

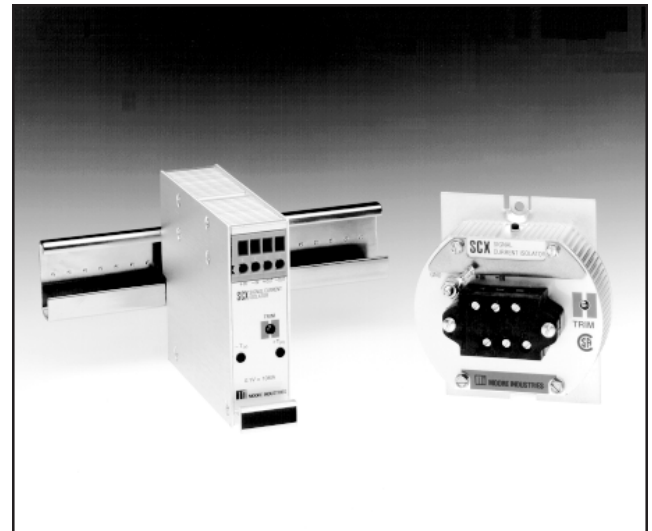
## Description

Moore Industries' SCX 2-Wire Signal Current Isolator provides total isolation between the signal from a non-isolated signal transmitter and a receiving device. This eliminates faulty readings in process measurement and control equipment caused by ground loops and other electrical interference.

The SCX accepts a current (4-20mA or 10-50mA) input from a transmitter or other current source. It provides a highly accurate current (4-20mA or 10-50mA) output that is proportional to the input.

The SCX is protected by a zener diode which limits the maximum voltage drop across the unit in the event that the output load is accidentally disconnected. Output impedance will not exceed 250 ohms maximum for 4-20mA (100 ohms maximum for 10-50mA) under any condition. In the event of an open output circuit, the input loop voltage drop will be limited to 15 volts.

Loop-powered on the input side, the SCX is powered from the process loop. A dedicated power supply is not required.



The SCX is offered in a high-density DIN-style housing and a hockey-puck housing that field-mounts in an explosion-proof enclosure.

## Features

- **Input/output isolation.** Stops ground loops and other electrical interference from affecting the accuracy of a transmitted process signal.
- **Exceptionally accurate.**  $\pm 0.075\%$  of span accuracy makes the SCX the ideal choice for demanding applications.
- **Low output ripple.** 10mV P/P maximum output ripple allows precise interface with computer-based systems.
- **RFI/EMI protection.** The -RF option provides resistance to the harmful effects of radio frequency and electromagnetic interference.

### Certifications (see Options where applicable):



**Canadian Standards Association (CSA)**  
General (Ordinary) Location, [DIN & HP].  
Explosion-Proof & Enclosure 4 (Hazardous Locations)\*- Class I, Groups B, C, D; Class II, Groups E, F, G; Class III.



**Factory Mutual Research Corporation (FMRC)**  
Non-Incendive [DIN & HP]- Class I, Division 2, Groups A, B, C, D. Suitable for: Class II, Division 2.  
Explosion-Proof\*†- Class I, Division 1, Groups B, C, D.  
Dust Ignition-Proof\*†- Class II, Division 1, Groups E, F, G.



**CENELEC Flame-Proof\*** approved by:  
ISSEP/INIEX- EEx d IIC; T6.



**Standards Association of Australia (SAA)**  
Type N- Ex n IIC; T6; IP65  
[in NWTD, vent-less enclosures].  
Flame-Proof\*- Exd IIC; T6; IP66.



**CE Conformant-** EMC Directive 89/336/EEC  
EN 50081-2, 1993 and EN 50082-2, 1995.

\*[HP only: in 2/3-hub L/H(G/S) cast aluminum housings].  
†Suitable for: Class III, Division 1.

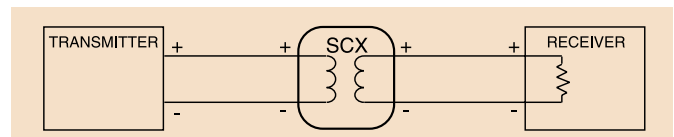


Figure 1. The SCX provides complete isolation between a transmitted signal source and a receiving device.

