



Certificate of Compliance

Certificate: 2352860

Master Contract: 205557

Project: 80220619

Date Issued: 2025-02-18

Issued To: Endress+Hauser Conducta GmbH & Co. KG
Dieselstraße 24
70839 Gerlingen,
Baden-Württemberg,
Germany

Attention: Henryk Hofmann

Issued by:

Gordon Neuroth



PRODUCTS

- CLASS 2258 03** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-incendive Systems - For Hazardous Locations
- CLASS 2258 83** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-incendive Systems - For Hazardous Locations - Certified to US Standards

Class I, Division 2, Groups A, B, C and D:

Field housing transmitters

- 1) Liquiline, type xM442-abcdefghij. Field-housing transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 55VA (AC Version) or 24Vac, 50/60Hz, 55VA, 24Vdc, 22Watts (24Vac/dc Version); One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 set of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA). Temperature Code T4A. $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$. Provides non-incendive field



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wiring connection to field sensors when installed per control drawing 961006059. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC

xM442 Approved Order code options.

a = approval = CD

b = sensor input = M1, M2, N1, N2

c = communication = A1, A2, A3, A4, B6, B7, B8, B9, CA, CB, CC, CD, CE, CF, CG, CH, CJ, CK

d = additional features = FA, FD, F0, F2, F4

e = power supply = 1, 6, 7

f = cable entry = 0, 1, 2

g = cable entry set = A, B

h = Edge connectivity = UC, UE

i = Edge functionality = UP

j = *** Non-Critical for Hazloc

- 2) Liquiline, type xM444-abcdefghijkl, xM448-abcdefghil. Field-housing transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 73VA (AC Version) or 24Vdc, max. 68Watts (24Vdc Version); One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA). Temperature Code T4A, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +55^{\circ}\text{C}$, and $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (for selected packages). Provides non-incendive field wiring connection to field sensors when installed per control drawing 961006059. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC

xM444 Approved Order code options.

a = approval = CD

b = sensor input = M2, M4, N2, N4

c = digital communication = A, B, C, D, J, 0, 1, 2, 3

d = analog output = A0, A1, A3, A5, A7

e = additional features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4

f = power supply = 1, 6

g = cable entry = 0, 1, 2

h = female jack Fieldbus communication = BA, BB, BC

i = cable entry set = A, B

j = Edge connectivity = UC, UE

k = Edge functionality = UP

l = *** Non-Critical for Hazloc

xM448 Approved Order Code options:



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a = approval = CD

b = digital communication = A, B, C, D, J, 0, 1, 2, 3

c = digital sensor output/input = 2A6, 2A7, 6AA, 6A1, 6A3, 6A5, 6A6, 6A7, 6A8, 8A2, 8A3, 8A4, 8A5

d = power supply = 1, 6

e = cable entry housing, sensor = AA, AB, AC, AD, AE, AF

f = female jack Fieldbus communication = BA, BB, BC

g = cable entry set + female jack = A, B

h = Edge connectivity = UC, UE

i = Edge functionality = UP

j = *** Non-Critical for Hazloc

- 3) Liquiline, type xM44P-abcdefghijklmno (FIH option). Input rated 100-230Vac, 50/60Hz, max. 73VA (AC Version) or 24Vdc, max. 68 Watts (24Vdc Version). One set of relay contacts rated 250V ac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps. 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA); Temperature Code T4A, $-20^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$; Provides non-incendive field wiring connection to field sensors when installed per control drawing 961006059. External power supply is in hazardous location. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC

xM44P (FIH) Approved Order Code options:

a = approval = CD

b = housing = FIH

c = optional sensor input = P1, P2, S1

d = sensor input = M0, M2, M4, N2, N4

e = digital communication = A, B, C, D, J, 0, 1, 2, 3

f = analog output = A0, A1, A3, A5, A7

g = additional features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4

h = power supply = 1, 6

i = cable entry housing = 0, 1, 2, 5

j = female jack Fieldbus communication = BA, BB, BC

k = cable entry set = A, B, E

l = calibration = A, B

m = Edge connectivity = UC, UE

n = Edge functionality = UP

o = *** Non-Critical for Hazloc

Rail mount transmitters:

- 1) Liquiline, type xM442R-abcdehij, Rail-mount transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 55VA (AC Version) or 24Vac, 50/60Hz, 55VA, 24Vdc, 22Watts (24Vac/dc Version). One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP,



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Modbus, EtherNet/IP, PROFINET), 1 set of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA). Temperature Code T4A, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$. Provides non-incendive field wiring connection to field sensors when installed per control drawing 961006059. Installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.

Note: Prefix x = C or O or OC

xM442R Approved Order code options

a = Approval = CD

b = Sensor Input = M1, M2

c = Communication = A1, A2, A3, A4, B6, B8, CA, CC, CE, CG, CJ

d = Additional Features = FA, FD, F0, F2, F4

e = Power Supply = 1, 6, 7

h = Edge Connectivity = UC, UE

i = Edge Functionality = UP

j = *** Non-Critical for Hazloc

- 2) Liquiline, type xM444R-abcdefjkl, xM448R-abcdhij, Rail-mount transmitter for liquid analysis. Input rated, 24Vdc, max. 50Watts. One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA). Temperature Code T4A, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +55^{\circ}\text{C}$ and $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (for selected packages). Provides non-incendive field wiring connection to field sensors when installed per control drawing 961006059. Installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.

