- ✓ Improved Signal to Noise Ratio
- ✓ Signals Can Be Sent Over Much Longer Distances than Millivolt Signals

Typical Applications that Require an In-Line Signal Conditioner:

- ✓ When a Transducer is Located in a Hostile Environment* or Some Distance From the Display
- ✓ Potentiometer Adjustments (Which are Located in the Signal Conditioner) are More Conveniently Located and More Accessible than the Transducer Itself

* If the environment at the sensing site is subject to high temperatures, humidity, or corrosive conditions, it may be necessary to place the in-line signal conditioner away from the transducer.

Application Examples:

- ✓ Monitor Compression Forces of an Automated Clamping Machine that Modifies 44 Assembly Pieces at a Time by Automated Drills
- ✓ Monitor Forces Needed to Raise the Roof of an Aviation Hanger for Larger Airships to Fit Inside

The OMEGA IN-UVI in-line signal conditioner is housed in a rugged stainless steel enclosure, which is connected between the transducer and a readout instrument. The signal conditioner supplies a highly regulated bridge excitation voltage for the transducer and converts the millivolt signal of the transducer to 0 to 5, 0 to 10, $\pm$ 5, $\pm$ 10 Vdc or 4 to 20, 12 $\pm$ 8 mA.

The IN-UVI features include two selectable excitation voltages, programmable gain amplifier for

signals from 0.5 mV/V to 4 mV/V, wide zero adjustment range and an isolated shunt calibration relay for quick field setup. All output options and excitation voltages are field selectable.

Specifications

Supply Voltage: 22 to 32 Vdc isolated from output

Isolation Input to Output: 500 Vdc

Capacitance: 0.022 μ F

Resistance: 100 M Ω

Input Current: 90 mA maximum (must be capable of supplying 200 mA)

Voltage Output: $\pm$ 5 volts, $\pm$ 10 volts at 2 mA maximum

Output Resistance: 60 Ω

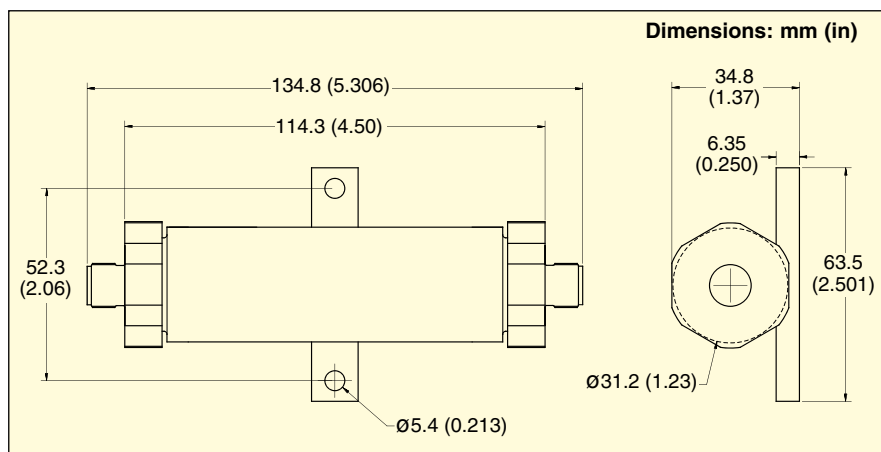
Noise: 10 mV peak to peak @ 3 mV/V voltage mode (10 Vdc) 20 μ A peak to peak current mode

