



CSA INTERNATIONAL

# Certificate of Compliance

Certificate Number: 183242- 1016986 (File LR 97113)

Project: 1016986

Date Issued: 17 September 1999

Issued to: Kistler-Morse Corp.  
19021 120<sup>th</sup> Ave. N.E.  
Bothell, WA 98011-9511  
USA

*The products listed below are eligible to bear the CSA Mark shown*



Issued by: Scott Friel, P.Eng

Signature: 

### CSA PRODUCT CLASS:

2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations.

### PRODUCTS

"Kistler-Morse" Sonocell Ultrasonic Transceiver System, consisting of the Ultrasonic Transducer Models, Temperature Compensation Probe (both for use in Hazardous Locations) and associated Electronics units (for use in ordinary Non-Hazardous Locations) listed below:

#### PART A:

Class I, Groups A, B, C and D; Encl. 4:

#### TRANSDUCERS (For Hazardous Locations)

Model No.	Enclosure Material	Encapsulant
SC43ST	Stainless Steel	See description in Report (Page 4)
SC22ST	Stainless Steel	See description in Report (Page 4)
SC14ST	Stainless Steel	See description in Report (Page 4)



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Class II, Division 1 and 2, Groups EFG, Class III

TRANSDUCERS (For Hazardous Locations)

Model No.	Enclosure Material	Encapsulant
SC22PT	CPVC	See description in Report (Page 4)
SC43PT	CPVC	See description in Report (Page 4)
SC43C	CPVC	See description in Report (Page 4)
SC14PT	CPVC	See description in Report (Page 4)
SC14PPS	CPVC	See description in Report (Page 4)

PART B

Class I, Groups B, C and D; Class II, Groups E, F, and G; Class III; Encl. 4:

"Kistler Morse" Temperature Compensation Probe, Model Remote Temperature Sensor (K-M P/N 61-6005-01), Rated: 30 Vdc, 0.3 mA, for use with the Sonocell Ultrasonic Transceiver System in hazardous locations.

PART C ELECTRONICS UNITS (For Ordinary NON-Hazardous Locations)

Model "Sonologic II" Level Indicator; rated: 110/230 V, 20 VA.

APPLICABLE STANDARDS:

The product, as described in this Report, complies with:

CSA Standard C22.2 No 0-M1982	-	General Requirements, Canadian Electrical Code, Part II.
0.4-M1982	-	Bonding and Grounding of Electrical Equipment (Protective Grounding).
0.5-M1982	-	Threaded Conduit Entries.
25-1966	-	Enclosures for use in Class II, Groups E, F and G Hazardous Locations.
30-M1986	-	Explosion-Proof Enclosures for Use in Class I Hazardous Locations.
94-1976	-	Special Purpose Enclosures 2,3,4, & 5.
142-M1987	-	Process Control Equipment.
TIL (DRAFT), May 31, 1990	-	Encapsulation.



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### Supplement to Certificate of Compliance

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Issued to: **Kistler-Morse Corp.**  
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Bothell, WA 98011-9511  
USA

*The products listed, including the latest revision described below,  
are eligible to be marked in accordance with the referenced Certificate.*

Issued By: **Scott Friel, P.Eng.**

Signature

#### Product Certification History

Revision	Date	Description
1016986	17 September 1999	Update to the Markings, and conversion to SAP Numbers.
LR 97113-4	June 19, 1998	Update report to include new models, SC22PT, SC43ST and SC22ST. Sonologic Control unit was added. Certificate of Compliance re-issued.
LR 97113-3	June 9, 1995	Update report
LR 97113-2	January 19, 1993	Original Certification.

CONSTRUCTION:

PART A

Sonocell Transducers:

All the listed Transducers are constructed the same, except for some minor parts such as different frequency crystals and face plates (either foam or teflon, for impedance matching), and the enclosure material and size (depending on range).

Overall dimensions of the enclosure: 1-1/4 in diameter at conduit entry end, 4 in. diameter at transducer end, and 6-3/4 in. high.

See Figure 1 (2 Pages) for further details.

See Figure 63 (2 Pages) for High Impact PVC Description and Spec. sheet.

- (3) Model SC43ST, 20 ft. Sonocell Transducer: For Class I, Division 1, Groups ABCD.

3.1 Model SC43ST (64-8008-01)

Originally approved as model SC1-15S/T. Unit has been slightly changed in that the internal assembly was previously bonded to the stainless steel enclosure, and is now mechanically retained. A channel has also been added to the enclosure to more securely retain rubber face seal.

3.2 Model SC43ST-TC (64-8008-03)

Identical in construction and function to the above unit, this added model incorporates an internal thermistor temperature sensor.

3.3 Model SC43SS (64-8037-01)

Identical to No. 3.1, this unit has a stainless steel foil face material in place of the standard TFE film.

3.4 Model SC43SS-TC (64-0837-03)

Identical to No. 3.3, but incorporates an internal thermistor temperature sensor.

- (a) Transducer (Electronics) Assembly:

The component location and assembly information for the Transducer is shown in Figure 3 (2 Pages). The piezoelectric disc, with shim, is sandwiched between the front and back plates. Electrical assembly is isolated from the front plate by the use of insulating tube and foam ring, and secured together by a 3/8 in. by 1-1/2 in long cap screw. A foam/cork covering is glued to the outside of the front plate. Lead wires attach to the shim; one directly to one side of the shim and the other through a 100 K resistor to the other side of the shim. Grounding is provided via a ground wire secured to the inside of the metal coupling and encased in the encapsulant.

- (b) Enclosure: Consists of a Housing, Internal ring, and Bezel, all constructed with Machined 316