Note: Prefix x = C or O or OC

xM444R Approved Order code options

a = Approval = CD

b = Sensor Input = M2, M4

c = Digital Communication = A, B, C, D, J, 0, 1, 2, 3

d = Analog Output = A0, A1, A3, A5, A7

e = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4

f = Power Supply = 1, 6

j = Edge Connectivity = UC, UE

k = Edge Functionality = UP

l = *** Non-Critical for Hazloc

xM448R Approved Order Code options:

a = Approval = CD

b = Digital Communication = A, B, C, D, J, 0, 1, 2, 3

c = Digital Sensor; Output; input = 2A6, 2A7, 6AA, 6A1, 6A3, 6A5, 6A6, 6A7, 6A8, 8A2, 8A3, 8A4, 8A5



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d = Power Supply = 1, 6
h = Edge Connectivity = UC, UE
i = Edge Functionality = UP
j = *** Non-Critical for Hazloc

- 3) Liquiline, type xM44P-abcdefghijklmno (DIN option). Input rated 24Vdc, max. 50 Watts. One set of relay contacts rated 250V ac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA); Temperature Code T4A, $0^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$; Provides non-incendive field wiring connection to field sensors when installed per control drawing 961006059. Installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.

Note: Prefix x = C or O or OC

xM44P (DIN) Approved Order Code options:

a = Approval = CD
b = Housing = DIN
c = Optical Sensor Input = P1, P2, S1
d = Sensor Input = M0, M2, M4, N2, N4
e = Digital Communication = A, B, C, D, J, 0, 1, 2, 3
f = Analog Output = A0, A1, A3, A5, A7
g = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4
h = Power Supply = 1, 6
l = Calibration = A, B
m = Edge Connectivity = UC, UE
n = Edge Functionality = UP
o = *** Non-Critical for Hazloc

Approved cabinets and sensors for use with the transmitters above

- 1) External graph display, cabinet 71185295 for xM442R, xM444R, xM448R; ambient temperature -20 to 60°C ; IP66/ Type 4X enclosure. Installed as per control drawing 961006059.
- 2) xCS142D membrane-covered sensor, connected to transmitter xM44x(R) with a measuring cable xYK10 or xYK20 with a maximum cable length of 100m. Temperature Code T6, $-5^{\circ}\text{C} \leq T_{\text{amb}} \leq +55^{\circ}\text{C}$. Input voltage V_{max} : 5.7V, Input power: 180mW.
- 3) Memosens Sensors: xCS50D, xCS51D, xCS55D, xCS58D, xCS120D, connected to transmitter xM44x(R) with a measuring cable xYK10 or xYK20 with a maximum cable length of 100m. Temperature Code T6, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$. Input voltage V_{max} : 3.5V, Input power: 15mW.

Conditions of Acceptability:



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- Power to rail mount controllers xM444R, xM448R, and xM44P to be supplied by power supplies certified for Class I, Division 2, GP A, B, C and D.
- The xM442R, xM444R, xM448R, and xM44P (DIN) version shall be completely installed inside a suitable Type rated enclosure, appropriate for the end application, and acceptable to the Authority Having Jurisdiction (AHJ).

Class I, Division 2, Groups A, B, C and D, T4A;

Associated Intrinsically Safe outputs to Class I Division 1, Group A, B, C, D [Ex ia Ga] IIC

Field housing transmitters

- 1) Liquiline, type xM442-abcdefghijkl, Field-housing transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 55VA (AC Version) or 24Vdc, 50/60Hz, 55VA, 24Vdc, 22Watts (24Vac/dc Version); One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts), two 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), Temperature Code T4A. $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$. Provides associated Intrinsically Safe connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i) when installed per control drawing 961006059. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC

xM442 Approved Order Code options:

a = Approval = CL

b = Sensor Input = M2

c = Communication = CA, CB, CC, CD, CE, CF, CG, CH, CJ, CK

d = Additional Features = F0

e = Power Supply = 1, 6, 7

f = Cable Entry = 0, 1, 2

g = cable entry set = A, B

h = Edge Connectivity = UC, UE

i = Edge Functionality = UP

j = *** Non-Critical for Hazloc

- 2) Liquiline, type xM444-abcdefghijkl, xM448-abcdefghijkl, Field-housing transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 73VA (AC Version) or 24Vdc, max. 68Watts (24Vdc Version); One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24Vdc (max. 50mA). Temperature Code T4A, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$. Provides associated Intrinsically Safe connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i) when installed per control drawing 961006059. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC



