Iso Verter®II

Model SC478 and SCL478

INSTALLATION INSTRUCTIONS

LOVE CONTROLS

a Division of Dwyer Instruments, Incorporated

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Contents

Description

The SC/SCL478 accepts a pulse frequency input. The input sensitivity can be adjusted from 50mV to 5V (150V max).

The SC/SCL478 is a microprocessor-based unit. Calibration of the input and output ranges is done with a simple push-button and three LED display. The push-button is recessed to avoid inadvertently bumping it by mistake. Calibration values are stored in a nonvolatile memory.

The input may be configured for a minimum span of 0.2 Hz for frequencies between 1 to 1000 Hz. For frequencies between 1000 Hz to 10,000 Hz, the minimum span is 2 Hz. This allows the input to be programmed for almost any desired span, i.e. 10 to 15 Hz, 3456 to 5678 Hz, or 9998 to 10,000 Hz.

Output Selection

MODE SELECTION SWITCH BANK (SW-3)

1. For VOLTAGE OUTPUT turn switches one and two ON and switch three OFF.
2. For CURRENT OUTPUT turn switches one and two OFF and switch three ON.
3. For UNIPOLAR OUTPUT turn switch four ON and switch five OFF.
4. For BIPOLAR OUTPUT turn switch four OFF and switch five ON.
5. For ZERO BASED OUTPUT (eg. 0 TO 20 mA) turn switch six ON and switch seven OFF.

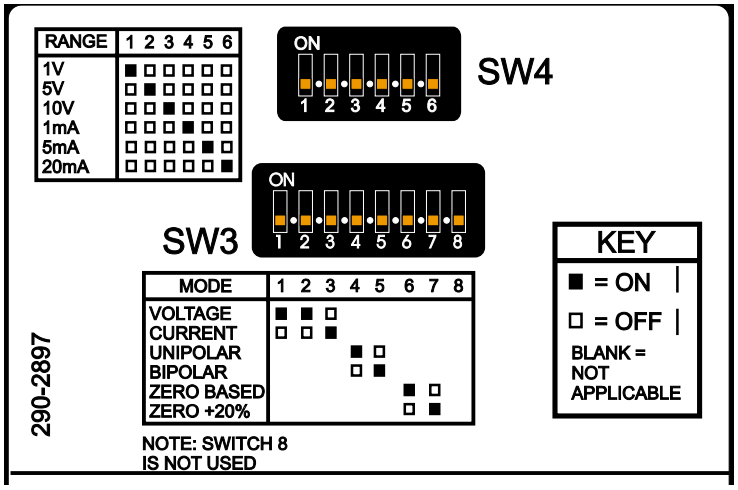


Figure 1. Output Selection Switches

6. For ZERO SUPPRESSION (eg. 4 TO 20 mA) turn switch six OFF and switch seven ON. If BIPOLAR is selected, do not use the

ZERO SUPPRESSION switch. Use the ZERO adjustment to suppress the output.

7. Switch eight is always OFF. (It is not connected to any circuitry. If switch eight is turned ON there is no effect on the operation of the device.)

RANGE SELECTION SWITCH BANK (SW-4)

Turn ON the switch for the scale desired. All other switches should be OFF. If BIPOLAR OUTPUT is selected, the scale will be from MINUS-SELECTION to PLUS-SELECTION (eg. -10 TO +10 VDC)

Mounting

Mount the unit in a panel that will not be subject to excessive temperature, shock, or vibration. All models are designed for mounting on an industry standard 35 mm DIN rail. An optional surface mounting kit is available from the factory (P/N 35DINADPTR).

To install hold the SC478 so that the front is higher than the rear. Place the upper slot on the rear of the SC478 on the top edge of the DIN rail. Slowly rotate the front down until the bottom spring clip snaps over the bottom edge of the DIN rail.

To remove from the DIN rail, place a small slotted screwdriver in the slot in the spring clip under the housing. Pry the slot downward to release the SC478 from the bottom of the rail.

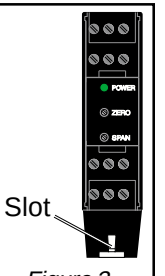


Figure 2. Removal Slot

Wiring

The wiring terminals for the SC478 and SCL478 are compression type. To open the wiring terminal, turn the screw for that terminal counterclockwise. Slide the wire into the terminal space. While holding the wire in place, turn the screw clockwise to tighten. Do not overtighten. The wire should be held snugly in place.

Power for SC478 is 85 to 265 Vdc/Vac 50 to 400 Hz. Power for SCL478 is 12 to 24 Vdc/Vac 50 to 400 Hz.

Wire the input, output, and power as shown on the wiring label. **Do not run Class 2 signal wires adjacent to or in the same conduit as power wires.**

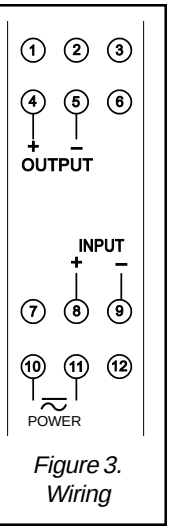


Figure 3. Wiring

CALIBRATION

WARNING: Do not attempt to operate this device with the cover removed. Potentially lethal voltage is present on some of the internal components. Do not open the unit. There are no internal adjustments or user serviceable parts in the unit.

INPUT SENSITIVITY

Input a frequency between 10 Hz and 10,000 Hz at the desired input amplitude.

