



# Certificate of Compliance

**Certificate:** 80008850

**Master Contract:** 264512

**Project:** 80008850

**Date Issued:** 2019-11-13

**Issued to:** Emerson - Rosemount, Micro Motion Inc.  
12001 Technology Dr.  
Eden Prairie, Minnesota, 55344  
USA

**Attention:** Mr. Paul Schilke

*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*



**Issued by:**

David Malloy

## PRODUCTS

CLASS - C225206 - PROCESS CONTROL EQUIPMENT

CLASS - C225286 - PROCESS CONTROL EQUIPMENT-Certified to US Standards

Name: **8782 Slurry Transmitter**

Electrical Rating:

90 to 250 Vac, 50/60 Hz, 1.5 A, 120 VA; or

12 to 42 Vdc, 8.5 A, 120 W; or

12 to 48 Vdc, 8.5 A, 120 W

Output: 85 V<sub>peak</sub> max, 2.0 A max

Ambient Temperature: -40°C to +50°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgghh**

a = Revisions Level: A

b = Transmitter Mounting Options: W



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

c = Power Supply: 1 or 2  
d = Transmitter Outputs: A, B, F, P, D or M  
e = Conduit Entry: 1 or 2  
ff = Safety Approvals Code Option: **N5, N6, NH**  
gg = Any alpha-numeric characters representing non-certification related product options, up to fifty digits.  
hh = Display Option: M4 (Local Operator Interface), M5 (Local Display Only), *blank* (No Display)

Name: **MS Slurry Sensor**

Electrical Rating: 85 Vmax, 2.0 A  
Ambient Temperature: -50°C to +60°C (Stainless Steel)  
-29°C to +60°C (Carbon Steel)  
Enclosure Rating: IP66/IP68/IP69; Type 4X  
Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
Max Process Temperature: 177°C  
Rated Altitude: Up to 5000 m  
Dual Seal – When the DS option is selected.

Model: **MSaabcdefg hijklmnoopp**

aaa = Line size: 030 – 360 (3-36 inch)  
b = Rev level: A  
c = Mounting option: R (Remote)  
d = Conduit Entry: 1 (1/2" NPT), 2 (M20)  
e = Lining Material: Any one-digit alpha or numeric character  
f = Electrode Material: Any one-digit alpha or numeric character  
g = Electrode Type: Any one-digit alpha or numeric character  
h = Flange Material: Any one-digit alpha or numeric character  
i = Flange Type: Any one-digit alpha or numeric character  
j = Flange Rating: Any one-digit alpha or numeric character  
kk = Coil Housing Configuration: M0, M1, M2, or M4.  
ll = Safety Approval Option: **N5, N6, NH, K6**  
m = Options: Any alpha-numeric characters representing non-certification related product options, up to fifty-two digits in length.  
nn = Dual Seal Option: DS (Dual Seal) or *blank* (No sealing)  
oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steel Coil Wrapper), SH (316 SST Junction Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)  
pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The 8782 Slurry Transmitter and the MS Slurry Sensor are permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the 8707 Sensor which is separately certified under CSA Certificate 70081297.



**Certificate:** 80008850

**Master Contract:** 264512

**Project:** 80008850

**Date Issued:** 2019-11-13

---

3. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
4. The MS Slurry Sensor specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

CLASS - C225802 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations  
CLASS - C225882 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

**Class II, Division 1, Groups E, F, G; Class III; T5**  
**Class II, Division 2, Groups E, F, G; Class III; T5**

Name: **8782 Slurry Transmitter**

Electrical Rating:

90 to 250 Vac, 50/60 Hz, 1.5 A, 120 VA

12 to 42 Vdc, 8.5 A, 120 W

12 to 48 Vdc, 8.5 A, 120 W

Output: 85 V<sub>peak</sub> max, 2.0 A max

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgghh**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 1 or 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N5**

gg = Any alpha-numeric characters representing non-certification related product options, up to fifty digits.

hh = Display Option: M4 (Local Operator Interface), M5 (Local Display Only), *blank* (No Display)

Conditions of Acceptability:

1. The 8782 Slurry Transmitter is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the MS Slurry Sensor or the 8707 Sensor. The 8707 Sensor is separately certified under CSA Certificate 70081297.
3. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66 or IP69.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

**Ex ic tc IIIC T80°C Dc**  
**Zone 22, AEx ic tc IIIC T80°C Dc**

Name: **8782 Slurry Transmitter**

Electrical Rating:

12 to 42 Vdc, 8.5 A, 120 W or

12 to 48 Vdc, 8.5 A, 120 W

Output: 85 V max, 2.0 A max

Intrinsically safe when installed per 08782-0066.