## Specifications

Characteristics	Ordering Specifications	Options (continued)
<p><b>Performance</b> <b>Calibration Capability (linearity):</b> <math>\pm 0.075\%</math> of span  <b>Isolation:</b> Input and output are transformer isolated (500Vrms) with no dc connections between them  <b>Burden:</b> 5.5V when outputs are shorted for 4-20mA inputs, 10.5V with 250<math>\Omega</math> load; 8.5V when inputs are shorted for 10-50mA inputs, 13.5V with 100<math>\Omega</math> load</p> <p><b>Ambient Temperature</b> <b>Range:</b> -29°C to +82°C (-20°F to +180°F)  <b>Effect:</b> <math>\pm 0.018\%/^{\circ}\text{C}</math> (<math>\pm 0.01\%/^{\circ}\text{F}</math>) per degree zero change; <math>\pm 0.005\%</math> per degree gain change</p> <p><b>Adjustments</b> <b>Type:</b> External multiturn potentiometer  <b>Trim:</b> Adjusts output span <math>\pm 1\%</math></p> <p><b>Weight</b> 141.5 grams (5 oz.)</p>	<p><b>Unit</b> <b>SCX</b> Signal Current Isolator</p> <p><b>Input</b> <b>4-20MA</b> into 275<math>\Omega</math>  <b>10-50MA</b> into 150<math>\Omega</math></p> <p><b>Output</b> Current:  <b>4-20MA</b> into 0-250<math>\Omega</math>  <b>10-50MA</b> into 0-100<math>\Omega</math>            Voltage:  <b>1-5V</b> with parallel resistance across output terminals; 250<math>\Omega</math> for 4-20mA, 100<math>\Omega</math> for 10-50mA</p> <p><b>Power</b> Current Loop Excitation at 4mA:  <b>5.5VLP</b> 5.5 volts loop powered (input side) with 4-20mA (see Burden specification for loop drop)  <b>8.5VLP</b> 8.5 volts loop powered (input side) with 10-50mA (see Burden specification for loop drop)  <b>4.5VLP</b> 4.5 volts loop powered (input side) with 10-50mA input/4-20mA out; not available with ECD housing (see Burden specification for loop drop)</p> <p><b>Options</b> <b>-CE</b> CE Conformant, meets the requirements of EMC directive 89/336/EEC EN50081-1 and 50082-1, 1992.</p>	<p><b>Housing</b> <b>DIN</b> Aluminum DIN-style housing mounts on G-type rail (see the DIN data sheet)  <b>HP</b> Hockey-puck housing with spring clips for mounting in an explosion-proof enclosure (see the FL/HP data sheet)  <b>FL</b> Hockey-puck housing with flanges for surface or relay track mounting (see the FL/HP data sheet)  <b>2/3-hub LS/LG/HS/HG*</b> Hockey-puck housing mounted in 2/3-hub, low dome, solid or glass cover explosion proof enclosure (see the EXPL data sheet)  <b>ECD</b> Economy thermo-plastic DIN-style rail mount housing; mounts on a G or Top Hat rail (see the ECD data sheet)</p> <p><small>* F (prefix) on explosion-proof enclosure indicates CENELEC flameproof approved EExd IIc T6 (e.g., <b>F2LS</b>)  <b>FM</b> (prefix) on explosion-proof enclosure indicates FM approved Class I, Division I, Groups B, C, D (e.g., <b>FM2LS</b>)  <b>P</b> (suffix) indicates unit comes equipped with base plate and U-bolts for mounting on a 2-inch pipe (e.g., <b>2LSP</b>).</small></p>

**When ordering, specify:** Unit / Input / Output / Power / Options [Housing]

**Model number example:** SCX / 4-20MA / 4-20MA / 5.5VLP / -FA [DIN]

## Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specifications table. For assistance, refer to the model number example located at the bottom of the table.



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