

October 2022

► Description

Moore Industries' SCX 2-Wire Signal Current Isolator provides total isolation between the signal from a 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) input from a transmitter or other current source. It provides a highly accurate current (4-20mA) 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 should not exceed 250 ohms maximum for 4-20mA 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..

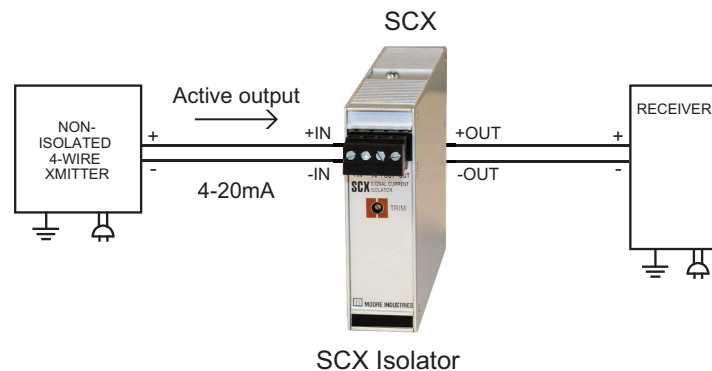
► Features

- **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.

Certifications



Figure 1. The input-loop powered SCX provides loop isolation when line power or output-loop power is not available.



► Specifications

Performance

Calibration Capability (linearity): ±0.075% of span

Isolation: Input and output are transformer isolated (500Vrms) with no dc connections between them

Burden: 5.5V when outputs are shorted for 4-20mA inputs, 10.5V with 250Ω load

Output Tracking: Assuming 4-20mA input and 4-20mA output; the isolator output will follow the input below 3mA when the input fails

Ambient Temperature Range: -29°C to +82°C (-20°F to +180°F)

Effect: ±0.018%/°C (±0.01%/°F) per degree zero change; ±.005% per degree gain change

Adjustments

Type: External multiturn potentiometer

Trim: Adjusts output span ±1%

Weight: 141.5 grams (5 oz.)

► Certifications

SCX - HP in BH/SB2 Housing



SCX - HP
FM Approvals (US/Canada):
Non-Incendive
 Class I, Division 2, Groups A, B, C & D



FM Approvals (FM Global Group):
Explosion-Proof & Dust/Ignition-Proof
 Class I, Division 1, Groups A*, B, C & D
 Class II & III, Division 1, Groups E, F & G
Environmental Protection: NEMA 4X & IP66
 T6 @ 60°C Maximum Operating Ambient
**For Group A applications, seal all conduits within 18"*



SCX - DIN
FM Approvals (US/Canada):
Non-Incendive
 Class I, Division 2, Groups A, B, C & D



CSA Group (Canadian Standards Association):
Explosion-Proof
 Class I, Division 1, Groups A*, B, C & D
 Class II, III, Groups E, F & G
 Type 4X, IP66
 Ambient Temp. Range: -20°C to +60°C; T6
**For U.S. Group A applications, seal all conduits within 18"*



SCX - DIN
UL : (US/Canada):
 Ordinary (non-hazardous) or
 Hazardous Locations*
 Class I, Division 2, Groups A, B, C, & D T4
**Certification not applicable with -RF option.*



ATEX Directive 2014/34/EU (ISSeP):
Explosion/Flame-Proof
 Ⓜ II 2 G Ex d IIC T6 Gb
 Ⓜ II 2 D Ex tb IIIC Db T85°C IP66



SCX - HP and SCX - DIN
CE Conformant-
 EMC Directive 2014/30/EU – EN 61326



ANZEX (TestSafe):
Explosion-Proof/FlameProof
 Ex d IIC T6 (Tamb 60°C)

► Ordering Information

Unit	Input	Output	Power	Options	Housing
SCX Signal Current Isolator	4-20mA into 275Ω	4-20mA into 0-250Ω	Current Loop Excitation at 4mA: 5.5VLP 5.5 volts loop powered (input side) with 4-20mA (see Burden specification for loop drop)	<p>-RF RFI/EMI protection 50V/m - abc = 0.1% full scale when tested according to SAMA standard PMC 33.1</p> <p>-CE CE Conformant, meets the requirements of EMC directive 2014/30/EU - EN 61326</p> <p>(-FA, Front Access, is an obsolete option code and is the standard build for this product. Terminals for the electrical wires are on the Front of the SCX)</p>	<p>DIN Universal DIN-style housing mounts on 32mm G-type and 35mm Top Hat DIN-rails</p> <p>FL Hockey-puck housing with flanges for surface or relay track mounting</p> <p>HP Hockey-puck housing with spring clips for mounting in an explosion-proof enclosure</p> <p>BH2NS (*) or (±) Aluminum Explosion-Proof enclosure with two 1/2" NPT entry ports and a solid cover</p> <p>BH2TS (*) or (±) Aluminum Explosion-Proof enclosure with two 3/4" NPT entry ports and a solid cover</p> <p>BH2MS (*) or (±) Aluminum Explosion-Proof enclosure with two M20 x 1.5 metric entry ports and a solid cover</p> <p>BH3NS (*) or (±) Aluminum Explosion-Proof enclosure with three 1/2" NPT entry ports and a solid cover</p> <p>BH3TS (*) or (±) Aluminum Explosion-Proof enclosure with two 3/4" NPT side-entry ports, one 1/2" NPT bottom port, and a solid cover</p> <p>BH3MS (*) or (±) Aluminum Explosion-Proof enclosure with two, M20 x 1.5 metric side-entry ports, one 1/2" NPT bottom-entry port, and a solid cover</p> <p>SB2NS (*) or (±) 316 Stainless Steel 2-Hub, Explosion-Proof enclosure with two 1/2" NPT entry ports and a solid cover</p> <p>SB2MS (*) or (±) 316 Stainless Steel 2-Hub, Explosion-Proof enclosure with two M20 x 1.5 metric entry ports and a solid cover</p> <p>* Either A or E suffix (comes supplied with 2" pipe mount hardware) A suffix indicates ANZEx/TestSafe (Ex d) Flameproof approvals (i.e. BH2MSA) E suffix indicates ATEX (Ex d and tD) Flameproof approvals (i.e. BH2MSE) ± P suffix indicates enclosure comes equipped with base plate and U-bolts for mounting on a 2-inch pipe (i.e. BH2NSP) See BH, SB and D-BOX Datasheets for additional information.</p>

When ordering, specify: Unit / Input / Output / Power / Options [Housing]
Model number example: SCX / 4-20MA / 4-20MA / 5.5VLP / -CE [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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