Certificate of Compliance

Certificate: 2161697 **Master Contract:** 215069 (215069)

Project: 70184105 **Date Issued:** 2018-08-27

Issued to: **SICK Engineering GmbH**
Bergener Ring 27
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GERMANY
Attention: Michael Kochan

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

C US

Issued by: Laura Li
Laura Li

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations
CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

Class I, Division 1, Groups B, C and D, T4; Class I, Zone 1, Ex/AEx d IIB + H2, T4;
Class I, Division 2, Groups A, B, C and D, T4; Class I, Zone 2, Ex/AEx nA IIC, T4;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EX Series (fixed probe) and FLSE100-EXRE Series (retractable probe). Models FLSE100-EX aaabccdefg hi jklmn* and Models FLSE100-EXRE aaabccdefg hi jklmn*. Input rated: 15-28 V dc, 500 mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 6, IP 65/67. SINGLE SEAL, MWP 1600 kPa (16 bar), process temperature -70°C to 280°C.
Where:
aaa = Nominal length of probe transducer (3 numeric digits between 150 and 550) mm, or NNN for no probe.

b = Probe material:
N (no probe / transducer)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
H (stainless steel, high grade 1.4539, A240 904L, B677)
D (duplex)
T (titanium)

A (Hastelloy)

cc = Process connection:
N (no probe / transducer)
A2 (ANSI 2" CL150)
D5 (DN50 PN16)
A3 (ANSI 3" CL150)
D8 (DN80 PN16)
May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
N (no probe / transducer)
4 (42 kHz)

f = Sealing material:
V (FKM - Viton)
E (EPDM - BUNA AP)
K (FKKM - Kalrez)
M (Metal)

g = Gas temperature:
N (no specification)
S (standard -70°C to 180°C)
H (high temp, -70°C to 280°C)
L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
4 (1 channel F42)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
C (IIC T4)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

Notes:
1) The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-H Series. Models FLSE100-XT-H F1a-H-cC-DD-fghBj4Dlmn. Input rated: 15-28 V dc, 500 mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 6, IP 65/67. SINGLE SEAL, MWP 1600 kPa (16 bar), process temperature -70°C to 280°C.
Where:
a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special use – not critical to certification)

H – Cross-Duct High power, flameproof transducers

c = installation length
S – Standard
X – customized, for high power version the maximum length is limited to the standard length

C-CSA (NEC/CEC)

DD – with flameproof transducer

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

B – NPT

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

4D – 42 KHz flameproof

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non–certification related options.

Notes:
1) The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.
2) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

Class I, Division 1, Groups B, C and D, T6; Class I, Zone 1, Ex/AEx d IIB + H2, T6;
Class I, Division 2, Groups A, B, C and D, T6; Class I, Zone 2, Ex/AEx nA IIC, T6;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EX-6 Series (fixed probe) and FLSE100-EXRE-6 Series (retractable probe). Models FLSE100-EX aaabccdefg hi jklmn* and FLSE100-EXRE aaabccdefg hi jklmn*. Input rated: 15-28 V dc, 500 mA max CL2/SELV. Ambient temperature: -50°C to 55°C. Enclosure Type 6, IP 65/67. SINGLE SEAL, MWP 1600 kPa (16 bar), process temperature -70°C to 280°C.
Where:

aaa = Nominal length of probe transducer (3 numeric digits between 150 and 550) mm, or NNN for no probe.

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection
- N (no probe / transducer)
- A2 (ANSI 2" CL150)
- D5 (DN50 PN16)
- A3 (ANSI 3" CL150)
- D8 (DN80 PN16)
- May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
- May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 4 (42 kHz)

f = Sealing material:
- V (FKM - Viton)
- E (EPDM - BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)
- H (high temp, -70°C to 280°C)
- L (low temp, -200°C to 100°C)

h = Probe retraction:

N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
4 (1 channel F42)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
6 (IIC T6)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

Notes:
1) The suitability of the process seal material for the specific process fluid is the responsibility of the manufacturer.

