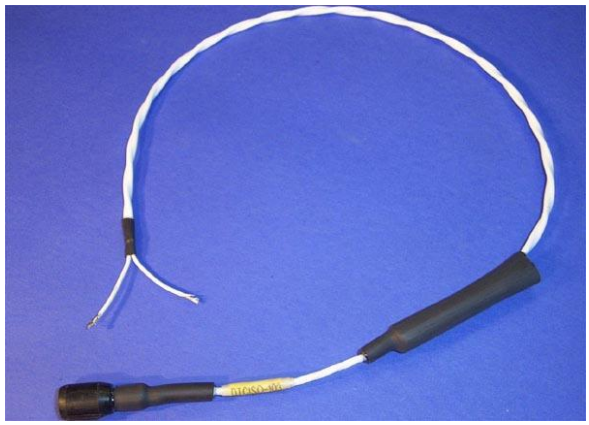
Technical Data Sheet

4-20mA sensor conditioner – MOD420

Features

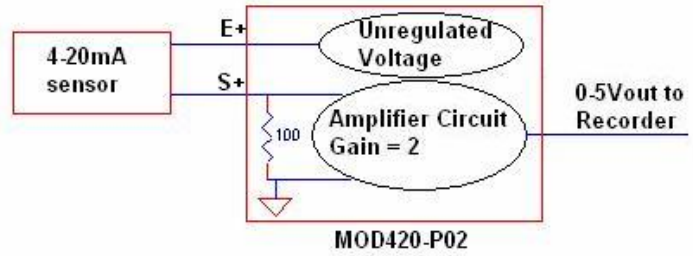
- Signal conditioner for 4-20mA sensors.
- Good temperature stability.
- Rugged epoxy-filled enclosure, small size.
- Watertight mini sure-seal® connector.



Description

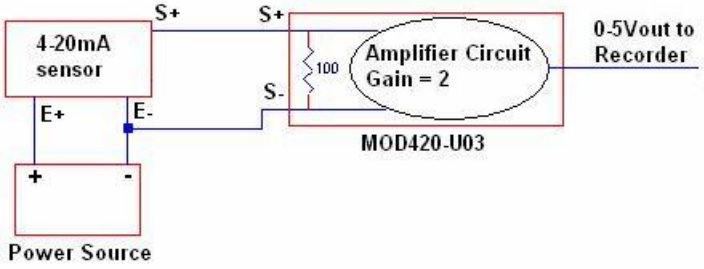
MOD420-P02

The MOD420-P02 conditions and powers 2-wires 4-20mA sensors. The MOD420-P02 E+ (excitation+, Orange/White wire) provides up to 30mA to the 4-20mA sensor. The S+ (signal+, White wire) attaches to the 4-20 mA sensor signal output. A 100 ohm resistor connects S+ to ground inside the MOD420-P02.



MOD420-U03

The MOD420-U03 conditions 4-20mA sensors that require excitation of 30mA or more. The MOD420-U03 S+ (signal+, White wire) and S- (signal-, White/Blue wire) attach in line with the signal wires of the 4-20 mA sensor.



A 100 ohm resistor connects S+ to S- inside the MOD420-U03. The MOD420-U03 will not ground the Recorder through the S+ and the S- inputs. The 4-20mA sensor and the Recorder must be connected at the same ground. This ground point must be unique and ideally close to the power source.

Installation

- **MOD420-P02:**
  Connect the E+ (White/Orange wire) to the Supply+ and the S+ (White wire) to the Signal Output of the 4-20mA sensor.
  MOD420-U03:
  Connect the power wires of the 4-20mA sensor to a power source. Connect the S+ (White wire) to the signal output, and the S- (White/Blue wire) to the power ground of the 4-20mA sensor. Connect the power ground of the Recorder and the power ground of the 4-20mA sensor together.
- Connect the module to an analog input of the system: A, B or C. Carefully align indexing rib when mating mini sure-seal® connectors.
- Do not expose the module to temperatures outside -40°C to 85°C.
- Route the sensor cable away from sources of interference, such as ignition coils, plug leads, electronic modules or antennas.
- Verify that the cable is not pinched or stretched by moving parts.
- Do not bend cable with curvature radius smaller than 1.60″ [40 mm].

Calibration

For best performance, it is recommended to calibrate the sensor and the module together using the Online calibration wizard. For more information, refer to *ISAAC User's Manual*.

Specifications

	Symbol	Min	Typ	Max	Units
Supply Voltage Supply Current (Signal+=0V and Signal-=0V)	V_{in} I_{in}	10	 8	35	V mA
Signal output voltage swing Signal Gain	V_{Out} $V_{Out}/(I_{Signal+}*R)$	0	 2.004	5.00	V V/V
Excitation Output (MOD420-P02 only) Excitation voltage Excitation current	 $V_{Excitation}$ $I_{Excitation}$		 V_{in} -0.3	 30	 V mA
Input characteristic S+ input current R between S+ and GND	 $I_{Signal+}$ R	 0	 100	 25	 mA ohm
Operating temperature	T_{oper}	-40		85	°C
Weight	W		50 1.76		Grams oz