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xM444 Approved Order Code options:

a = Approval = CL
b = Sensor Input = M2, M4
c = Digital Communications = A, B, C, D, J, 0, 1, 2, 3
d = Analog Output = A0, A1, A3, A5, A7
e = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4
f = Power Supply = 1, 6
g = Cable Entry = 0, 1
h = Female Jack Fieldbus Communication = BA, BB, BC
i = Cable Entry Set = A, B
j = Edge Connectivity = UC, UE
k = Edge Functionality = UP
l = *** Non-Critical for Hazloc

xM448 Approved Order Code options:

a = Approval = CL
b = Digital Communication = A, B, C, D, J, 0, 1, 2, 3
c = Digital Sensor; Output; Input = 2A6, 6AA, 6A1, 6A3, 6A5, 6A6, 6A7, 6A8
d = Power Supply = 1, 6
e = Cable Entry Housing, Sensor = AA, AB
f = Female Jack Fieldbus Communication = BA, BB, BC
g = Cable Entry Set+Female Jack = A, B
h = Edge Connectivity = UC, UE
i = Edge Functionality = UP
j = *** Non-Critical for Hazloc

- 3) Liquiline, type xM44P-abcdefghijklmno (FIH option). Input rated 100-230Vac, 50/60Hz, max. 73VA (AC Version) or 24Vdc, max. 68 Watts (24Vdc Version). One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps. two or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24V DC (max. 50mA); Temperature Code T4A, $-20^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$; Provides associated Intrinsically Safe connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i) when installed per control drawing 961006059. Enclosure Type 4X, IP66/67.

Note: Prefix x = C or O or OC

xM44P (FIH) Approved Order Code options:

a = Approval = CL
b = Housing = FIH
c = Optical Sensor Input = P1, P2, S1
d = Sensor Input = M2
e = Digital Communication = A, B, C, D, J, 0, 1, 2, 3



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f = Analog Output = A0, A1, A3, A5, A7
g = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4
h = Power Supply = 1, 6
i = Cable Entry Housing = 0, 1, 2, 5
j = Female Jack Fieldbus Communication = BA, BB, BC
k = Cable Entry Set = A, B, E
l = Calibration = A, B
m = Edge Connectivity = UC, UE
n = Edge Functionality = UP
o = *** Non-Critical for Hazloc

Rail mount transmitters:

- 1) Liquiline, type xM442R-abcdehij, Rail-mount transmitter for liquid analysis. Input rated 100-230Vac, 50/60Hz, 55VA (AC Version) or 24Vac, 50/60Hz, 55VA, 24Vdc, 22Watts (24Vac/dc Version). One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) two 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), Temperature Code T4A, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$. Provides associated Intrinsically Safe connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i) when installed per control drawing 961006059. Enclosure is installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.

Note: Prefix x = C or O or OC

xM442R Approved Order Code options:

a = Approval = CL
b = Sensor Input = M2
c = Communication = CA, CC, CE, CG, CJ
d = Additional Features = F0
e = Power Supply = 1, 6, 7
h = Edge Connectivity = UC, UE
i = Edge Functionality = UP
j = *** Non-Critical for Hazloc

- 2) Liquiline, type xM444R-abcdefjkl, xM448R-abcdehij, Rail-mount transmitter for liquid analysis. Input rated 24Vdc, max. 50Watts. One set of relay contacts rated 250Vac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, 2 or 4 4-20mA signal circuits, probe and sensor connections all SELV, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24Vdc (max. 50mA). Temperature Code T4A, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$. Provides associated Intrinsically Safe connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i)-when installed per control drawing 961006059. Enclosure is installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.



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Note: Prefix x = C or O or OC

xM444R Approved Order Code options:

a = Approval = CL
b = Sensor Input = M2, M4
c = Digital Communication = A, B, C, D, J, 0, 1, 2, 3
d = Analog Output = A0, A1, A3, A5, A7
e = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4
f = Power Supply = 1, 6
j = Edge Connectivity = UC, UE
k = Edge Functionality = UP
l = *** Non-Critical for Hazloc

xM448R Approved Order Code options:

a = Approval = CL
b = Digital Communication = A, B, C, D, J, 0, 1, 2, 3
c = Digital Sensor; Output; Input = 2A6, 6AA, 6A1, 6A3, 6A5, 6A6, 6A7, 6A8
d = Power Supply = 1, 6
h = Edge Connectivity = UC, UE
i = Edge Functionality = UP
j = *** Non-Critical for Hazloc

- 3) Liquiline, type xM44P-abcdefghijklmno (DIN option). Input rated 24Vdc, max. 50 Watts. One set of relay contacts rated 250V ac, 0.5 Amps (alarm contacts) another 2 or 4 sets rated 250Vac, 2 Amps, two or 4 4-20mA signal circuits, probe and sensor connections all, communication (HART, PROFIBUS DP, Modbus, EtherNet/IP, PROFINET), 1 or 2 sets of 2 digital inputs and 2 digital outputs (passive), with auxiliary voltage 24Vdc (max. 50mA); Temperature Code T4A, $0^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$; Provides associated I.S. connection to field sensors from installed 2DS Ex I modules (terminals 87i, 88i, 97i, 98i) when installed per control drawing 961006059 Enclosure is installed in a cabinet connected to an external graph display, cabinet 71185295 in hazardous location. External power supply is in hazardous location.