Short Circuit Protection: Yes +output to -output

Current Output: 4 to 20 mA, 12 mA zero $\pm$ 8 mA outputs field programmable

Maximum Load Resistance: 700 Ω at 20 mA

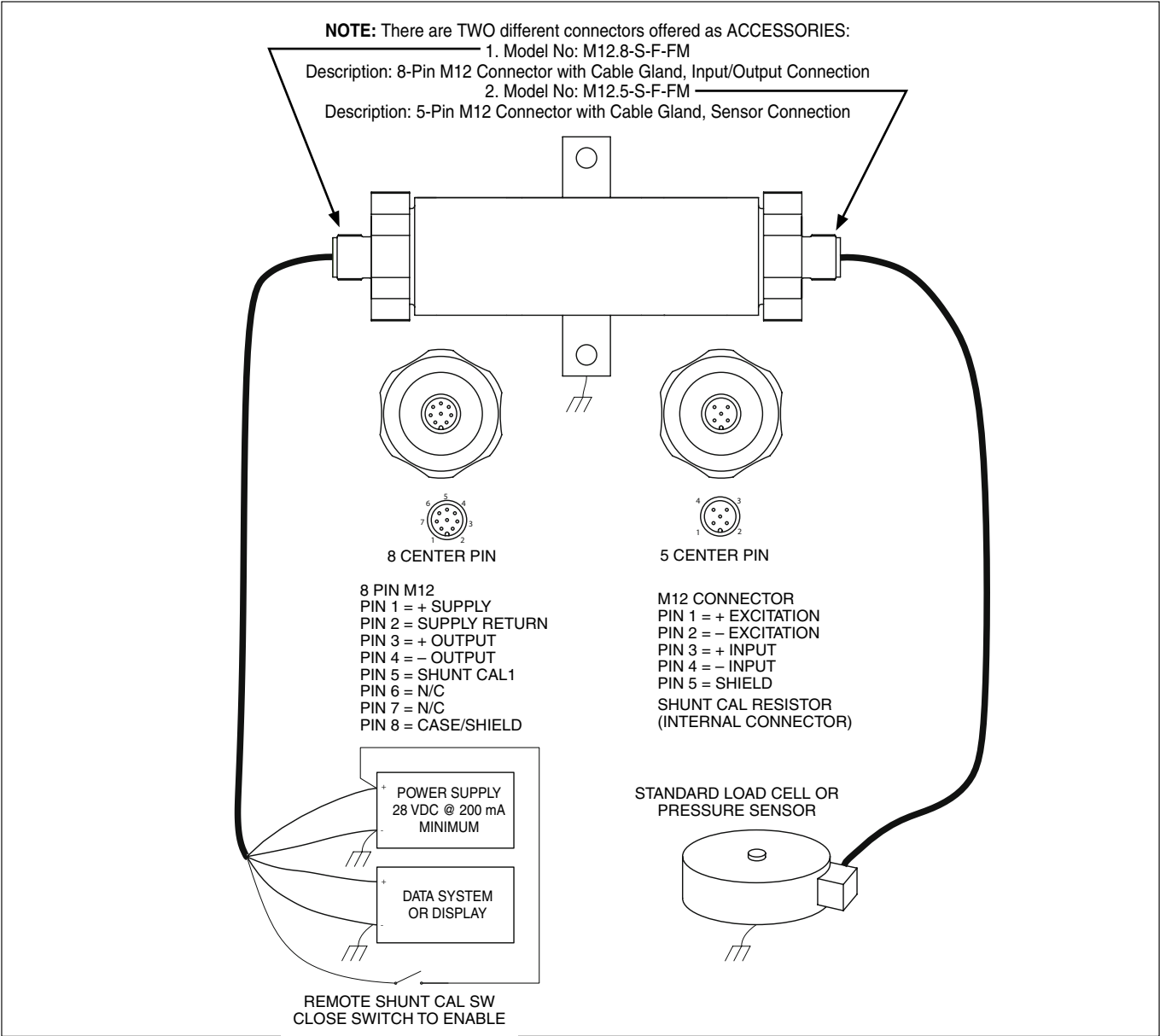
Operating Temperature: -20 to 60°C (0 to 140°F)



Response Time: 200 μ S (0 to 63%)
Excitation Voltage: 5 or 10 Vdc field programmable
Excitation Max Current: 30 mA @ 10 Vdc
Sensor Input Range: 0.5 mV/V to 4 mV/V in 0.5 steps
Shunt Cal: Yes; remotely activated
Environmental Protection: IP65
Long Term Zero Drift: 0.1% of FS/year

Temperature Effects:
Zero: 0.001%/°F (Auto zero front end)
Span: 0.0025%/°F
Linearity: 0.01%
Adjustment Range:
Zero: $\pm$ 30%
Span: $\pm$ 20% fine $\pm$ 40% coarse
Adjustment Location: Behind connector endcaps
EMC Effect: <0.15% of FS per EN61326-1 (industrial)

