DUAL CHANNEL PROCESS CONDITIONER/ISOLATOR/SPLITTER

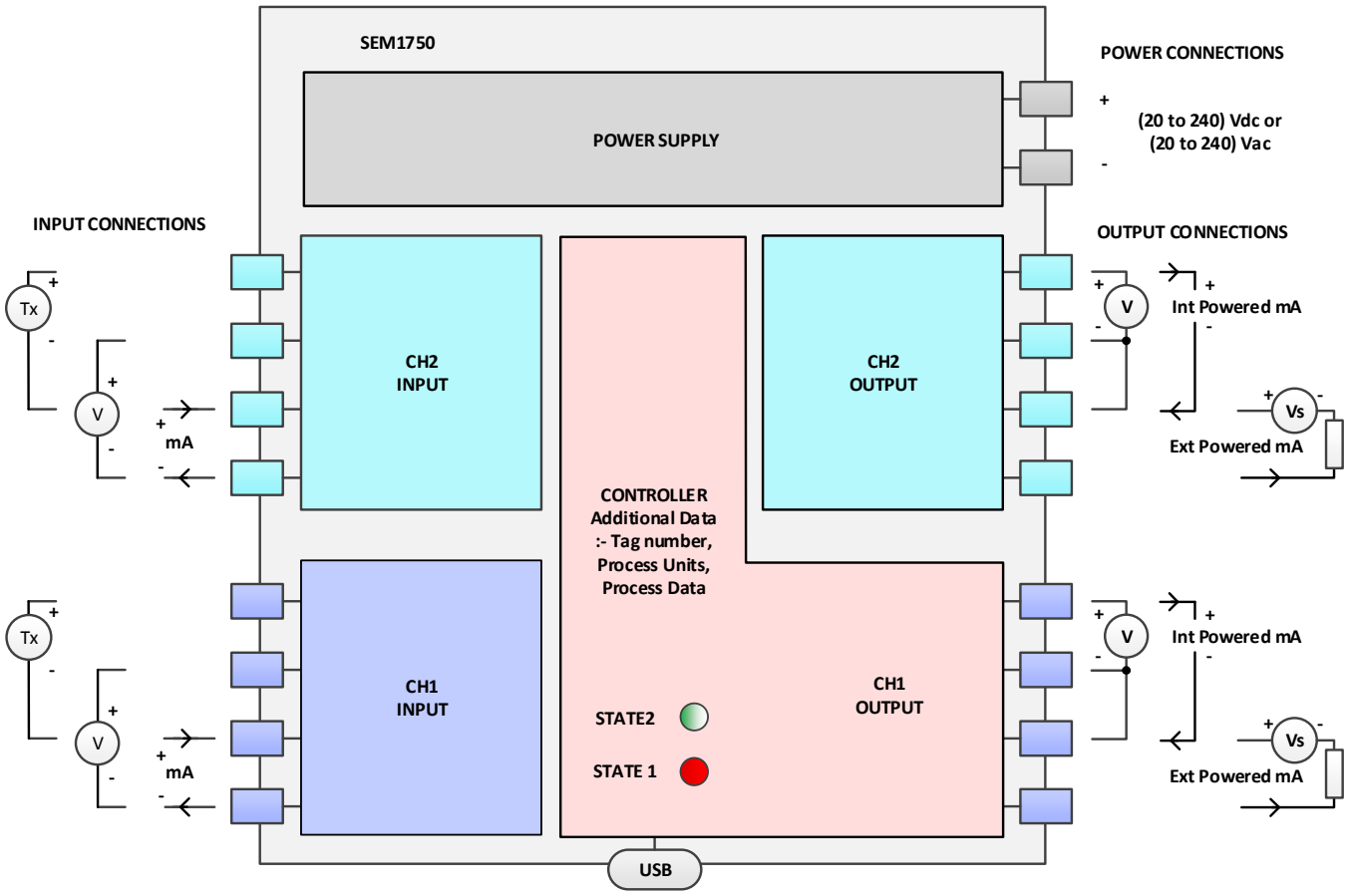
SEM1750

- ±50 Vdc or ±50 mA FULL RANGE INPUTS WITH TRANSMITTER SUPPLY
- VOLTAGE OR CURRENT ACTIVE / PASSIVE OUTPUTS
- DIRECT USB CONFIGURATION OFFERS SYSTEM DIAGNOSTIC TOOLS
- DUAL CHANNEL WITH 5 PORT ISOLATION (3.75 KV)
- WIDE RANGING AC/DC POWER SUPPLY
- USER SELECTABLE MATHS FUNCTIONS ON EACH OUTPUT CHANNEL
- USER LINEARISATION (PROFILE) FUNCTION
- CONFIGURABLE AS AN ACTIVE SIGNAL SPLITTER

INTRODUCTION

The SEM1750 is a cost effective dual channel signal conditioner that accepts a bipolar voltage or current signal and isolates to provide ranged industrial process output signals such as (0 to 20) mA, (4 to 20) mA, (0 to 10) V, (1 to 5) V DC.

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, or for more advanced applications, a configuration menu offering a wide range of user set functions, including process scaling and profiling, maths functions, signal damping, sensor linearisation and signal preset for diagnostics purposes.