Adjust the INPUT SENS. adjustment pot until the GREEN LED stops blinking and turns on. For best results, turn the INPUT SENS. adjustment pot one complete revolution beyond the point where the GREEN LED turns on.

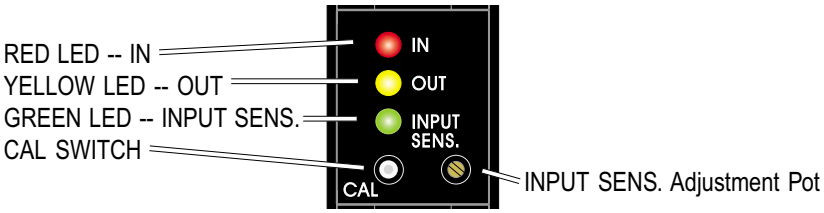


Figure 4. Position of LEDs, Switch, and Adjustment Pot

INPUT CALIBRATION

1. Input the MAXIMUM desired frequency.
2. Press the CAL switch - the red IN LED will light.

Note: if the LEDs were flashing due to a previous error condition, they will stop and allow calibration to continue.

3. Input the MINIMUM desired frequency
4. Press the CAL switch - the yellow OUT led will light.

If this is the first time the unit is calibrated, or it is desired to recalibrate the output, do not release the CAL switch until the yellow OUT led flashes, and proceed to OUTPUT CALIBRATION.

If the output has been previously calibrated and only the input is being calibrated, the output calibration may be bypassed by releasing the CAL switch; waiting about one second and pressing the CAL switch again. The red IN and yellow OUT LEDs will turn off and the input calibration values will be stored in nonvolatile memory.

OUTPUT CALIBRATION

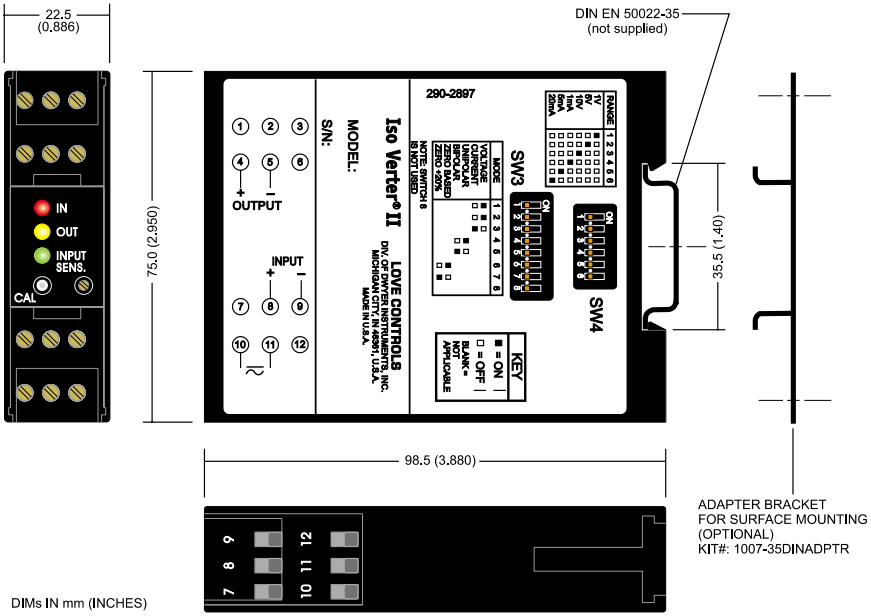
1. Adjust the input frequency at least 15% below the maximum desired input value, then adjust the input frequency for the desired MAXIMUM output value.
2. Press the CAL switch. The red IN LED will turn off, and the yellow OUT LED will stop flashing and stay on.
3. Adjust the input frequency at least 15% above the minimum desired input value, and then adjust the input frequency for the desired MINIMUM output value.
4. Press the CAL switch. The yellow OUT LED will turn off and the calibration values will be stored in nonvolatile memory.

If the red and yellow LEDs flash after calibration, an error condition exits, i.e. the input or output span was set too small, or the minimum/maximum values were reversed.
If it is desired to retain the previous calibration values and exit calibration, simply remove power to the unit before pressing the CAL switch at the minimum input or output step.

Specifications

Power Supply: SC478: 85 to 265 Vac/ Vac 50 to 400 Hz.
SCL478: 12 to 24 Vdc/Vac 50 to 400 Hz. ±20%
Isolation: 1500 VAC
Ambient Temperature Range:
Operating: 0° to 55° C (32° to 131° F)
Storage: -40° to +80°C (-40° to +176°F)
Humidity Conditions: 0 to 90% up to 40 °C non-condensing, 10 to 50% at 55 °C non-condensing.
Linearity: 0.1%
Drift: ±0.02% per °C typical, ±0.05% maximum.
Maximum current output load: 600 ohms.
Maximum voltage output load: 20mA (500 ohms).
Input Type: Frequency.
Full scale range: 1 to 10,000 Hz.
Input impedence: >50 Kohms.
Input Amplitude: 50mV to 150V RMS, overload protected to 180V RMS
Zero adjustment: 0-9998 Hz.
Span adjustment: 2-10,000 Hz.
Minimum span: Input<1,000 Hz = 0.2 Hz. Input >1,000 kHz = 2 Hz.
Input Resolution:
Maximum calibrated input frequency <1,000 Hz = 0.01 Hz
Maximum calibrated input frequency >1,000 Hz = 0.1 Hz
Output Resolution: >7000 steps (approximately 13 bits).

Dimensions



DIMs IN mm (INCHES)

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