

# iAmp Inline Tension Amplifier

The iAmp is a compact amplifier/ interface module that connects directly (via standard industrial connectors) to DFE tension transducers, or “inline” on transducer connector cables. iAmp’s function is to convert millivolt-level transducer output signals to a 0-to-10 Vdc and a 0-to-1mA signal proportional to tension.

Using an iAmp module is a simple alternative to mounting a larger, less flexible electronics device – usually a transducer-interface circuit card or complete indication package – on a press or machine frame for tension monitoring. Because it is easily hidden, the iAmp is an ideal tension amplifier for OEMs and system integrators.

Easy to zero and calibrate, the iAmp is powered by 24 Vdc,

## BENEFITS/FEATURES

- 14-24Vdc power input
- 0-1 mA meter output proportional to tension, isolated
- 0-10Vdc tension signal output, isolated
- Zero and calibration potentiometer adjustments (accessible via top)
- Field-retrofittable to all DFE transducers
- Small package ensures application flexibility
- Inline configuration can be stowed in cable tray or mounted to DIN rail

## OPTIONS

- **Digital Meter (DM).** Built-in LED digital meter.
- **DIN-rail mounting clip (DRC).** For cable-inline versions only.
- **Mounting Bracket (MB).** Angled metal bracket for stable inline mounting of models F1C and F2C only.

## ACCESSORIES

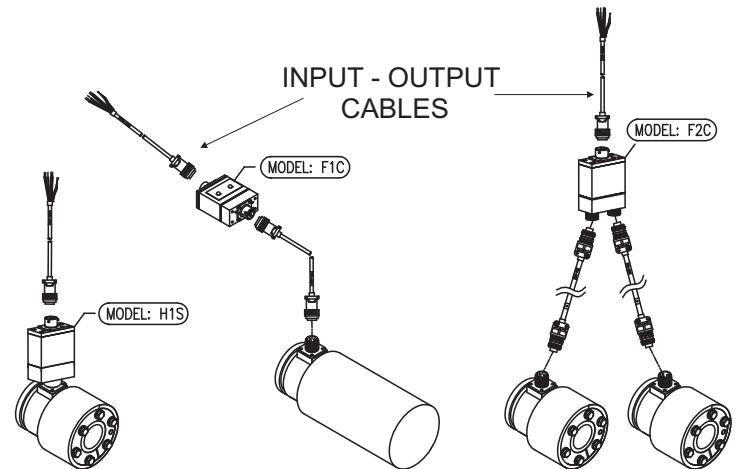
- **Tension Meter.** Analog, 1 mA, 48 ohm movement. Must be installed by user. DFE Part# 722-1385. This meter also available in its own enclosure. DFE Part# 723-1453. Standard scales available are: 0-1, 5, 10, 25, 50, 100, 150, 250, 500, and 1000.
- **Nonstandard Meter Scale.** Any meter scale not shown above.
- **Cables.** Your DFE Applications Engineer will select the proper cables for your iAmp and transducer combination. See example configurations to the right.

supplies a 5V excitation signal to the transducers it connects to, and accepts DFE transducer output from 0-to-500 mVdc. Each user-friendly, lock-fit amplifier module also supplies a 0-to-1 mA signal proportional to tension for analog meter readout, and 0-to-10Vdc for direct use by a motor-drive, PLC or other control device.

iAmp is available in a **direct-connect** version to mount directly onto DFE transducer connectors. It is also available as an **‘inline’** amplifier to be plugged onto transducer connector cables. iAmp connectors mate to DFE’s standard cable-end connectors for the corresponding transducer types.

## SPECIFICATIONS:

- **Input Power:** 14-24Vdc @ 100mA (std), 250mA (DM)
- **Temperature Range:** 32°F to 104°F (0°C to 40°C)
- **Materials:** Steel, Black anodized Aluminum
- **Weight:** 0.5 lbs. (0.23 kg)
- **Amphenol Connectors:**  
3-Pin = Model C and UPB  
6-Pin = Models NWI and TR2  
Bendix = Models RFA, VNW, TR1 and LT
- **Outputs:** +10V tension signal output (isolated), 0-1mA tension meter output



## ORDERING INFORMATION

You may order from the list of five configurations below. Please refer to Configuration Selection on the following page to choose the right iAmp for your transducer.