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations
CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards
CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations
CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

Class I, Division 1, Groups B, C and D, T4; Class I, Zone 1, Ex/AEx d[ia] IIB + H2, T4;
Class I, Division 2, Groups A, B, C and D, T4; Class I, Zone 2, Ex/AEx nA[ia] IIC, T4;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXS Series (with 2 loose ultrasonic transducers). Models FLSE100-EXS bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection
- N (no probe / transducer)
- May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
- May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 1 (135 kHz)
- 2 (200 kHz)
- 8 (80 kHz)

f = Sealing material:
- E (EPDM - BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)
- V (FKM - Viton)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)

H (high temp, -70°C to 280°C)
L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
C (IIC T4)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more then 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-S, -R, -M Series (with 2 loose ultrasonic transducers). Models FLSE100-XT-S, -R, -M, F1a-b-cC-DC-fghijklmn. Input rated: 15-28 V dc, 500mA max

CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

b = path configuration/transducer Type
M – Cross-Duct Medium power, intrinsically safe transducers
S – Cross-Duct Small power, intrinsically safe transducers
R – Rectangle small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
2 – R24, for rectangle, small power versions only
4 – R48 for rectangle, small power versions only
7 – R72 for rectangle, small power versions only
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety
DC – Ex d [ia] IIB+H2 T4

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

i = Cable entries
B – NPT
C – Connector, (only for versions with intrinsically safe transducers)

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe
8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification
n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more then 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.
4) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXPR Series (with two ultrasonic transducers in a twin probe). Models FLSE100-EXPR bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:
b = Probe material:
N (no probe / transducer)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
H (stainless steel, high grade 1.4539, A240 904L, B677)
D (duplex)
T (titanium)

A (Hastelloy)

cc = Process connection:
N (no probe / transducer)
A2 (ANSI 2" CL150)
D5 (DN50 PN16)
A3 (ANSI 3" CL150)
D8 (DN80 PN16)
May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
N (no probe / transducer)
1 (135 kHz)
2 (200 kHz)
8 (80 kHz)

f = Sealing material:
V (FKM - Viton)
E (EPDM - BUNA AP)
K (FKKM - Kalrez)
M (Metal)

g = Gas temperature:
N (no specification)
S (standard -70°C to 180°C)
H (high temp, -70°C to 280°C)
L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)

8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
C (IIC T4)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-P Series (with two ultrasonic transducers in a twin probe). Models FLSE100-XT-P, F1a-P-cC-DC-fghBjklmn. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

P – Probe, small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety
DC – Ex d [ia] IIB+H2 T4

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

B – NPT

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe
8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

Class I, Division 1, Groups C and D, T4; Class I, Zone 1, Ex/AEx d[ia] IIB, T4;
Class I, Division 2, Groups C and D, T4; Class I, Zone 2, Ex/AEx nA[ia] IIB, T4;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXS-C Series (with 2 loose ultrasonic transducers). Models FLSE100-EXS-C bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 51.2V, Isc = 77mA, Ca = 18nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection:
- N (no probe / transducer)
- A2 (ANSI 2” CL150)
- D5 (DN50 PN16)
- A3 (ANSI 3” CL150)
- D8 (DN80 PN16)
- May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
- May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 1 (135 kHz)
- 2 (200 kHz)
- 8 (80 kHz)

f = Sealing material:
- V (FKM - Viton)
- E (EPDM – BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)
- H (high temp, -70°C to 280°C)
- L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
B (IIB T4) Gas groups C and D

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more then 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-S, -R, -M Series (with 2 loose ultrasonic transducers). Models FLSE100-XT-S, -R, -M, F1a-b-cC-DB-fghijklmn. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 51.2V, Isc =

77mA, Ca = 18nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

b = path configuration/transducer Type
M – Cross-Duct Medium power, intrinsically safe transducers
S – Cross-Duct Small power, intrinsically safe transducers
R – Rectangle small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
2 – R24, for rectangle, small power versions only
4 – R48 for rectangle, small power versions only
7 – R72 for rectangle, small power versions only
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety
DB – Ex d [ia] IIB T4