Dimensions:
134.8 L x 34.8 H x 31.2 mm D (5.3 x 1.37 x 1.23)
Transducer Requirements:
Bridge Excitation: 5 Vdc or 10 Vdc
Bridge Sensitivity: 1 to 8 mV/V @ 5 Vdc EXC, 0.5 to 4 mV/V for 10 Vdc EXC
Bridge Resistance: 350 to 5000 Ω *
** Time constant 0 to 63% (200 μ S for a 350 Ω bridges/1.2 mS for a 5000 Ω bridge)*



To Order	
Model No.	Description
IN-UVI	Wheatstone bridge in-line signal conditioner

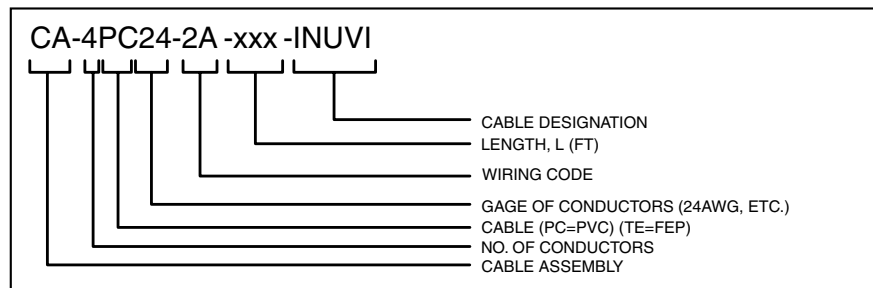
Accessories

Model No.	Description
M12.5-S-F-FM	5-pin M12 connector with cable gland, sensor connection
M12.8-S-F-FM	8-pin M12 connector with cable gland, input/output connection

Standard Cable Part Numbers

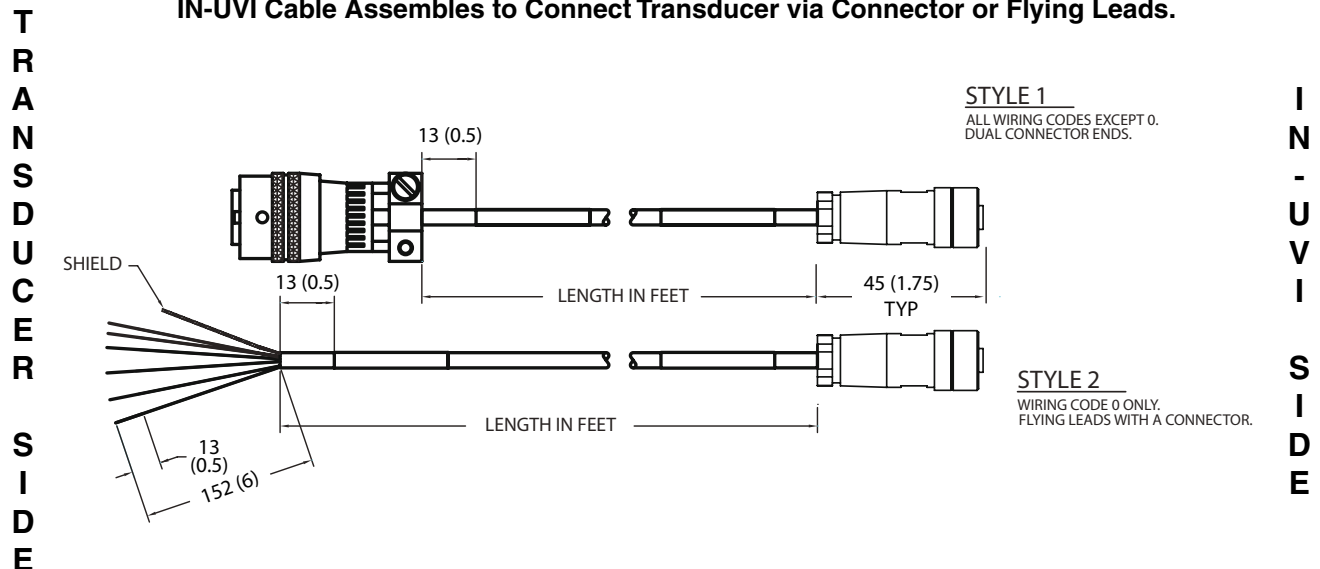
To Order			
Model No.	Connector Sensor Side	Connector IN-UVI Side	Examples of Product Used on (Contact Sales for Products Not Listed)
CA-4PC24-2A-015-INUVI	P001268	M12.5-S-F-FM	LC111 25-200 lbs
CA-4PC24-3-015-INUVI	PT06F10-6S	M12.5-S-F-FM	LC1011, LC1112, LC1113, LC411, LC412, LC711, LC712, LC511, LC315, LC213, LC214, LC111 >200 lbs
CA-4TE24-3-015-INUVI	PT06F10-6S	M12.5-S-F-FM	PX35, PX01, PX02, PX80, PX81
CA-4PC24-4-015-INUVI	PT06F10-6S	M12.5-S-F-FM	LCHD 5 to 5000 lbs, PX610, PX61V1, PX931
CA-4PC24-4A-015-INUVI	MS3106E-14S-6S	M12.5-S-F-FM	LCHD > 5000 lbs (uses MS3102E-14S-6P)
CA-4TE24-5-015-INUVI	PT06F10-6S	M12.5-S-F-FM	PX32
CA-4TE24-6-015-INUVI	PT06F10-6S	M12.5-S-F-FM	(mV) PX5000, PX5500, PX6000 (mV output), PX1004, PX1005
CA-4PC24-8-015-INUVI	PT06F10-6S	M12.5-S-F-FM	PX429, 3 mV/V
CA-4PC24-0-015-INUVI	STYLE 2	M12.5-S-F-FM	Style 2 - Wiring Code 0
CA-4TE24-0-015-INUVI	STYLE 2	M12.5-S-F-FM	Style 2 - Wiring Code 0
Model No.	Flying Leads Input/Output Side	Connector IN-UVI Side	Examples of Product Used on (Contact Sales for Products Not Listed)
CA-6PC24-OUT-015-INUVI	STYLE 2	M12.8-S-F-FM	Style 2 - Wiring Code OUT