T120	-	F	1	C	-	OPTION
T120	-	F	2	C	-	OPTION
T120	-	F	1	L		
T120	-	F	1	S		
T120	-	H	1	S		

ELECTRONIC BRIDGE TYPE	INPUT CONNECTORS	INPUT CONNECTION TYPE	OPTIONS
H = Half Bridge F = Full Bridge	1 2	C = Cable L = Large Connector, plug-on to transducer S = Small Connector, plug-on to transducer	DM = Digital Meter DRC = Din Rail Clip <sup>1</sup> MB = Mounting Bracket <sup>2</sup>

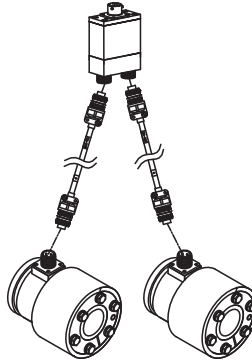
Notes: 1. Available only on cable-inline versions. 2. Available only on F1C or F2C.

## CONFIGURATION SELECTION:

As shown in the Ordering Information section, there are five possible final configurations of the iAmp module based on electronic bridge type, number of input connectors and input connection type. Three of the iAmps connect directly to transducers, and two connect inline on transducer cables. All electrical connections are via circular connectors.

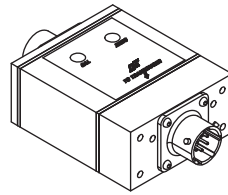
The type of transducer being used determines which iAmp configurations will work. For a single full-bridge (ie. cantilevered-style, or Tension Roll<sup>®</sup>) transducer, whether

- Use F2C on cables connected to two shaft-end transducers (i.e. Model C, Roll Shell, or UPB transducers).



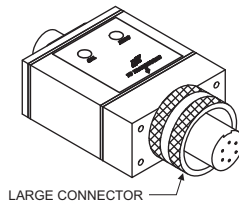
F2C (shown in photo with DM option) and F1C cable-inline iAmps

- Use F1C on a cable connected to one cantilevered-mount transducer (i.e. Narrow Web, VNW, RFA or TR transducers).



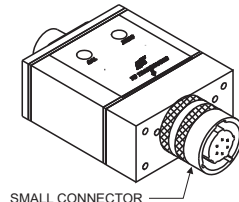
F1C shown connected inline on cables. One cable for transducer input, and one for output to PLC, drive or other control device.

- Use F1L (Large transducer connector) to connect directly to NWI or TR2 type transducers.



LARGE CONNECTOR

- Use F1S (Small transducer connector) to connect directly to RFA, VNW or TR1 type transducers.

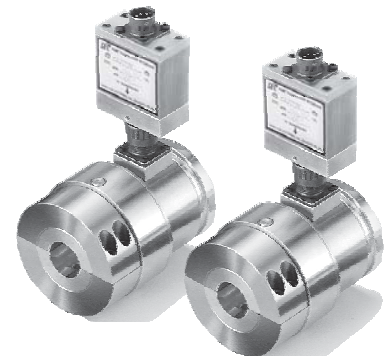
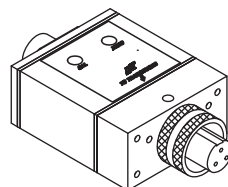


SMALL CONNECTOR



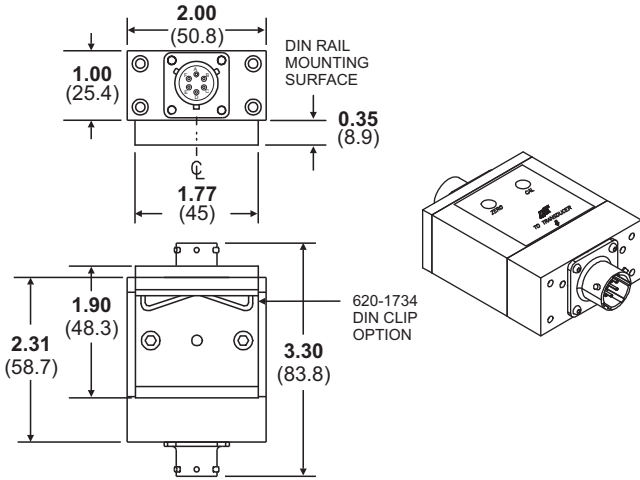
F1L direct-mount iAmp on NWI tension transducer

- Use H1S to connect directly to Model C or Roll Shell type transducers.