Note: Prefix x = C or O or OC

xM44P (DIN) Approved Order Code options:

a = Approval = CL
b = Housing = DIN
c = Optical Sensor Input = P1, P2, S1
d = Sensor Input = M2
e = Digital Communication = A, B, C, D, J, 0, 1, 2, 3
f = Analog Output = A0, A1, A3, A5, A7
g = Additional Features = FA, FE, FF, FG, FH, FI, FK, FM, F0, F2, F4
h = Power Supply = 1, 6
l = Calibration = A, B



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m = Edge Connectivity = UC, UE
n = Edge Functionality = UP
o = *** Non-Critical for Hazloc

Approved cabinets, sensors, and associated apparatus modules for use with the transmitters above

- 1) External graph display, cabinet 71185295 for xM442R, xM444R, xM448R; ambient temperature -20 to 60°C; IP66/ Type 4X enclosure. Installed as per control drawing 961006059.
- 2) xCS142D membrane-covered sensor, connected to transmitter xM44x(R) with a measuring cable xYK10 or xYK20 with a maximum cable length of 100m. Temperature Code T6, $-5^{\circ}\text{C} \leq T_{\text{amb}} \leq +55^{\circ}\text{C}$. Input voltage V_{max} : 5.7V, Input power: 180mW.
- 3) Memosens Sensors: xCS50D, xCS51D, xCS55D, xCS58D, xCS120D, connected to transmitter xM44x(R) with a measuring cable xYK10 or xYK20 with a maximum cable length of 100m. Temperature Code T6, $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$. Input voltage V_{max} : 3.5V, Input power: 15mW.
- 4) 2DS Ex I modules
Intrinsically safe connections (sensor 1 and sensor 2) - light blue connection terminals: 87i, 88i, 97i, 98i per terminal connection when installed per drawing 961006059.

Allowed sensors/connections in Zone 0/Div 1:

- a. xLS50D sensors
- b. Cables xYK10 or xYK20 with the following sensors with a max cable length of 100m.
 1. Digital Memosens Sensors per listed CSA report 80021719
 2. Digital Memosens 2.0 sensors listed per CSA 80021490
 3. xYP03D

Conditions of Acceptability:

- Power to rail mount controllers xM444R, xM448R, and xM44P to be supplied by power supplies certified for Class I, Division 2, Groups A, B, C and D.
- The xM442R, xM444R, xM448R, and xM44P (DIN) version shall be completely installed inside a suitable Type rated enclosure, appropriate for the end application, and acceptable to the Authority Having Jurisdiction (AHJ).



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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
ANSI/UL 61010-1-2012 Third Edition	Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements
CSA C22.2 No. 94.2-15	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 50E-2015 Second Edition	Enclosures for Electrical Equipment, Environmental Considerations
*CAN/CSA C22.2 No. 60079-0:19	Explosive atmospheres – Part 0: Equipment – General requirements
*ANSI/UL 60079-0:2019, Ed 7th	Explosive atmospheres – Part 0: Equipment – General requirements
*CAN/CSA C22.2 No. 60079-11:14 (R2018)	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
*ANSI/UL 60079-11-2013 Ed 6 th	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
C22.2 No. 213-17 3 rd Ed (R 2022) + Update 1(2018) + Update 2(2019) +Update 3(2021)	Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations
UL 121201-2019 9 th Edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Division 1 and 2 Hazardous (Classified) Locations.

*Applicable to 2DS-Ex i modules

MARKINGS

As per CSA Descriptive report

Notes:



Supplement to Certificate of Compliance

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*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
80220619	2025-02-18	Updating the report 2352860 to introduce the new Edge Module for Transmitter type CM442/CM444/CM448/CM442R/CM444R/CM448R/CM44P, to remove xCS142D Chloromax Sensor and for some corrections from previous assessments.
80158246	2023-12-28	Evaluation to update cCSAus report # 2352860 to assess the following: <ol style="list-style-type: none">1. Add alternate enclosure materials2. Add Bluetooth module FWBT13. Add alternate connectors4. Update to CSA C22.2 No. 213-17/ UL 121201 9th Edition per certification notice Hazardous Locations Products No. 28
80094716	2022-04-26	Evaluation for update of CSA report 2352860 to assess the following changes: <ol style="list-style-type: none">1. Add alternate transformer: PREMO, X-18792-003R12. Add new sensor card: 2DS Ex-i module3. Use the Phoenix connector FKC 2,5 / 4-ST-5,08 for modules BASE2-X, AOR, FA2R1 and FA4R1.4. Addition of KSAM2 electronics to sensors.
80069885	2021-03-12	Update to cCSAus report # 2352860 for intrinsically safe and non-incendive Memosens Sensors to add a new ozone sensor model xCS58D using existing electronics, a new membrane, electrolyte and housing material POM.
80008137	2019-11-04	Update CSA report 2352860 for the following modifications: <ol style="list-style-type: none">1. Introduction of new model xM44P with PCB module FSIP1 photometer (PEM-module) and FSDG3 SPECTRO (SEM-module)2. Minor changes that affect xM44x.xM44xR, xM44P3. Addition of alternate relays



