

DUAL INPUT DIN RAIL SIGNAL CONDITIONER / ISOLATOR / SPLITTER

SEM1750

- DIRECT USB CONFIGURATION OFFERS SYSTEM DIAGNOSTIC TOOLS
- ± 50 VDC or ± 50 mA FULL RANGE INPUTS WITH SENSOR SUPPLY
- VOLTAGE OR CURRENT ACTIVE / PASSIVE OUTPUTS
- DUAL INPUTS WITH 5 PORT ISOLATION (3.75 KV)
- UNIVERSAL AC/DC POWER SUPPLY – 20 to 240VDC/VAC 50/60 Hz
- USER SELECTABLE MATH FUNCTIONS ON EACH OUTPUT CHANNEL
- USER LINEARIZATION FUNCTION
- CONFIGURABLE AS AN ACTIVE SIGNAL SPLITTER

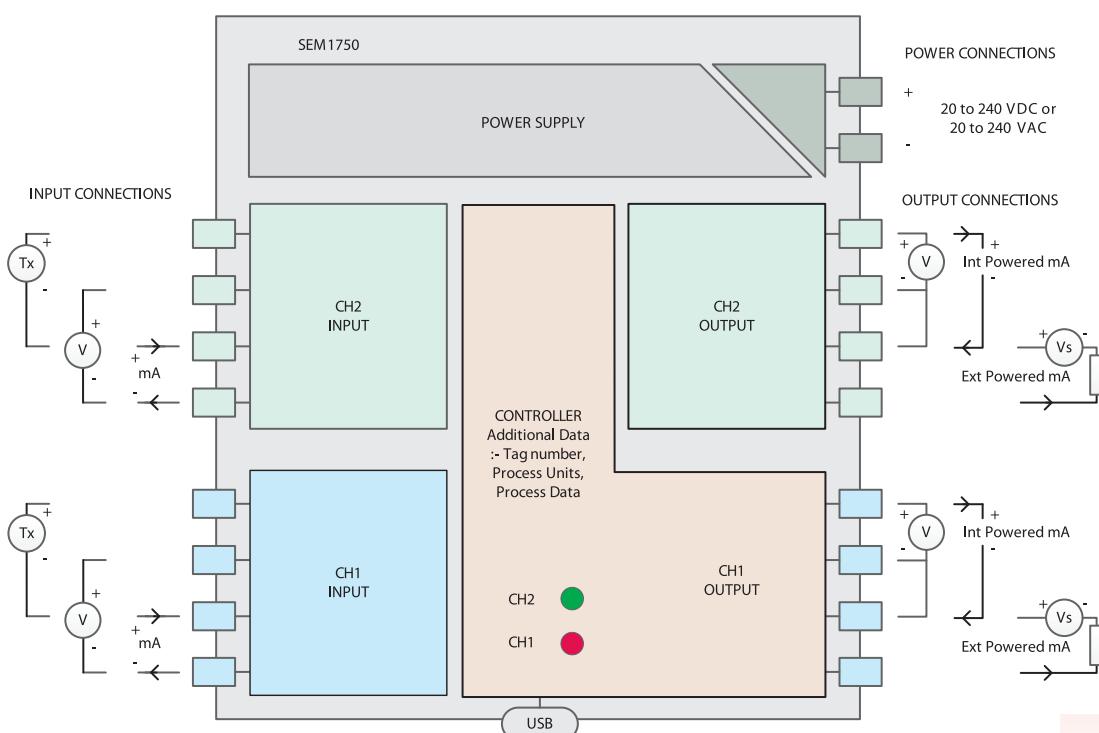


INTRODUCTION

The SEM1750 is a cost effective two input signal conditioner that accepts a bipolar voltage or current signal on each input and isolates to provide two ranged industrial process output signals such as 0 to 20 mA, 4 to 20mA, 0 to 10VDC or 1 to 5VDC.

The SEM1750 is configured using our easy to use configuration software "USB Speed Link". "USB Speed Link" offers the user two levels of configuration, a basic current/voltage signal converter where the device can be set as dual channel or signal splitter. For more advanced applications a configuration menu offers a wide range of user set functions, including process scaling and profiling, math functions, signal damping, sensor linearization and signal preset for diagnostics purposes.

If ranges are not specified when ordered then the transmitter will be shipped with the default range of Current 4 to 20mA on both inputs and 4 to 20mA on both outputs.



PC CONFIGURATION EQUIPMENT

COMPUTER Running Windows XP or later with USB port

USB CABLE A to Min B

METHOD Load PC with USB SpeedLink software. Then install drivers.

Connect SEM1750 USB port to PC USB port using cable.

Run software, set configuration required and save to device.

SPECIFICATIONS @ 68°F

INPUTS (Channels 1 & 2)

SAMPLE RATE

User Set	420mS (18 Bits full range)
	140mS (16 Bits full range)
	70mS (14 Bits full range)

CURRENT

Full Range	$\pm 50\text{mA}$
User Range	Any range within full range
Impedance	10Ω
Accuracy	Range -22 to 22mA $\pm 5\mu\text{A}$
	Range -50 to 50mA $\pm 10\mu\text{A}$
Stability	0.04 % Full Scale / °C
Transmitter Supply	22VDC @ 25mA

VOLTAGE

Full Range	$\pm 50\text{VDC}$
User Range	Any range within full range
Impedance	$1\text{M}\Omega$
Accuracy	Range -22 to 22VDC $\pm 5\text{mV}$
	Range -50 to 50VDC $\pm 10\text{mV}$
Stability	0.04 % Full Scale / °C

DAMPING

Type	Independent rise and fall delays 0 to 3600 seconds for 1VDC or 1mA change.
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PRESET

Type	User software preset
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PROFILE (USER LINEARIZATION)

User Linearization 22 segments input to process

OUTPUTS (Channels 1 & 2)

Output channels can be independently set to monitor one of the following (Ch1 & Ch2) input Functions.