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- o AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- o AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- o DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgghh**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N6**

gg = Any alpha-numeric characters representing non-certification related product options, up to fifty digits.

hh = Display Option: M4 (Local Operator Interface), M5 (Local Display Only), *blank* (No Display)

Conditions of Acceptability:

1. The 8782 Slurry Transmitter is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the MS Slurry Sensor or the 8707 Sensor. The 8707 Sensor is separately certified under CSA Certificate 70081297.
3. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
4. The 8782 Slurry Transmitter enclosure is manufactured from Aluminum Alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
5. The 8782 Slurry Transmitter is not capable of passing the 500 V isolation test on terminals to chassis due to integral transient protection. This must be considered upon installation.
6. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66 or IP69.

**Class II, Division 1, Groups E, F, G; Class III; T71°C ...T206°C**



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

**Name: MS Slurry Sensor**

Electrical Rating: 85 V<sub>peak</sub> max, 2.0 A max  
Ambient Temperature: -50°C to +60°C (Stainless Steel)  
-29°C to +60°C (Carbon Steel)  
Enclosure Rating: IP66/IP68/IP69; Type 4X  
Rated Altitude: Up to 5000 m  
Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
Max Process Temperature: See conditions of acceptability for maximum process temperatures.  
Dual Seal – When DS option selected

**Model: MSaaabcedefghijklmnoopp**

aaa = Line size: 030 – 360 (3-36 inch)  
b = Rev level: A  
c = Mounting option: R (Remote)  
d = Conduit Entry: 1 (1/2" NPT), 2 (M20)  
e = Lining Material: Any one-digit alpha or numeric character  
f = Electrode Material: Any one-digit alpha or numeric character  
g = Electrode Type: Any one-digit alpha or numeric character  
h = Flange Material: Any one-digit alpha or numeric character  
i = Flange Type: Any one-digit alpha or numeric character  
j = Flange Rating: Any one-digit alpha or numeric character  
kk = Coil Housing Configuration: M0, M1, M2, or M4.  
ll = Safety Approval Option: **N5**  
m = Options: Any alpha-numeric characters representing non-certification related product options, up to fifty-two digits in length.  
nn = Dual Seal Option: DS(Dual Seal) or *blank* (No sealing)  
oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steel Coil Wrapper), SH (316 SST Junction Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)  
pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The MS Slurry Sensor is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
3. Specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.
4. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
5. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one-time use only.
6. The sensor is not allowed to be thermally insulated.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

7. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

Hazardous Dust Locations (Class II, Division 1, Groups E, F, G; Class III)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T71°C	Carbon Steel	All	-29°C to 35°C	45°C
T86°C	Carbon Steel	All	-29°C to 60°C	60°C
T141°C	Carbon Steel	All	-29°C to 60°C	105°C
T206°C	Carbon Steel	All	-29°C to 60°C	177°C
T71°C	Stainless Steel	All	-50°C to 35°C	45°C
T86°C	Stainless Steel	All	-50°C to 60°C	60°C
T141°C	Stainless Steel	All	-50°C to 60°C	105°C
T206°C	Stainless Steel	All	-50°C to 60°C	177°C

**Ex tb IIIC T65°C ...T200°C Db**  
**Zone 21, AEx tb IIIC T65°C ...T200°C Db**

Name: **MS Slurry Sensor**

Electrical Rating: 85 Vpeak max, 2.0 A max  
 Intrinsically safe when installed per 08782-0066.  
 Enclosure Rating: IP66/IP68/IP69; Type 4X  
 Rated Altitude: Up to 5000 m  
 Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
 Process Temperature: See conditions of acceptability for maximum process temperatures.  
 Dual Seal – When DS option selected

