

MSP FAMILY



THE NEXT REVOLUTION

Single Channel PLC ANALOG I/O

The SensorPulse MSP *family* of products have begun a revolution on how analog signals connect to a Programmable Logic Controller (PLC). Analog input signals are digitally scaled, amplified, linearized (temperature), isolated, and converted to a high resolution 24Vdc pulse, all within a 12mm wide DIN rail terminal block. Our patented 16-bit weighted word, proportional to the analog signal, communicates with any one of the discrete inputs (or outputs) of a PLC.

THE RIGHT SIGNAL PROCESSING MODULE FOR THE JOB

SensorPulse offers six analog input signal types (to discrete input of a PLC): Current, Voltage, Thermocouple, RTD, Frequency, and Potentiometer. SensorPulse also offers two analog output signal types (from a discrete output of a PLC): Current and Voltage. All models are engineered to meet high quality and performance standards with advanced features including: 16-bit resolution; two- or three-way optical and transformer isolation (to eliminate the concern of ground loops, common mode signals and noise); short circuit and reverse power protection; and a broad operating temperature range of -40°C to 75°C.

A NEW BREED OF PLC ANALOG I/O MODULE

The MSP Analog I/O allows PLC users the freedom to distribute the I/O where the signal is being generated.....the freedom to eliminate the cost of a separate signal conditioner and other hardware.....the freedom to expand I/O one channel at a time.....the freedom to connect to any ladder logic-based PLC. A small

ladder program loaded into the PLC enables the controller to capture and process the analog signal.

FLEXIBLE, USER-FRIENDLY CONFIGURATION

Analog I/O modules are shipped as an application specific factory-configured module, with a standard default signal type and range for true Plug 'n' Play installation. In the event conditions require changes from the default settings, SensorPulse's optional SignalFlex™ software utility gives users the control and security to re-configure the MSP Analog I/O across a broad range of parameters — all through any standard Windows®-based PC (or even the new hand held palmtops running Windows® CE). SignalFlex™ minimizes the use of tedious dip switches or other less precise, vibration-prone electromechanical methods, and does not require expensive proprietary hardware devices.

FEATURES

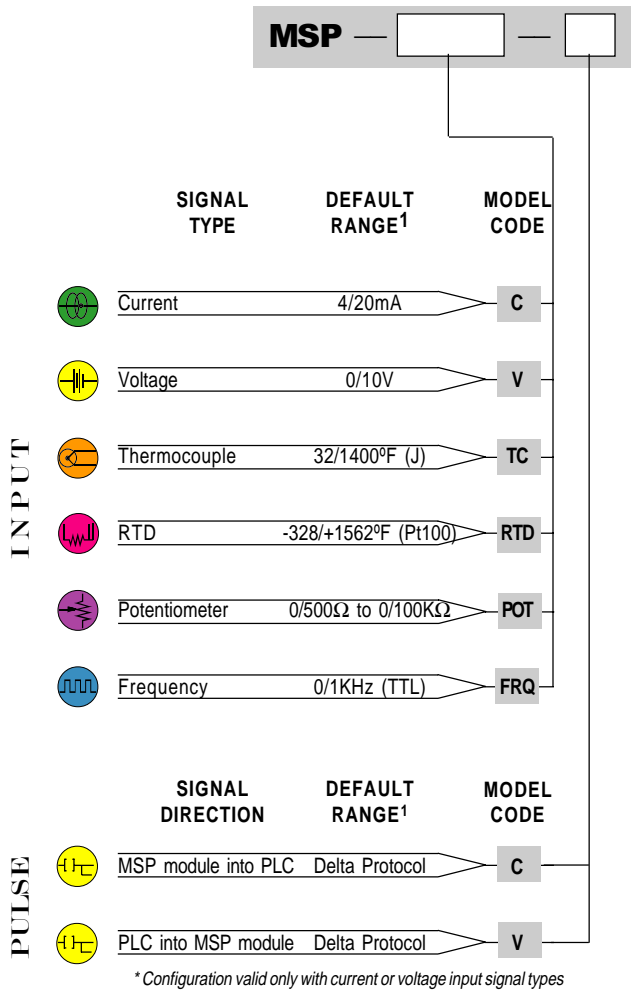
- Single channel for analog I/O expansion.
- Analog input and output to and from the PLC even micro PLCs.
- Isolated to eliminate Ground loops.
- Plug 'n' Play or re-re-configure with software.
- No potentiometers to vibrate and drift..
 - Digital conditioning, CJC, and calibration for higher reliability.
- Small DIN rail terminal block package (only 12mm wide).
- -40°C to +75°C ambient operating range.
- 16-bit resolution with 0.05% F.S. accuracy.
- Wide range of inputs: Current, Voltage, Thermocouple, RTD, Potentiometer, Frequency.



nominal specifications (default configurations)

MODEL ORDERING INFORMATION

Build model code here using
the chart below:



PERFORMANCE:

Accuracy, Output	0.05% Full Scale (includes linearity, repeatability, calibration error)
Accuracy, Cold Junction Compensation	±0.2°C (-15 to +55°C range)
Thermal Drift (Stability)	0.01% Full Scale per °C
Resolution	16-bit
Response Time, 10 to 90% Of Span	250ms typical @ 10ms scan time (Delta protocol)
Isolation	1500 Vac. 2-way (input to output to output, input to power)
Common Mode Rejection	160dB
Normal Mode Rejection	>80dB
Input Impedance	1GΩ (TC); >55KΩ (V); 82Ω (C)
Excitation Current (RTD)	150μA
Excitation Voltage (POT)	1.25V
Output Impedance	>10MΩ (C); ~0Ω (V)
Required Supply	15-32Vdc @ 25-45mA

FUNCTIONAL:

Input Signal Types	Thermocouple (J, K, E, N, T), RTD (Pt100, Ni, Cu), Current, Voltage, Potentiometer, Frequency
Input Signal Ranges	See model code for default settings Request entire list of ranges, configurable through SignalFlex™ utility
Output Signal Types	Discrete to PLC input, Current or Voltage from PLC output
Output Signal Ranges	See model code for default settings Request entire list of ranges, configurable through SignalFlex™ utility
Operating Temperature	-40°C to +75°C
Storage Temperature	-45°C to +85°C
Configuration Backup	Nonvolatile EEPROM
Warranty From Defects	One year from shipment

PHYSICAL / ENVIRONMENTAL:

Agency Certifications	UL, cUL, CSA, CE
ESD Resistance	IEC 1000-4-2 (4KV)
Transient Protection	IEC 1000-4-4 (2KV)
RFI Immunity	IEC 1000-4-3 (10V/m)
Enclosure Size	88mm/3.5in(H) x 68mm/2.7in(D) x 12.2mm/0.48in(W)
Enclosure Material	Polyamide, flame protection
Mounting	DIN rail (32mm-G and 35mm-H)
Weight	40g/1.4oz
Humidity	95%, non-condensing
Wire Terminal	Socketed screw terminals for 12-22 AWG



¹NOTE:
The Plug 'n Play MSP modules are set for a range that is optimized for most applications. The range, as well as other parameters, may be reconfigured and recalibrated by the user through SensorPulse's easy-to-use Windows-based SignalFlex™ software utility.

Take part in a revolution!

FOR MORE DETAILS AND THE NAME OF A DISTRIBUTOR, CALL TCP: 800-345-5730

FOR PRIVATE LABEL INQUIRIES, CALL SENSORPULSE'S OEM SALES GROUP: 800-447-5900

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