Ch1	(Ch1 * Ch2)
Ch2	(Ch1 / Ch2)
(Ch1 + Ch2)	(Ch1 ^ Ch2)
(Ch1 - Ch2)	(Ch2 ^ Ch2)
Absolute (Ch1 - Ch2)	Average (Ch1 Ch2)
Highest Channel (Ch1 or Ch2)	Fixed Signal (For Diagnostics)
Lowest Channel (Ch1 or Ch2)	

Output Types Current (sink, source), Voltage

Current Outputs

Working Range	0 to 20 mA
User Range	Any range within full range
Max Range	23.1mA (typical)
Loop Voltage Effect	0.2\textmu A / V (Sink Mode)
Thermal Drift	$1\text{\textmu A / }^{\circ}\text{C}$
Current Sink	Supply Voltage 10 to 28VDC
Current Source	Max Load 700Ω
Accuracy	(mA Out / 2000) or $\pm 5\mu\text{A}$ whichever is greater

Voltage Outputs

Working Range	0 to 10VDC
User Range	Any range within full range
Max Range	10.1 VDC (typical)
Voltage Load	Min $1\text{K}\Omega$ (compensation provided)
Out Connections	Screw Terminals
Accuracy	$\pm 5\text{mV}$

ORDER CODES:

SEM1750 DUAL INPUT SIGNALCOND./ISOLATOR/SPLITTER

Associated Product

SEM1700 SMART UNIVERSAL SIGNAL CONDITIONER

Accessories

USB3	3 FOOT USB A/M TO MINI B/M CABLE
USB6	6 FOOT USB A/M TO MINI B/M CABLE
USB10	10 FOOT USB A/M TO MINI B/M CABLE
USB15	15 FOOT USB A/M TO MINI B/M CABLE

Local Representation

ISOLATION BS EN 61010-1:2010

SUPPLY TO INPUT/OUTPUT

Working Voltage 253VAC

Isolation Test Voltage 4,000VAC

INPUT/OUTPUT PORTS

Max Voltage (fault) 250VAC

Isolation Test Voltage 3,750VAC

(Note USB terminals and Ch1 output share the same Ground)

GENERAL SPECIFICATIONS

Update Time 720, 140, 70mS

Start Up Time 4 seconds

SUPPLY

Range 20 to 240VDC

20 to 240VAC 50/60Hz

Power 3W @ full output current

Protection Internal resettable fuse 0.5A

Over Voltage protection.

CONFIGURATION

The following applies to both channels independently.

Input Signal

Scan Type 420, 140, 70mS

Type $\pm 50\text{mA}$ or $\pm 50\text{VDC}$

Preset Isolates input signal and allows user to enter input signal value.

Damping Independent rise/fall delays for each channel.

User Linearization 2 to 22 Floating point numbers. Input range to process range.

Process Signal Process Units (4 characters)

Tag Number 20 characters

Output Signal Source Selects output channel source

Process Out Signal

Process Out Low Any point within indicated process range.

Process Out High Any point within indicated process range.

Output Signal

Type 0 to 20mA, 0 to 10VDC

Low Signal Out Any point within type range

High Signal Out Any point within type range

ENVIRONMENT

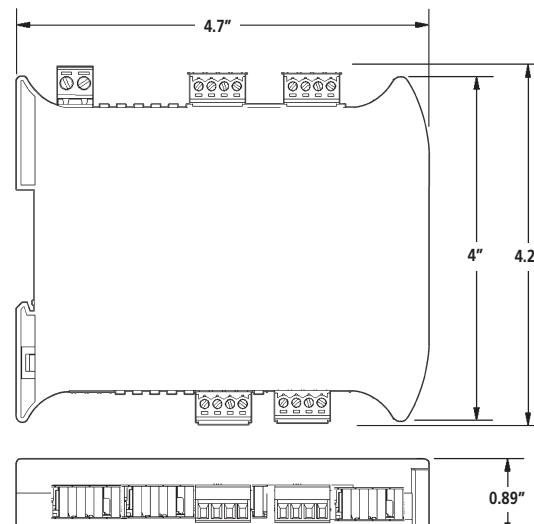
Ambient Operating Range -22 to 158°F

Ambient Storage Temperature -40 to 185°F

Ambient Humidity Range 10 to 90% RH non condensing

Warm-up Time 1 minute to full accuracy

MECHANICAL



SYSTEM DIAGNOSTIC TOOLS

- With SpeedLink the SEM1750 allows the user to select any part of the output range as a fixed output for system fault finding.
- The SEM1750 can be "told" by the software its input value causing it to respond accordingly, this allows the user to confirm the output response for any given input value.
- By setting a user profile with damping delay and switching the input condition from high to low the output signal can be made to follow a pre-defined, timed, response profile allowing the diagnostics of any downstream equipment.
- The free configuration software is capable of displaying the electrical input signal, the converted process signal and output value for each channel.
- The free configuration software is capable of recording timed stamped input and output values from the SEM1750 to a file on a PC, the file can be used to create graphs and reports showing how a system has behaved over time.