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

i = Cable entries
B – NPT
C – Connector, (only for versions with intrinsically safe transducers)

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe
8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more than 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.
4) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXPR-C Series (with two ultrasonic transducers in a twin probe). Models FLSE100-EXPR-C bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 51.2V, Isc = 77mA, Ca = 18nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:
b = Probe material:
N (no probe / transducer)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
H (stainless steel, high grade 1.4539, A240 904L, B677)
D (duplex)
T (titanium)

A (Hastelloy)

cc = Process connection:
N (no probe / transducer)
A2 (ANSI 2” CL150)
D5 (DN50 PN16)
A3 (ANSI 3” CL150)
D8 (DN80 PN16)
May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
N (no probe / transducer)
1 (135 kHz)
2 (200 kHz)
8 (80 kHz)

f = Sealing material:
V (FKM - Viton)
E (EPDM – BUNA AP)
K (FKKM - Kalrez)
M (Metal)

g = Gas temperature:
N (no specification)
S (standard -70°C to 180°C)
H (high temp, -70°C to 280°C)
L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)

8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
B (IIB T4) Gas groups C and D

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-P Series (with two ultrasonic transducers in a twin probe). Models FLSE100-XT-P, F1a-P-cC-DB-fghBjklmn. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 51.2V, Isc = 77mA, Ca = 18nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

P – Probe, small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety

DB – Ex d [ia] IIB T4

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

B – NPT

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe
8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

Class I, Division 1, Group D, T4; Class I, Zone 1, Ex/AEx d[ia] IIA, T4;
Class I, Division 2, Group D, T4; Class I, Zone 2, Ex/AEx nA[ia] IIA, T4;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXS-D Series (with 2 loose ultrasonic transducers). Models FLSE100-EXS-D bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 60.8V, Isc = 92mA, Ca = 30nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection:
- N (no probe / transducer)
- A2 (ANSI 2” CL150)
- D5 (DN50 PN16)
- A3 (ANSI 3” CL150)
- D8 (DN80 PN16)
- May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
- May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 1 (135 kHz)
- 2 (200 kHz)
- 8 (80 kHz)

f = Sealing material:
- V (FKM - Viton)
- E (EPDM – BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)
- H (high temp, -70°C to 280°C)
- L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
A (IIA T4)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more than 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-S, -R, -M Series (with 2 loose ultrasonic transducers). Models FLSE100-XT-S, -R, -M, F1a-b-cC-DA-fghijklmn. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 60.8V, Isc = 92mA, Ca = 30nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.

Where:
a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

b = path configuration/transducer Type
M – Cross-Duct Medium power, intrinsically safe transducers
S – Cross-Duct Small power, intrinsically safe transducers
R – Rectangle small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
2 – R24, for rectangle, small power versions only
4 – R48 for rectangle, small power versions only
7 – R72 for rectangle, small power versions only
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety
DA – Ex d [ia] IIA T4 (types with electronics and intrinsically safe transducers only)

f = Sensor Electronics
Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

i = Cable entries
B – NPT
C – Connector, (only for versions with intrinsically safe transducers)

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe

8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more then 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.
4) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXPR-D Series (with two ultrasonic transducers in a twin probe). Models FLSE100-EXPR-D bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 60.8V, Isc = 92mA, Ca = 30nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:
b = Probe material:
N (no probe / transducer)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
H (stainless steel, high grade 1.4539, A240 904L, B677)
D (duplex)
T (titanium)
A (Hastelloy)

cc = Process connection:

N (no probe / transducer)
A2 (ANSI 2” CL150)
D5 (DN50 PN16)
A3 (ANSI 3” CL150)
D8 (DN80 PN16)
May be any 2 digit alphanumeric combination (process connection is not relevant to certification)

d = Transducer probe design:
May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
N (no probe / transducer)
1 (135 kHz)
2 (200 kHz)
8 (80 kHz)

f = Sealing material:
V (FKM - Viton)
E (EPDM – BUNA AP)
K (FKKM - Kalrez)
M (Metal)

g = Gas temperature:
N (no specification)
S (standard -70°C to 180°C)
H (high temp, -70°C to 280°C)
L (low temp, -200°C to 100°C)

h = Probe retraction:
N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection

3 (Class I, Div1/Div 2)

l = Gas group
A (IIA T4)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-XT-P Series (with two ultrasonic transducers in a twin probe). Models FLSE100-XT-P, F1a-P-cC-DA-fghBjklmn. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 70°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 60.8V, Isc = 92mA, Ca = 30nF, La = 0.03 mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

a = special using
F – Flare
P – Process
E – Emission
May be any other alphanumeric characters (describes special using – not critical to certification)

P – Probe, small power, intrinsically safe transducers

c = installation length
S – Standard
E – Extended, not for high power version
X – customized, for high power version the maximum length is limited to the standard length

C – CSA (NEC / CEC)

ee = Explosion safety
DA – Ex d [ia] IIA T4 (types with electronics and intrinsically safe transducers only)

f = Sensor Electronics

Y – Yes
N – No

g = Material electronics housing
A – Aluminum
B – Stainless Steel

h = Painting housing
May be any alphanumeric characters – not critical to certification

B – NPT

j = Tropicalizing PCBs
May be any alphanumeric character – not critical to certification

k = Ultrasonic transducer
4I – 42 kHz, intrinsically safe
8I – 80 kHz, intrinsically safe
1I – 135 kHz, intrinsically safe
XI – May be any other alphanumeric characters describes frequency, intrinsically safe

l = Transducer Material
A – Titanium
B – Stainless steel
C – Stainless Steel high grade
D – Nickel based alloy (e.g. HASTELLOY)
E – Duplex

m = Transducer contour
May be any alphanumeric character – not critical to certification

n = Transducer retraction
R – retractable
N – non-retractable

May be followed by additional alphanumeric characters, indicating non –certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) The ultrasonic sensors are manufactured from titanium. In rare cases, ignition sources due to impact and friction sparks could occur. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact or friction. (See clause 8.3 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11).

Class I, Division 1, Groups B, C and D, T6; Class I, Zone 1, Ex/AEx d[ia] IIB + H2 T6;
Class I, Division 2, Groups A, B, C and D, T6; Class I, Zone 2, Ex/AEx nA[ia] IIC, T6;

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXS-6 Series (with 2 loose ultrasonic transducers). Models FLSE100-EXS-6 bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 55°C. Enclosure Type 4, IP 65. Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.
Where:

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection:
- N (no probe / transducer)
- A2 (ANSI 2” CL150)
- D5 (DN50 PN16)
- A3 (ANSI 3” CL150)
- D8 (DN80 PN16)

d = Transducer probe design:
- May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 1 (135 kHz)
- 2 (200 kHz)
- 8 (80 kHz)

f = Sealing material:
- V (FKM - Viton)
- E (EPDM – BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)
- H (high temp, -70°C to 280°C)
- L (low temp, -200°C to 100°C)

h = Probe retraction:

N (not retractable)
R (retractable)

i = Material probe retraction flange
N (no retraction flange)
S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
L (low temperature carbon steel)
D (duplex)
T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
6 (IIC T6)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.
2) Conductors emerging from the explosionproof feed-through shall not be subjected to a pull force of more then 7 lbf (31 N).
3) Arrangement of the installation must insure that process temperature does not cause the operating temperature of the feed-through to exceed 110°C.

• Gas Velocity And Volume Flow Measuring Device, FLSE100-EXPR-6 Series (with two ultrasonic transducers in a twin probe). Models FLSE100-EXPR-6 bccdefg hi jklmn*. Input rated: 15-28 V dc, 500mA max CL2/SELV. Ambient temperature: -50°C to 55°C. Enclosure Type 4, IP 65. MWP 1600 kPa (16 bar). Associated intrinsically safe circuits when installed per manufacturers drawing E_41943. Entities: Ultrasonic Transducer circuits Voc = 38.9V, Isc = 59mA, Ca = 3.4nF, La = 0.03mH. Temperature sensor circuit Voc = 8.6V, Isc = 5mA, Ca = 5µF, La = 1mH.