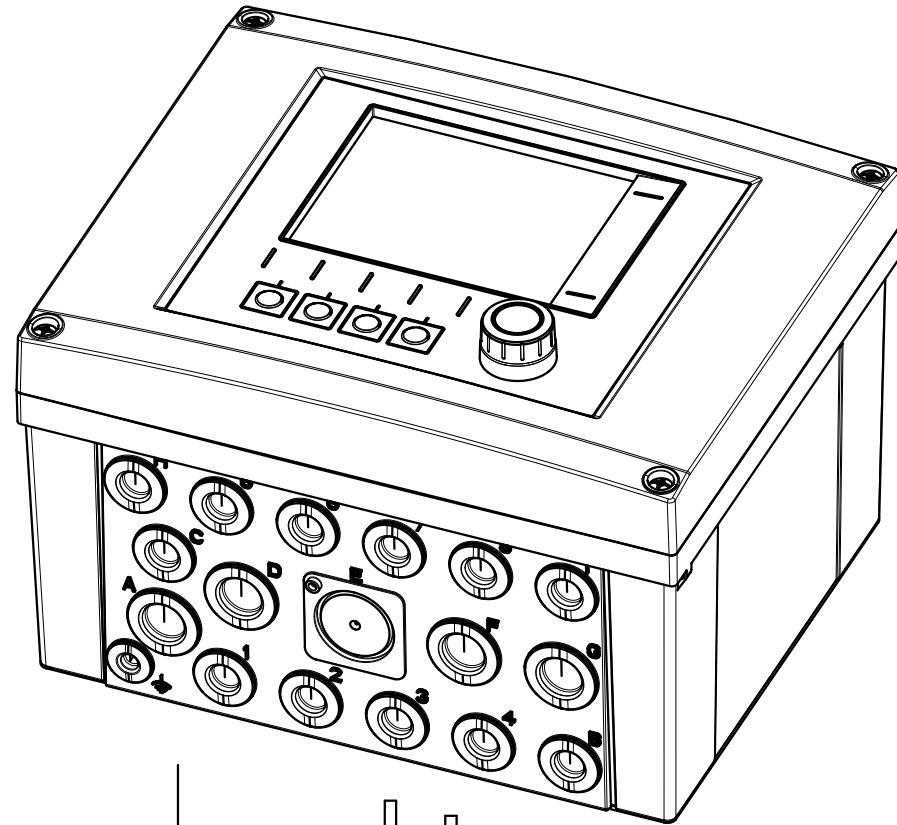
70208479	2019-02-25	Update CSA report 2352860 to include two new type of Disinfection sensor models xCS5xD and xCS120D for NI Class I Div. 2, Grps ABCD, T6. $0\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$. Additionally some minor modifications to the CMR44x (R) transmitter components.
70155895	2018-02-23	Update CSA report 2352860 to include additional Liquiline models; xM442R, xM444/8 & xM444/8R, additional sensor models; xPS171D, xLS82D, xOS81D, xCS142D & CLS50D and an external display for railmount model to use in Class I, Division 2. In addition, assessment of minor modifications to the existing electronics and update of applicable standards.
70100152	2016-10-19	Update to CSA report 2352860 to include an alternate SD card holder and subsequent changes to certification drawings.
70046559	2016-03-03	Update to include several minor drawing changes.
2556622	2012-12-24	Update to include Hart and Fieldbus modules and other minor circuitry changes.
2391256	2011-02-04	Update to include addition of I/O modules.
2352860	2010-11-10	CSAc/us Non-Incendive Certification of Liquidline Transmitter, type CM442 Series to Class I, Div. 2, Groups A, B, C & D.

ISO 13715 GPS-FUNDAMENTALS
ISO 1101 GPS-DIMENSIONAL TOLERANCING
ISO 1302 GPS-DRAWING INDICATIONS
ISO 13715 GPS-FUNDAMENTALS
ISO 1101 GPS-DIMENSIONAL TOLERANCING
ISO 1302 GPS-DRAWING INDICATIONS
ISO 13715 GPS-FUNDAMENTALS
ISO 1101 GPS-DIMENSIONAL TOLERANCING
ISO 1302 GPS-DRAWING INDICATIONS

B

 Hazardous location
NI Class I, Division 2, Groups A-D T4A

Non hazardous location



xM44P-CDFIH
xM442-CD
xM444-CD
xM448-CD

B

x ... C or O or OC

Conduits

Power supply 100... 230 V AC or 24 V AC/DC

Relay 230 V AC or 24 V DC

Digital/ analog input/ output 0/4 mA... 20 mA
Communication (Ethernet/ Fieldbus/ RS485)

Fixed cable sensors with Memosens protocol,
max. cable length 100 m (330 ft), including,
but not limited to, the following sensor types:
CAS51D (Nitrate)
CUS51D (Turbidity)

All below listed digital sensors,
digital cables (max. 100m/330ft)
and digital sensor simulators
certified for hazardous location IS/
NI Class I, Division 1 or 2 may be
connected to the non-incendive
Field Wiring Terminals 87, 88, 97,
98 and used in hazardous location
NI Class I, Division 2, Groups A-D
T4A only.

B

Note:
Installation shall be in accordance with the NEC/ CEC.

THIS APPARATUS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A-D OR UNCLASSIFIED
LOCATIONS

WARNING: EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN
CLASS I, DIVISION 2.
AVERTISSEMENT: RISQUE D'EXPLOSION - LA SUBSTITUTION DES COMPOSANTS PEUT RENDRE CE MATERIEL
INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2.