Definition of Cable part number



Insulation Type Temperature Rating: FEP = -55 to 125°C (-67 to 257°F), PVC = -30 to 80°C (-22 to 176°F)

IN-UVI Cable Assemblies to Connect Transducer via Connector or Flying Leads.



IN-UVI Wiring Codes

Dual Connector Ends, All Wiring Codes Except 0

Connector Pin Transducer Side	CA*INUVI Wiring Code	IN-UVI Connection	Connector Pin IN-UVI Side
Wiring Code 2A/3			
A	GREEN	+ Signal	3
B	WHITE	- Signal	4
C	BLACK	- Excitation	2
D	RED	+ Excitation	1
E	—	—	—
F	—	—	—
—	—	Shield*	5
Wiring Code 4/4A			
A	RED	+ Excitation	1
B	—	—	—
C	BLACK	- Excitation	2
D	—	—	—
E	WHITE	- Signal	4
F	GREEN	+ Signal	3
—	—	Shield*	5
Wiring Code 5/6			
A	RED	+ Excitation	1
B	GREEN	+ Signal	3
C	WHITE	- Signal	4
D	BLACK	- Excitation	2
E**	—	—	—
F**	—	—	—
—	—	Shield*	5
Wiring Code 8			
A	RED	+ Excitation	1
B	BLACK	- Excitation	2
C	GREEN	+ Signal	3
D	WHITE	- Signal	4
E**	—	—	—
F**	—	—	—
—	—	Shield*	5

** No connection for transducer Pins E & F.

Flying Leads with Connector on IN-UVI End

Connector Pin Transducer Side	CA*INUVI Wiring Code	IN-UVI Connection	Connector Pin IN-UVI Side
Wiring Code 0			
N/A	RED	+ Excitation	1
N/A	BLACK	- Excitation	2
N/A	GREEN	+ Signal	3
N/A	WHITE	- Signal	4
N/A	—	Shield*	5
N/A	—	—	—

NOTE: Excitation of IN-UVI connects to input of transducer, and output of transducer connects to signal of IN-UVI.

Flying Leads with Connector

Connector Pin Transducer Side	CA*INUVI Wiring Code	IN-UVI Connection	Connector Pin IN-UVI Side
Wiring Code OUT (8-Pin)			
N/A	RED	+ Supply	1
N/A	BLACK	- Supply	2
N/A	GREEN	+ Signal	3
N/A	WHITE	- Signal	4
N/A	BLUE	Shunt Cal En	5
N/A	—	—	6
N/A	—	—	7
N/A	BROWN/ SHIELD*	Case	8

* Shield not connected to Connector Sensor Side or Transducer.