Where:

b = Probe material:
- N (no probe / transducer)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- H (stainless steel, high grade 1.4539, A240 904L, B677)
- D (duplex)
- T (titanium)
- A (Hastelloy)

cc = Process connection:
- N (no probe / transducer)
- A2 (ANSI 2” CL150)
- D5 (DN50 PN16)
- A3 (ANSI 3” CL150)
- D8 (DN80 PN16)

d = Transducer probe design:
May be any alphanumeric digit (Describes cover over probe end – Not relevant to certification)

e = Transducer design:
- N (no probe / transducer)
- 1 (135 kHz)
- 2 (200 kHz)
- 8 (80 kHz)

f = Sealing material:
- V (FKM - Viton)
- E (EPDM – BUNA AP)
- K (FKKM - Kalrez)
- M (Metal)

g = Gas temperature:
- N (no specification)
- S (standard -70°C to 180°C)
- H (high temp, -70°C to 280°C)
- L (low temp, -200°C to 100°C)

h = Probe retraction:
- N (not retractable)
- R (retractable)

i = Material probe retraction flange
- N (no retraction flange)
- S (stainless steel 1.4571, 1.4404, 316L, 316Ti)
- L (low temperature carbon steel)
- D (duplex)

T (titanium)

j = Electronics:
N (no electronics)
1 (1 channel F135)
2 (2 channel F200)
8 (2 channel F80)

k = Explosionproof protection
3 (Class I, Div1/Div 2)

l = Gas group
6 (IIC T6)

m = Electronics housing
N (no electronics)
D (Ex d housing)

n = Housing material
N (no electronics)
A (aluminum)
S (stainless steel)

* = May be followed by additional alphanumeric characters, indicating non-certification-related options.

NOTES:
1) Maximum safe area voltage (Um) not to exceed 125V.

APPLICABLE REQUIREMENTS

CAN/CSA Standard C22.2 No. 0-M91 *(Reaffirmed 2006)*	General Requirements - Canadian Electrical Code, Part II
CSA Standard C22.2 No. 94.1-07 *(First Edition - September 2007)*	Enclosures for Electrical Equipment, Non-Environmental Considerations
CSA Standard C22.2 No. 94.2-07 *(First Edition - September 2007)*	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA Standard C22.2 No. 60529:05	Degrees of Protection Provided By Enclosures (IP Code)
CAN/CSA-C22.2 No. 61010-1-12 *(r 2017)*	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
CSA Standard C22.2 No. 30-M1986 *(Reaffirmed 2003)*	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CSA Standard C22.2 No. 157-92 *(Including update No. 2, June, 2003)*	Intrinsically Safe and Non-Incendive Equipment for Use in