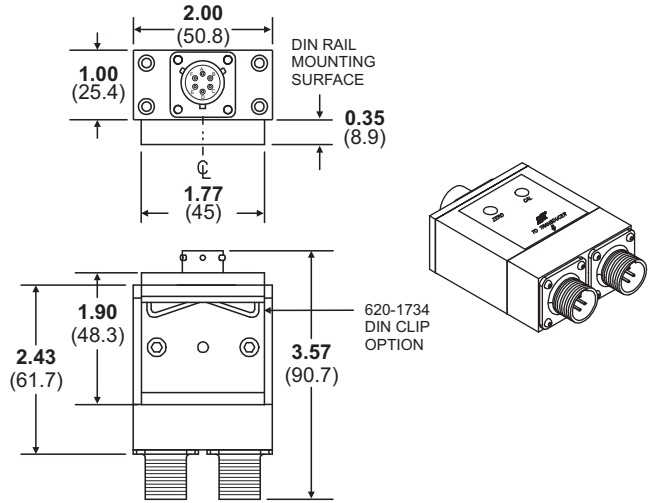


H1S direct-mount iAmps on Model C tension transducers

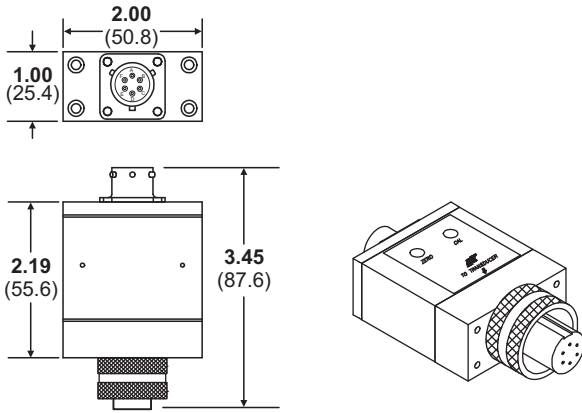
# DIMENSIONS Inches (mm)



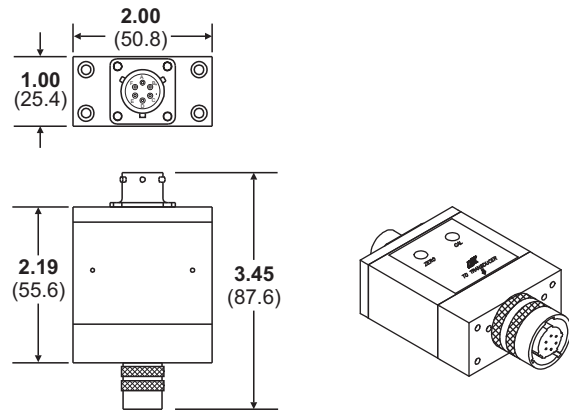
MODEL F1C



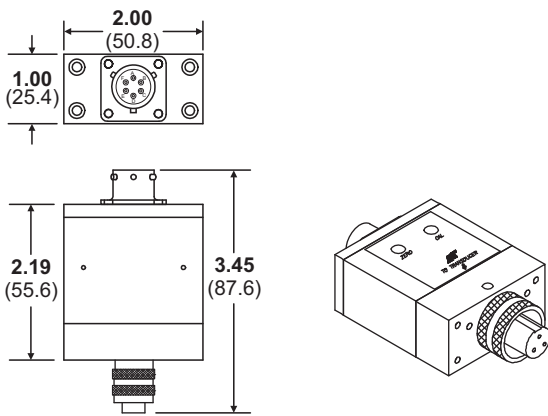
MODEL F2C



MODEL F1L



MODEL F1S



MODEL H1S

## OPTIONS

**DIGITAL METER (DM) OPTION**  
THIS OPTION CAN BE USED WITH ANY IAMP CONFIGURATION

**MOUNTING BRACKET (MB) OPTION**  
F1C & F2C ONLY (PN# 620-1975)