Model: **MSaaabdefghijklmnoopp**

aaa = Line size: 030 – 360 (3-36 inch)  
 b = Rev level: A  
 c= Mounting option: R (Remote)  
 d = Conduit Entry: 1 (1/2" NPT), 2 (M20)  
 e = Lining Material: Any one-digit alpha or numeric character  
 f = Electrode Material: Any one-digit alpha or numeric character  
 g = Electrode Type: Any one-digit alpha or numeric character  
 h = Flange Material: Any one-digit alpha or numeric character  
 i = Flange Type: Any one-digit alpha or numeric character  
 j = Flange Rating: Any one-digit alpha or numeric character  
 kk = Coil Housing Configuration: M0, M1, M2, or M4.  
 ll = Safety Approval Options: Class Zone: **K6**  
 m = Options: Any alpha-numeric characters representing non-safety product options up to fifty-two digits in length.  
 nn = Dual Seal Option: DS (Dual Seal) or *blank* (No sealing)  
 oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steel Coil Wrapper), SH (316 SST Junction Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The MS Slurry Sensor is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
3. Specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.
4. Specialty paint options pp = V1 or V2 may be subject to electrostatic discharge. To avoid electrostatic charge build-up, do not rub the flowmeter with a dry cloth or clean with solvents.
5. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
6. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
7. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one-time use only.
8. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed
9. The sensor is not allowed to be thermally insulated.
10. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

Hazardous Dust Locations (Zone 21 Group IIIC)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T65°C	Carbon Steel	All	-29°C to 35°C	45°C
T80°C	Carbon Steel	All	-29°C to 60°C	60°C
T135°C	Carbon Steel	All	-29°C to 60°C	105°C
T200°C	Carbon Steel	All	-29°C to 60°C	177°C
T65°C	Stainless Steel	All	-50°C to 35°C	45°C
T80°C	Stainless Steel	All	-50°C to 60°C	60°C
T135°C	Stainless Steel	All	-50°C to 60°C	105°C
T200°C	Stainless Steel	All	-50°C to 60°C	177°C





**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

CLASS - C225804 - PROCESS CONTROL EQUIPMENT- Intrinsically Safe, Entity - For Hazardous Locations  
CLASS - C225884 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations  
- Certified to US Standards

**Class I, Division 2, Groups A, B, C, D; T4 with non-incendive field wiring**

Name: **8782 Slurry Transmitter**

Electrical Rating:

90 to 250 Vac, 50/60 Hz, 1.5 A, 120 VA

12 to 42 Vdc, 8.5 A, 120 W

12 to 48 Vdc, 8.5 A, 120 W

Output: 85 V<sub>peak</sub> max, 2.0 A max

Non-Incendive field wiring when installed per 08782-0061.

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- o AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- o AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- o DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgghh**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 1 or 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N5**

gg = Any alpha-numeric characters representing non-certification related product options, up to fifty digits.

hh = Display Option: M4 (Local Operator Interface), M5 (Local Display Only), *blank* (No Display)

Conditions of Acceptability:

1. The 8782 Slurry Transmitter is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the MS Slurry Sensor or 8707 Sensor. The 8707 Sensor is separately certified under CSA Certificate 70081297.
3. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66 or IP69.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

**Ex ec ic [ia Ga] IIC T4 Gc**  
**Class I, Zone 2, AEx ec ic [ia Ga] IIC T4 Gc**  
**Ex ic nA [ia Ga] IIC T4 Gc**  
**Class I, Zone 2, AEx ic nA [ia Ga] IIC T4 Gc**  
**Ex ic tc [ia Da] IIIC T80°C Dc**  
**Zone 22, AEx ic tc [ia Da] IIIC T80°C Dc**

Name: **8782 Slurry Transmitter**

Electrical Rating:

12 to 42 Vdc, 8.5 A, 120 W or

12 to 48 Vdc, 8.5 A, 120 W

Output: 85 V max, 2.0 A max

Intrinsically safe when installed per 08782-0066.