B

WARNING: EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED
OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
AVERTISSEMENT: RISQUE D'EXPLOSION - AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU
S'ASSURER QUE L'EMPLACEMENT EST DESIGNÉ NON DANGEREUX.

WARNING: EXPOSURE TO SOME CHEMICALS MAY DEGRADE THE SEALING
PROPERTIES OF MATERIALS USED IN THE FOLLOWING DEVICES: Power
Relay Takamisawa JS12N-K, TE Connectivity RY612012,
Zettler AZ69601CB12DEA or Zettler AZ69601CE12DEA.

WARNING: EXPLOSION HAZARD - DO NOT SERVICE ELECTRICAL
CONNECTIONS (CONNECT OR DISCONNECT RELAYS, REMOVE OR
REPLACE PLUG-IN MODULES) UNLESS POWER HAS BEEN DISCONNECTED
OR THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS
OF FLAMMABLE GASES OR VAPORS.

Digital Memosens Sensors
Certificate/Report 80021719

Digital Memosens 2.0 Sensors
Certificate/ Report 80021490.

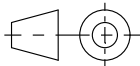

xYP03D according to
Certificate/Report 80021719

Digital oxygen sensor COS61D
Certificate/ Report 70220753
(only CSA US)



Endress+Hauser

Endress+Hauser Conducta GmbH+Co. KG
70839 Gerlingen, Germany

Refer to protection notice ISO 16016 Classification internal			Scale 1:2	Tolerance				
CM44 Control Drawing xM44x (R)			Notif. no. 118342	Designed	03.03.2022	TameggerR		
			Drawing chng.			26.04.2023	LoefflerD	
			Number of changes 24 			Welding contr.		
			Status Approved			Approval contr.		
			Released			26.04.2023	LoefflerD	
Zulassungszeichnung xM44x (R)			No. of document 961006059		Version B	Doc. part 000		
			Weight - kg				Volume - dm3	
Material			SAP material no.			Format DIN A3	Sheet 1/4	

ISO 13715 GPS-FUNDAMENTALS
ISO 14001 GPS-DIMENSIONAL TOLERANCING
ISO 14005 GPS-DRAWING INDICATIONS
ISO 10132 GPS-INDICATION OF SURFACE TEXTURE

B Hazardous location
NI Class 1, Division 2, Groups A-D T4A

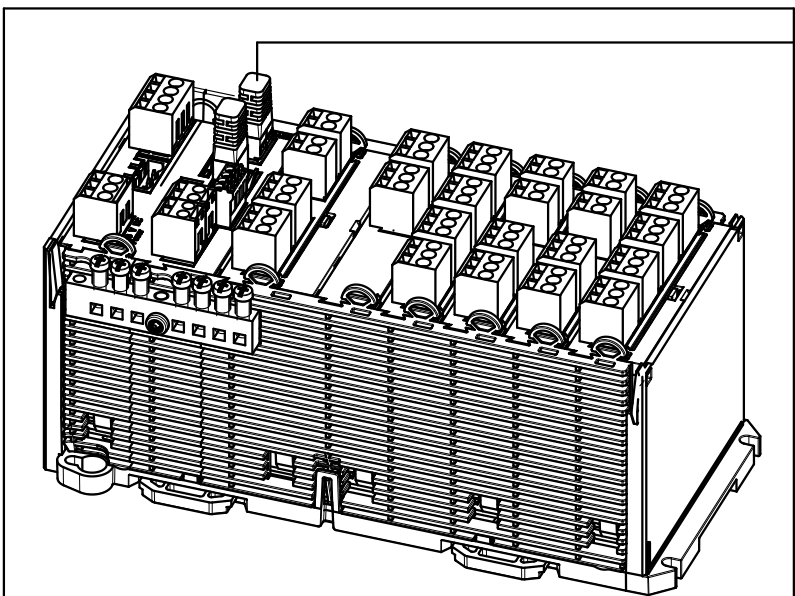
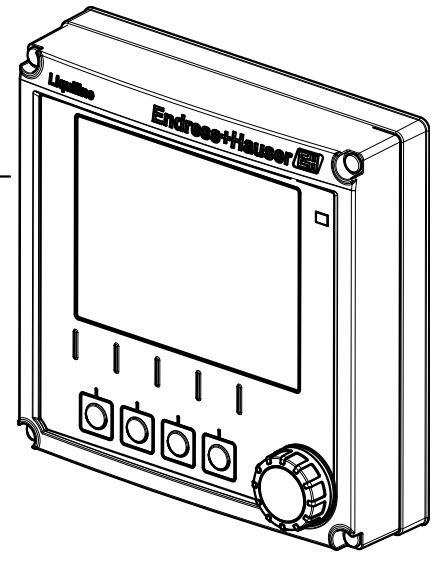
Non hazardous location

B
xM44P-CDDIN
(with external Class 1, DIV 2
certified power supply)
xM442R-CD
xM444R-CD
(with external Class 1, DIV 2
certified power supply)
xM448R-CD
(with external Class 1, DIV 2
certified power supply)

x ... C or O or OC

Prior use the external
graph. display, cabinet
(71185295) must be
installed at the cabinet
door.