STATUS INSTRUMENTS

DUAL CHANNEL PROCESS CONDITIONER/ISOLATOR/SPLITTER

PC CONFIGURATION

EQUIPMENT

COMPUTER	Running Windows XP or later with USB port
USB CABLE	A to Mini 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 @ 20 °C

INPUTS (Channels 1 & 2)

SAMPLE RATE

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

CURRENT

Full Range	± 50 mA
User Range	any range within full range
Impedance	10 Ω
Accuracy	Range (-22 to 22) mA ±5 µA Range (-50 to 50) mA ±10 µA
Stability	0.02 % (Full Scale) / ˚C
Transmitter supply	22 V dc @ 25 mA

VOLTAGE

Range	± 50 V dc
User Range	any range within full range
Impedance	1 MΩ
Accuracy	Range (-22 to 22) V ±5 mV Range (-50 to 50) V ±10 mV
Stability	0.02 % (Full Scale) / ˚C

DAMPING

Type	Independent rise and fall delays (0 to 3600) seconds per 1 V or 1 mA output change.

PRESET

Type	User software preset

PROFILE (USER LINEARISATION)

User Linearisation 22 segment
Input to process variable (PV).

OUTPUT (Channels 1 & 2)

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

	Ch1 Ch2 (Ch1 + Ch2) (Ch1 - Ch2) Absolute (Ch1 - Ch2) Highest Channel (CH1 or CH2) Lowest Channel (CH1 or CH2) (CH1 * CH2) (CH1 / CH2) (CH1 ^ 2) (CH2 ^ 2) Average (CH1 CH2) Fixed signal (For Diagnostics)
Output Types	Current (sink, source), Voltage

OUTPUT (Channels 1 & 2) (Continued)

Current Range

Working Range	(0 to 20) mA
User Range	any range within full range
Max Range	23.1 mA (typical)
Loop Voltage effect	0.2 uA / V (Sink Mode)
Thermal drift	1 uA / ˚C
Current sink	Supply voltage (10 to 28) V dc
Current source	Max Load 700 Ω
Accuracy	(mA Out / 2000) or ± 5 µA whichever is the greater

Voltage Ranges

Working Range	(0 to 10) V
User Range	any range within full range
Max Range	10.1 V (typical)
Voltage Load	Min 1 KΩ (compensation provided)
Output Connection	Screw Terminal
Accuracy	± 5 mV
Thermal Drift	± 1 mV / ˚C

GALVANIC ISOLATION **BS EN 61010-1**

Supply to Input / Output	
Working Voltage	253 V ac
Isolation test Voltage	4000 V ac
Input output ports	
Max Voltage (fault)	250 V ac
Isolation test voltage	3750 V dc

(Note USB terminals and CH1 output share the same Ground)

GENERAL SPECIFICATION

Update time	420, 140, 70 mS
Start up time	4 seconds

SUPPLY

Range	(20 to 240) V dc (20 to 240) V ac (50 to 60) Hz Power 3 W @ full output current
Protection	Internal fuse (0.5 A) Over Voltage protection. (@250 V)

CONFIGURATION
The following applies to both channels independently.

Input Signal

Scan Type	420, 140, 70 mS
Type	±50 mA or ±50 V
Preset	Isolates input signal and allows user to enter input signal value.
Damping	Independent rise/fall delays for Each channel.
User Linearisation	Segment (3 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 20) mA, (0 to 10) V
Low Signal Out	Any point within type range
High Signal Out	Any point within type range

STATUS INSTRUMENTS

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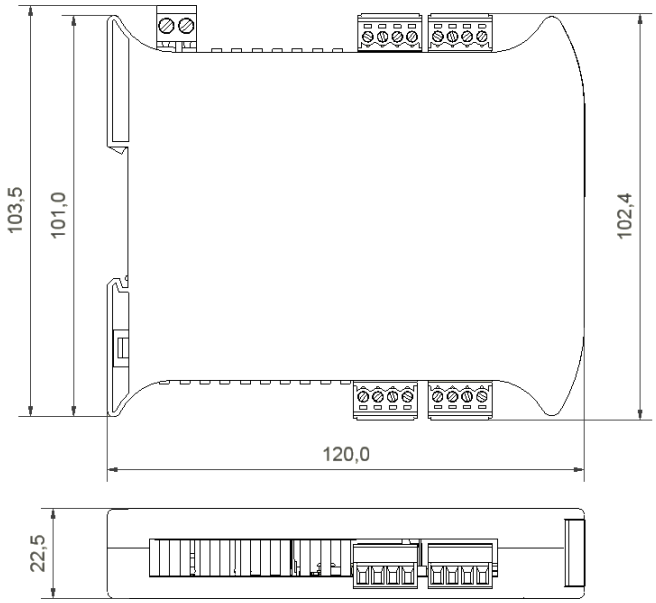
ENVIRONMENT

Environmental

Ambient operating range	(-30 to +70) °C
Ambient storage temperature	(-40 to +85) °C
Ambient humidity range	(10 to 90) % RH non condensing
Warm-up time	1 minute to full accuracy

MECHANICAL

All dimensions in mm



SYSTEM DIAGNOSTIC TOOLS

1. With USB_Speed_Link the SEM1750 allows the user to select any part of the output range as a fixed output for system fault finding.

2. 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.

3. 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 (refer to application notes).

4. The free configuration software is capable of displaying the electrical input signal, the converted process signal and output value for each channel.

5. The free configuration software is capable of recording timed stamped input and output values from the SEM1750 to file on a PC. The file can be used to create graphs and reports showing how a system has behaved over time.

ORDER CODE: **SEM1750**

ACCESSORIES:
USB LEAD A/M TO MINI B/M **48-200-0001-01**

USB speed link software is a free download available at www.status.co.uk. The software runs without the device connected, allowing the user to familiarise themselves with the configuration menus and product capability prior to purchase.

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