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgghh**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N6**

gg = Any alpha-numeric characters representing non-certification related product options, up to fifty digits.

hh = Display Option: M4 (Local Operator Interface), M5 (Local Display Only), *blank* (No Display)

Conditions of Acceptability:

1. The 8782 Slurry Transmitter is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the MS Slurry Sensor or 8707 Sensor. The 8707 Sensor is separately certified under CSA Certificate 70081297.
3. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
4. The 8782 Slurry Transmitter enclosure is manufactured from Aluminum Alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
5. The 8782 Slurry Transmitter is not capable of passing the 500 V isolation test on terminals to chassis due to integral transient protection. This must be considered upon installation.
6. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66 or IP69.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

**Class I, Division 2, Groups A, B, C, D; T6...T3 with non-incendive field wiring**

**Name: MS Slurry Sensor**

Electrical Rating: 85 V<sub>peak</sub> max, 2.0 A max  
Non-Incendive field wiring installed per 08782-0061.  
Ambient Temperature: -50°C to +60°C (Stainless Steel)  
-29°C to +60°C (Carbon Steel)  
Enclosure Rating: IP66/IP68/IP69; Type 4X  
Rated Altitude: Up to 5000 m  
Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
Max Process Temperature: See conditions of acceptability for maximum process temperatures.  
Dual Seal – When DS option selected

**Model: MSaabcdefghijklmnop**

aaa = Line size: 030 – 360 (3-36 inch)  
b = Rev level: A  
c = Mounting option: R (Remote)  
d = Conduit Entry: 1 (1/2" NPT), 2 (M20)  
e = Lining Material: Any one-digit alpha or numeric character  
f = Electrode Material: Any one-digit alpha or numeric character  
g = Electrode Type: Any one-digit alpha or numeric character  
h = Flange Material: Any one-digit alpha or numeric character  
i = Flange Type: Any one-digit alpha or numeric character  
j = Flange Rating: Any one-digit alpha or numeric character  
kk = Coil Housing Configuration: M0, M1, M2, or M4.  
ll = Safety Approval Option: **N5**  
m = Options: Any alpha-numeric characters representing non-certification related product options, up to fifty-two digits in length.  
nn = Dual Seal Option: DS (Dual Seal) or *blank* (No sealing)  
oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steel Coil Wrapper), SH (316 SST Junction Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)  
pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The MS Slurry Sensor is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
3. Specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.
4. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
5. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one-time use only.



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

6. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

Hazardous Gas Locations (Class I, Division 2, Groups A, B, C, D)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C

**Ex ec ic IIC T6...T3 Gc**  
**Class I, Zone 2, AEx ec ic IIC T6...T3 Gc**  
**Ex ic nA IIC T6...T3 Gc**  
**Class I, Zone 2, AEx ic nA IIC T6...T3 Gc**

**Name: MS Slurry Sensor**

Electrical Rating: 85 V<sub>peak</sub> max, 2.0 A max  
 Intrinsically safe when installed per 08782-0066  
 Ambient Temperature: -50°C to +60°C (Stainless Steel)  
 -29°C to +60°C (Carbon Steel)  
 Enclosure Rating: IP66/IP68/IP69; Type 4X  
 Rated Altitude: Up to 5000 m  
 Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
 Max Process Temperature: See conditions of acceptability for maximum process temperatures.  
 Dual Seal – When DS option selected

**Model: MSaabcdefghijklmnop**

aaa = Line size: 030 – 360 (3-36 inch)  
 b = Rev level: A  
 c = Mounting option: R (Remote)  
 d = Conduit Entry: 1 (1/2" NPT), 2 (M20)  
 e = Lining Material: Any one-digit alpha or numeric character  
 f = Electrode Material: Any one-digit alpha or numeric character  
 g = Electrode Type: Any one-digit alpha or numeric character