The CL 1, DIV 2
external graph.
display, cabinet
(71185295) may be
connected to all CL 1,
DIV 2 approved
xM44xR transmitter.



Suitable enclosure
See conditions of use

Conduits

- Power supply 100... 230 V AC or 24 V AC/DC
- Relay 230 V AC or 24 V DC
- Digital/ analog input/ output 0/4 mA... 20 mA
Communication (Ethernet/ Fieldbus/ RS485)
- Fixed cable sensors with Memosens protocol,
max. cable length 100 m (330 ft), including,
but not limited to, the following sensor types:
CAS51D (Nitrate)
CUS51D (Turbidity)

All below listed digital sensors,
digital cables (max. 100m/330ft)
and digital sensor simulators
certified for hazardous location IS/
NI Class 1, Division 1 or 2 may be
connected to the non-incendive
Field Wiring Terminals 87, 88, 97,
98 and used in hazardous location
NI Class 1, Division 2, Groups A-D
T4A only.

Note:
Installation shall be in accordance with the NEC/ CEC.

THIS APPARATUS IS SUITABLE FOR USE IN CLASS 1, DIVISION 2, GROUPS A-D OR UNCLASSIFIED LOCATIONS

WARNING: EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN CLASS 1, DIVISION 2.
AVERTISSEMENT: RISQUE D'EXPLOSION - LA SUBSTITUTION DES COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1, DIVISION 2.

WARNING: EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
AVERTISSEMENT: RISQUE D'EXPLOSION - AVANT DE DECONNECTER L'EQUIPEMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DESIGNÉ NON DANGEREUX.

WARNING: EXPOSURE TO SOME CHEMICALS MAY DEGRADE THE SEALING PROPERTIES OF MATERIALS USED IN THE FOLLOWING DEVICES: Power Relay Takamisawa JS12N-K, TE Connectivity RY612012, Zettler AZ69601CB12DEA or Zettler AZ69601CE12DEA.

WARNING: EXPLOSION HAZARD - DO NOT SERVICE ELECTRICAL CONNECTIONS (CONNECT OR DISCONNECT RELAYS, REMOVE OR REPLACE PLUG-IN MODULES) UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS.



THE DEVICE MUST BE INSTALLED IN A SUITABLE CABINET OR ENCLOSURE WHICH PERMITS ACCESS BY TOOL OR KEY ONLY.
L'INSTRUMENT DOIT ÊTRE INSTALLÉ DANS UN BOÎTIER OU UNE ARMOIRE ÉLECTRIQUE OU L'ACCÈS EST POSSIBLE SEULEMENT AVEC UN OUTIL OU AVEC UNE CLE.

B
Digital Memosens Sensors
Certificate/Report 80021719

Digital Memosens 2.0 Sensors
Certificate/ Report 80021490.

xYP03D according to
Certificate/Report 80021719

Digital oxygen sensor COS61D
Certificate/ Report 70220753
(only CSA US)

<div>Endress+Hauser</div> <div>Endress+Hauser Conducta GmbH+Co. KG</div> <div>70839 Gerlingen, Germany</div>	Refer to protection notice ISO 16016 Classification internal			Scale 1:2	Tolerance	
	CM44 Control Drawing xM44x (R)	Zulassungszeichnung xM44x (R)		Notif. no. 118342	Designed 03.03.2022 TameggerR	
					Drawing chng. 26.04.2023 LoefflerD	
				Number of changes 24	Welding contr.	
				Status Approved	Approval contr. 26.04.2023 AmroH	
					Pressure contr. Released 26.04.2023 LoefflerD	
		No. of document 961006059	Version B	Doc. part 000		
		Weight - kg	Volume - dm3			
	Material	SAP material no.	Format DIN A3	Sheet 2/4		

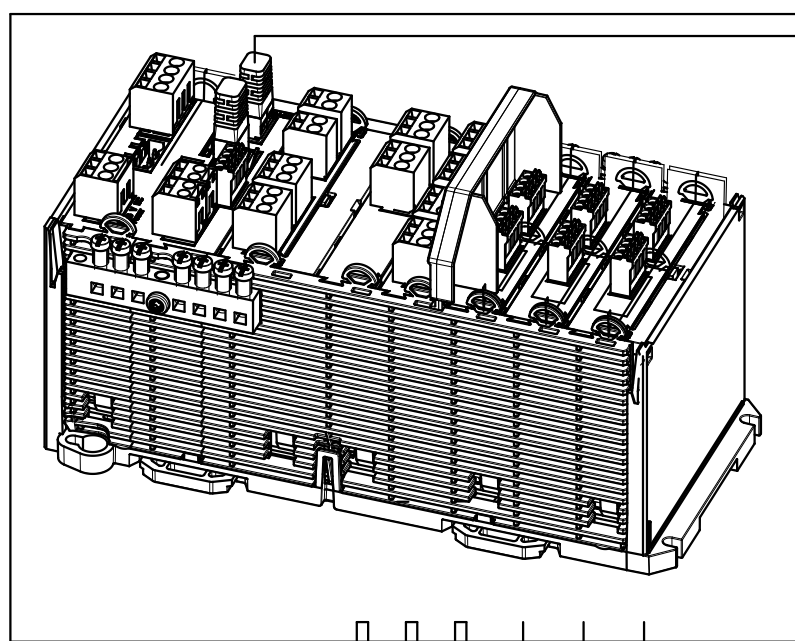
ISO 13715 GPS-FUNDAMENTALS ISO 101 GPS-DIMENSIONAL TOLERANCING ISO 14405 GPS-DRAWING INDICATIONS ISO 10135
EDGES OF UNDEFINED SHAPE GPS-GEOMETRICAL TOLERANCING GPS-INDICATION OF SURFACE TEXTURE