	Hazardous Locations.
CSA Standard C22.2 No. 213-M1987 *(Reaffirmed 2008)*	Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA-E60079-0:02	Electrical apparatus for explosive gas atmospheres – Part 0: General requirements
CAN/CSA-C22.2 No. 60079-1:07	Electrical apparatus for explosive gas atmospheres — Part 1: Flameproof enclosures “d”
CAN/CSA-E60079-11:02 *(March 2002)*	Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety "i"
CAN/CSA-E60079-15:02	Electrical apparatus for explosive gas atmospheres - Part 15: Type of protection "n"
ANSI/UL Standard 50 *(Twelfth Edition, September 2007)*	Enclosures for Electrical Equipment, Non-Environmental Considerations
ANSI/UL Standard 50E *(First Edition, September 2007)*	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 61010-1-2016	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
ANSI/UL Standard 1203 *(Fourth Edition, September 2006)*	Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
ANSI/UL Standard 913 *(Sixth Edition, Dated August 8, 2002. With revisions through and including August 9, 2004)*	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
ANSI/ISA-12.12.01-2007	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Division 1 and 2 Hazardous (Classified) Locations
ANSI/UL 60079-0 *(Fourth Edition, dated August 15, 2005)*	Electrical Apparatus for Explosive Gas Atmospheres – Part 0: General Requirements
ANSI/UL 60079-1-2005 *(Fifth Edition, dated August 15, 2005)*	Electrical Apparatus for Explosive Gas Atmospheres – Part 1: Flameproof Enclosures “d”
ANSI/UL 60079-11 *(Second Edition, dated March 9, 2007)*	Electrical Apparatus for Explosive Gas Atmospheres – Part 11: Intrinsic Safety “i”
ANSI/UL 60079-15 *(First Edition, dated December 2, 2002)*	Electrical Apparatus for Explosive Gas Atmospheres – Part 15: Electrical Apparatus with Type of Protection “n”
ANSI/ISA 12.27.01-2003	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings are provided on a permanent adhesive label manufactured by TESA, designated PU-Acryatfolie Type 6930, which is suitable for indoor or outdoor use on polyester powder coated metal (Tiger Drylac series 59) surfaces, at a maximum service temperature of 125°C or higher. Label is affixed to the side of the housing.

- Manufacturers name: "SICK", or CSA Master Contract Number “215069”, adjacent to the CSA Mark in lieu of manufacturers name.
- Model number: As specified in the PRODUCTS section, above.
- Electrical ratings: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Manufacturing date in MMYY format, or serial number, traceable to month of manufacture.
- Enclosure ratings: As specified in the PRODUCTS section, above.
- The words “SINGLE SEAL” when specified in the PRODUCTS section, above.
- Rated maximum working pressure, as specified in the PRODUCTS section, above.
- Rated process temperature range, as specified in the PRODUCTS section, above (for models marked “SINGLE SEAL” only).
- The CSA Mark with “C” and “US” indicators, as shown on the Certificate of Conformity.
- Certificate number adjacent to CSA Monogram (09. 2161697X);
- Hazardous Location designation, as specified in the PRODUCTS section, above (may be abbreviated).
- Temperature code: As specified in the PRODUCTS section, above. *(Note: T5 and T6 temp codes optional)*
- The following words (on all models):
  - “SEAL REQUIRED WITHIN 18 INCHES”, or equivalent.
  - “WARNING – EXPLOSION HAZARD - Substitution of components may impair suitability for Class I, Division 2.”
- The following words (on models FLSE100-EXS, FLSE100-XT-S, -R, -M, FLSE100-EXPR and FLSE100-XT-P):
  - “[Ex ia]” and “ASSOCIATED EQUIPMENT”.
  - “WARNING: Substitution of components may impair intrinsic safety.”
  - “Install per drawing E_41943.”
  - “Maximum non-hazardous voltage not to exceed 125 V.”
- The following markings are provided on a separate adhesive label (same type as above) affixed to the cover of the housing, or cast into the cover with raised or depressed lettering:
  - The words “OPEN CIRCUIT BEFORE REMOVING COVER” or "KEEP COVER TIGHT WHILE

CIRCUITS ARE ALIVE".

DOCUMENTATION

An installation manual, data sheet, or control drawing shall be supplied with each unit, containing the following minimum marking information:

- Manufacturers name and address.
- A description of the intended use of the equipment.
- A statement that if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Instructions for lifting and carrying.
- Specification for the Weight (kg).
- Instructions for proper grounding of the equipment.
- A description of all input and output connections.
- Specification that the power to this equipment must be supplied by a source that is categorized as "CLASS 2" and "SELV" as specified in the Canadian Electrical Code, C22.1 and the National Electrical Code NFPA 70.
- It is recommended to add a statement in the documentation for the installation that the safety of any system incorporating the equipment is the responsibility of the assembler of the system.
- Explanation of symbols related to safety which are used on the equipment.
- ISO 3864 Symbol B.3.1 ⚠ or ISO 7000 symbol 0434 ⚠ (triangle with exclamation point) with a statement that the manual must be consulted in all cases where this symbol is marked, in order to find out the nature of the potential HAZARDS and any actions which have to be taken to avoid them.
- ISO 60417, Symbol 5019 ⏚ adjacent to the equipment ground (protective conductor) terminal.
- Identification and description of operating controls and their use in all operating modes.
- Instructions for cleaning and decontamination of the equipment.
- Instructions in sufficient detail to permit safe maintenance and inspection of the equipment, and to ensure continued safety of the equipment after the maintenance and inspection procedure.
- Specification of any parts which are required to be examined or supplied only by the manufacturer or his agent.
- Instructions on the following subjects shall be provided for service personnel, as necessary to permit safe servicing and continued safety of the equipment after servicing if the equipment is suitable to be serviced:
    - a) product-specific risks that may affect the service personnel.
    - b) protective measures for these risks.
    - c) verification of the safe state of the equipment after repair.
- The maximum piezo-electric energy released by impact on the ultrasonic sensors exceeds the limit for Gas Group IIC specified in Clause 10.7 of CAN/CSA C22.2 No. 60079-11 and ANSI/UL 60079-11. The user must ensure that the ultrasonic sensors are suitably protected against danger from impact.
- Specification for electrical ratings.
- Specification for ambient temperature rating.
- Specification for appropriate wiring to the equipment terminals, including definition of pin functions, and specification for wire gauge.
- Mounting and installation instructions, including dimensions.
- Specification for all process wetted and process seal materials with sufficient detail to facilitate appropriate equipment selection based upon compatibility with process gas or fluids.

- Specification for maximum process pressure rating.
- Specification for rated process temperature range (for models marked “SINGLE SEAL” only).
- The following words, or suitable equivalent (all models) regarding Class I, Division 2/Zone 2 installations:
  - This equipment is suitable for installation in Class I, Division 2, Group A, B, C, D hazardous locations or nonhazardous locations only.
  - Cet équipement est conçu pour être installé dans des zones dangereuses de classe I, division 2, groupe A, B, C, D ou dans des endroits non dangereux.
  - WARNING - Explosion Hazard. Do not connect or disconnect this equipment unless power has been removed or the area is known to be nonhazardous.
  - AVERTISSEMENT - Risque d'explosion. Ne connectez ou ne déconnectez pas cet équipement à moins que l'alimentation n'ait été coupée ou que la zone soit considérée comme non dangereuse.
  - WARNING - Explosion Hazard. Substitution of components may impair suitability for Class I, Division 2.
  - AVERTISSEMENT - Risque d'explosion. La substitution de composants peut nuire à la convenance pour la classe I, division 2.
- The following words, or suitable equivalent (for models FLSE100-EXS, FLSE100-XT-S, -R, -M, FLSE100-EXPR and FLSE100-XT-P):
  - “[Ex ia]”.
  - WARNING: Substitution of components may impair intrinsic safety.
  - AVERTISSEMENT: La substitution de composants peut nuire à la sécurité intrinsèque.
  - Maximum non-hazardous voltage not to exceed 125 V.
  - La tension maximale non dangereuse ne doit pas dépasser 125 V.

A copy of drawing E_41943 shall be provided with each model FLSE100-EXS, FLSE100-XT-S, -R, -M, FLSE100-EXPR and FLSE100-XT-P when shipped.

Supplement to Certificate of Compliance

Certificate: 2161697 **Master Contract:** 215069 (215069)

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

Product Certification History

Project	Date	Description
70184105	2018-08-27	Update report 2161697 to add new models FLSE100-XT series, including models FLSE100-XT-H, -S, -R, -M and -P. Current FLSE100 model series and new FLSE100-XT model series assessed for compliance under C22.2 No. 61010-1-12 and UL 61010-1 (Third Edition)
2161697	2009-06-12	Original Certification of FLSE100-EX, -EXRE, -EXS, and –EXPR series for hazardous locations.