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

- h = Flange Material: Any one-digit alpha or numeric character
- i = Flange Type: Any one-digit alpha or numeric character
- j = Flange Rating: Any one-digit alpha or numeric character
- kk = Coil Housing Configuration: M0, M1, M2, or M4.
- ll = Safety Approval Option: **N6**
- m = Options: Any alpha-numeric characters representing non-certification related product options, up to fifty-two digits in length.
- nn = Dual Seal Option: DS (Dual Seal) or *blank* (No sealing)
- oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steel Coil Wrapper), SH (316 SST Junction Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)
- pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The MS Slurry Sensor is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
3. Specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.
4. Specialty paint options pp = V1 or V2 may be subject to electrostatic discharge. To avoid electrostatic charge build-up, do not rub the flowmeter with a dry cloth or clean with solvents.
5. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
6. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
7. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one-time use only.
8. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed
9. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

Hazardous Gas Locations (Zone 2, Group IIC)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C

**Ex eb ia IIC T6...T3 Ga/Gb**  
**Class I, Zone 1, AEx eb ia IIC T6...T3 Ga/Gb**

Name: **MS Slurry Sensor**

Electrical Rating: 85 Vpeak max, 2.0 A max  
 Intrinsically safe when installed per 08782-0066.  
 Enclosure Rating: IP66/IP68/IP69; Type 4X  
 Rated Altitude: Up to 5000 m  
 Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen  
 Process Temperature: See conditions of acceptability for maximum process temperatures.  
 Dual Seal – When DS option selected

Model: **MSaabcd efghijklmnoopp**

- aaa = Line size: 030 – 360 (3-36 inch)
- b = Rev level: A
- c = Mounting option: R (Remote)
- d = Conduit Entry: 1 (1/2" NPT), 2 (M20)
- e = Lining Material: Any one-digit alpha or numeric character
- f = Electrode Material: Any one-digit alpha or numeric character
- g = Electrode Type: Any one-digit alpha or numeric character
- h = Flange Material: Any one-digit alpha or numeric character
- i = Flange Type: Any one-digit alpha or numeric character
- j = Flange Rating: Any one-digit alpha or numeric character
- kk = Coil Housing Configuration: M0, M1, M2, or M4.
- ll = Safety Approval Options: Class Zone: **K6**
- m = Options: Any alpha-numeric characters representing non-safety product options up to fifty-two digits in length.
- nn = Dual Seal Option: DS(Dual Seal) or *blank* (No sealing)
- oo = Enhanced Corrosion Resistance Options: SJ (316 SST Junction Box and Carbon Steen Coil Wrapper), SH (316 SST Juncton Box and Coil Wrapper), or *blank* (Carbon Steel Junction Box and Coil Wrapper)
- pp = Specialty Paint: V1, V2 or *blank*

Conditions of Acceptability:

1. The MS Slurry Sensor is permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.





**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

2. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters or a transmitter with equal or less output ratings. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 70081467X.
3. Specialty paint options pp = V1 or V2 are not Type 4X Corrosion Resistant.
4. Specialty paint options pp = V1 or V2 may be subject to electrostatic discharge. To avoid electrostatic charge build-up, do not rub the flowmeter with a dry cloth or clean with solvents.
5. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
6. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
7. The MS Slurry Sensor contains nonconductive liners over the grounded tube. For process requiring EPL Ga, precautions shall be taken to avoid the liner being charged by the flow of nonconductive media.
8. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one-time use only.
9. When "Special Paint Systems" are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed
10. Warning - Ignition hazard. Process wetted parts may contain Titanium and Zirconium. For processes requiring EPL Ga and Gb rated equipment, suitability for use must be determined by the end-user to eliminate ignition hazard due to impact or friction.
11. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

Hazardous Gas Locations (Zone 0 or 1, Group IIC)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

**APPLICABLE REQUIREMENTS**

CAN/CSA C22.2 No. 61010-1-12	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements
CAN/CSA C22.2 No. 94.2-15	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA C22.2 No. 213-17	Nonincendive Electrical Equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CAN/CSA C22.2 No. 25-17	Enclosures for use in Class II, Division 1, Groups E, F, and G hazardous locations
CAN/CSA C22.2 No. 60079-0:15	Explosive Atmospheres – Part 0: Equipment – General Requirements
CAN/CSA C22.2 No. 60079-7:15	Explosive Atmospheres – Part 7: Equipment protection by increased safety “e” – Second Edition
CAN/CSA C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i” – Second Edition
CAN/CSA C22.2 No. 60079-15:16	Explosive Atmospheres – Part 15: Equipment Protection by Type of Protection “n”
CAN/CSA C22.2 No. 60079-26:16	Explosive Atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
CAN/CSA C22.2 No. 60079-31:15	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure “t”
CAN/CSA C22.2 No. 60529:16	Degrees of Protection Provided By Enclosures (IP Code)
ANSI/UL 61010-1-2018 (Third Edition)	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 1: General Requirements
ANSI/IEC 60529-2004 (Reaffirmed 2011)	Degrees of Protection Provided By Enclosures (IP Code)
ANSI/UL 50E-15 (Second Edition)	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 60079-0-2013 (Sixth Edition)	Explosive Atmospheres – Part 0: Equipment – General Requirements
ANSI/UL 60079-7-2017 (Fifth Edition)	Explosive Atmospheres – Part 7: Equipment Protection by Increased Safety “e”
ANSI/UL 60079-11-2014 (Sixth Edition)	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i”
ANSI/UL 60079-15-2013 (R2017) (Fourth Edition)	Explosive atmospheres – Part 15: Equipment protection by type of protection “n”
ANSI/UL 60079-26-2017 (Third Edition)	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
ANSI/UL 60079-31 (Second Edition)	Explosive Atmospheres – Part 31: Equipment Dust Ignition Protection by Enclosure “t”
ANSI/UL 121201 (Ninth Edition)	Nonincendive Electrical Equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
ANSI/UL 122701 (Third Edition)	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
ANSI/FM 3600 (2018)	Approval Standard for Electrical Equipment for Use in Hazardous (Classified) Locations – General Requirements





**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

ANSI/FM 3616 (2011)

Approval Standard for Dust-Ignitionproof Electrical Equipment General Requirements

## **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.

**Method of Marking:** An Adhesive Label is not used. The Method of Marking is achieved by applying a Stainless Steel Label. The label is attached with drive screws and/or a folded tab. The lettering is silk-screened, baked-on epoxy paint, stamped, and/or laser etched onto the label. Labels with more than one protection type are supplied with instructions informing the user they must suspend (destroy) markings that are not applicable when the device is installed.

All products:

- Manufacturer's name: "Emerson", or CSA Master Contract Number "264512", adjacent to the CSA Mark in lieu of manufacturer's name.
- Model designation: 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 MMY format, or serial number, traceable to year and month of manufacture.
- Enclosure ratings: As specified in the PRODUCTS section, above.
- The CSA Mark, with, or without the "C" and "US" designators, as shown on the Certificate of Conformity.
- The designation "CSA 19.80008850X"
- Hazardous Location designation: As specified in the PRODUCTS section, above (may be abbreviated).
- Method of Protection markings (Ex -- markings): As specified in the PRODUCTS section, above.
- Temperature code: As specified in the PRODUCTS section, above.

MS Slurry Sensor:

- Rated maximum working pressure, as specified in the PRODUCTS section, above.
- Rated process temperature range, as specified in the PRODUCTS section, above.

MS Slurry Sensor with the dual seal model option code nn = DS:






- The words "DUAL SEAL"



**Certificate:** 80008850  
**Project:** 80008850

**Master Contract:** 264512  
**Date Issued:** 2019-11-13

Other markings:

- ISO 3864 Symbol B.3.1  or ISO 7000 symbol 0434  (triangle with the exclamation point)
- Terminal Designations are adjacent to each field wiring terminal.
- The designation “GND” adjacent to the equipment ground terminal.
- ISO 60417, Symbol 5019  adjacent to the equipment ground (protective conductor) terminal.
- ISO 60417, Symbol 5031  adjacent to the DC input terminal rating.
- ISO 60417, Symbol 5032  adjacent to the AC input terminal rating.
- Replacement fuse markings; Fuse type(s) and rating(s) (in volts and amperes), adjacent to the fuseholder(s).

8782 Slurry Transmitter shall be marked with the following or technically equivalent warnings:

- AFTER DE-ENERGIZING WAIT 10 MINUTES BEFORE OPENING
- AVERTISSEMENT – APRÈS MISE HORS TENSION, ATTENDRE 10 MINUTES AVANT L'OUVERTURE
- EXPLOSION HAZARD DO NOT REMOVE FUSE UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
- RISQUE D'EXPLOSION NE PAS RETIRER LE FUSIBLE SAUF SI L'ALIMENTATION A ÉTÉ DÉBRANCHÉE OU SI LA ZONE N'EST PAS DANGEREUSE.
- WARNING POTENTIAL ELECTROSTATIC CHARGING HAZARD SEE INSTRUCTIONS
- AVERTISSEMENT RISQUE DE CHARGE ÉLECTROSTATIQUE POTENTIEL CONSULTER LES INSTRUCTIONS
- WARNING DIVIDER REQUIRED FOR EX i INSTALLATION
- DIVISEUR D'AVERTISSEMENT REQUIS POUR L'INSTALLATION EX
- SHOCK HAZARD. SHUT OFF POWER BEFORE SERVICING. DO NOT OPERATE WITHOUT POWER COMPARTMENT COVER
- AVERTISSEMENT. DANGER S'ELECTROCUTION. COUPER L'ALIMENTATION AVANT DE FARE L'ENTRECIEN. NE PAS FAIRE FONCTIONNER SANS LE COUVERCLE DU MONITEUR.

8782 Slurry Transmitter shall be additionally marked as follows:

- INSTALL PER DRAWING 08782-0061 (For units installed per the Class/Div System)
- INSTALL PER DRAWING 08782-0066 (For units installed per the Zone System)
- ONLY CU SUPPLY WIRE SUITABLE FOR 85°C (185°F) AND RATED TO AT LEAST 300 VOLTS.

MS Slurry Sensor shall be marked with the following or technically equivalent warnings:

- AFTER DE-ENERGIZING WAIT 10 MINUTES BEFORE OPENING
- AVERTISSEMENT – APRÈS MISE HORS TENSION, ATTENDRE 10 MINUTES AVANT L'OUVERTURE
- WARNING: EXPLOSION HAZARD ELECTRODE EXPOSED TO PROCESS.
- ADVERTISSEMENT: RISQUE D'EXPLOSION ELECTRODE EXPOSEE AU PROCEDE.
- WARNING POTENTIAL ELECTROSTATIC CHARGING HAZARD SEE INSTRUCTIONS
- AVERTISSEMENT RISQUE DE CHARGE ÉLECTROSTATIQUE POTENTIEL CONSULTER LES INSTRUCTIONS



**Certificate:** 80008850

**Master Contract:** 264512

**Project:** 80008850

**Date Issued:** 2019-11-13

---

- WARNING: UNDERSTAND MANUAL BEFORE OPERATING
- AVERTISSEMENT - GARDER LE COUVERCLE BIEN FERME TANT QUE LES CIRCUITS SONT SOUS TENSION

MS Slurry Sensor shall be additionally marked as follows:

- AMBIENT TEMP  $\leq 50^{\circ}\text{C}$  REQUIRE ALL WIRING TO BE RATED AT LEAST  $90^{\circ}\text{C}$
- PROCESS TEMP  $\leq 140^{\circ}\text{C}$  REQUIRE ALL WIRING TO BE RATED AT LEAST  $125^{\circ}\text{C}$
- INSTALL PER DRAWING 08782-0061 (For units installed per the Class/Div System)
- INSTALL PER DRAWING 08782-0066 (For units installed per the Zone System)

Division 2 rated 8782 Slurry Transmitter and MS Slurry Sensor shall be marked with the following or technically equivalent warnings:

- WARNING – EXPLOSION HAZARD – DO NOT CONNECT WHILE THE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NONHAZARDOUS.
- AVERTISSEMENT - RISQUE D'EXPLOSION. NE PAS DEBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, A MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.



## *Supplement to Certificate of Compliance*

**Certificate:** 80008850

**Master Contract:** 264512

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

### **Product Certification History**

---

<b>Project</b>	<b>Date</b>	<b>Description</b>
80008850	2019-11-13	Original Certification of the MS Slurry Sensor and the 8782 Slurry Transmitter