B Hazardous Location DIV 2

B Class I, Division 2, GP A-D T4A
Transmitter with associated IS connection to digital Sensor: Class I, Division 1, Zone 0, 1, 2

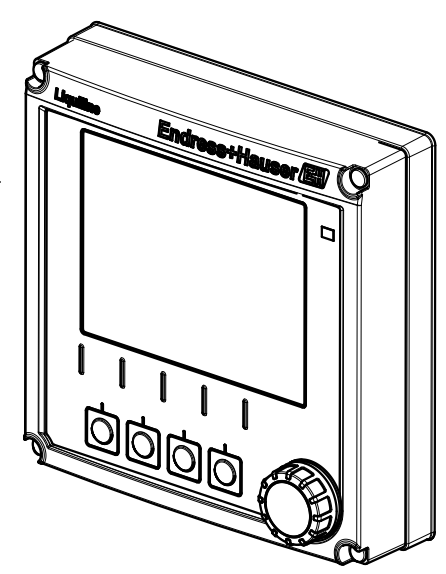
- B**
- xM44P-CLDIN (with external Class I, DIV 2 certified power supply)
 - xM442R-CL (with external Class I, DIV 2 certified power supply)
 - xM444R-CL (with external Class I, DIV 2 certified power supply)
 - xM448R-CL (with external Class I, DIV 2 certified power supply)
 - x ... C or O or OC

Prior use the external graph. display, cabinet (71185295) must be installed at the cabinet door.



B

The CL I, DIV 2 external graph. display, cabinet (71185295) may be connected to all CL I, DIV 2 approved xM44xR transmitter.



Suitable enclosure
See conditions of use

Conduits

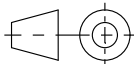


Non-Hazardous Location

- Power supply 100... 230 V AC or 24 V AC/DC
- Relay 230 V AC or 24 V DC
- Digital/ analog input/ output 0/4 mA... 20 mA
- Communication (Ethernet/ Fieldbus/ RS485)

SPECIFIC CONDITIONS OF USE:

1. The xM44x shall be completely installed inside a suitable Type rated enclosure that provides ingress protection appropriate for the end application, and acceptable to the authority having Jurisdiction (AHJ)
2. The environmental data must be taken into account - see the operating instructions of the manufacturer.

Endress+Hauser
Endress+Hauser Conducta GmbH+Co. KG
70839 Gerlingen, Germany

Refer to protection notice ISO 16016 Classification		Scale		Tolerance	
		1:2			
CM44 Control Drawing xM44x (R) Zulassungszeichnung xM44x (R)		Notif. no.		Designed 03.03.2022 TameggerR	
		118342		Drawing chng. 26.04.2023 LoefflerD	
		Number of changes		Welding contr.	
		24 		Approval contr. 26.04.2023 AmroH	
		Status		Pressure contr.	
		Approved		Released 26.04.2023 LoefflerD	
		No. of document		Version	Doc. part
961006059		B	000		
		Weight - kg		Volume - dm3	
Material	SAP material no.		Format	Sheet	
			DIN A3	3/4	

B Hazardous Location DIV 1

Cables xYK10 and xYK20 (max. 100m/330ft) acc. to Certificate: 80021719; Report 80021719 certified for hazardous Location IS Class I, Division 1 or 2 may be connected to intrinsic safe Field Wiring Terminals 87, 88, 97, 98 Po ≤ 180 mW

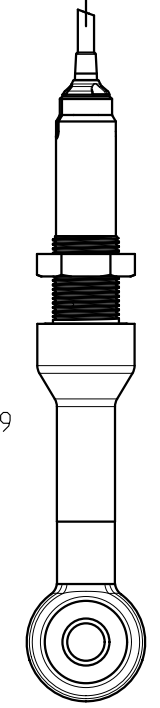
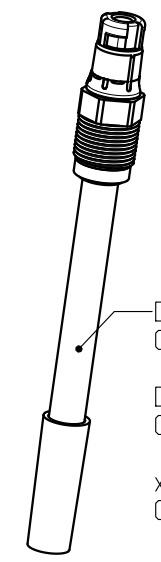
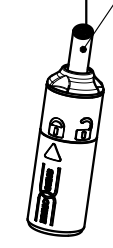
xLS50D according to Certificate: 80021719; Report 80021719

Digital Memosens Sensors Certificate/Report 80021719

Digital Memosens 2.0 Sensors Certificate/ Report 80021490.

xYP03D according to Certificate/Report 80021719

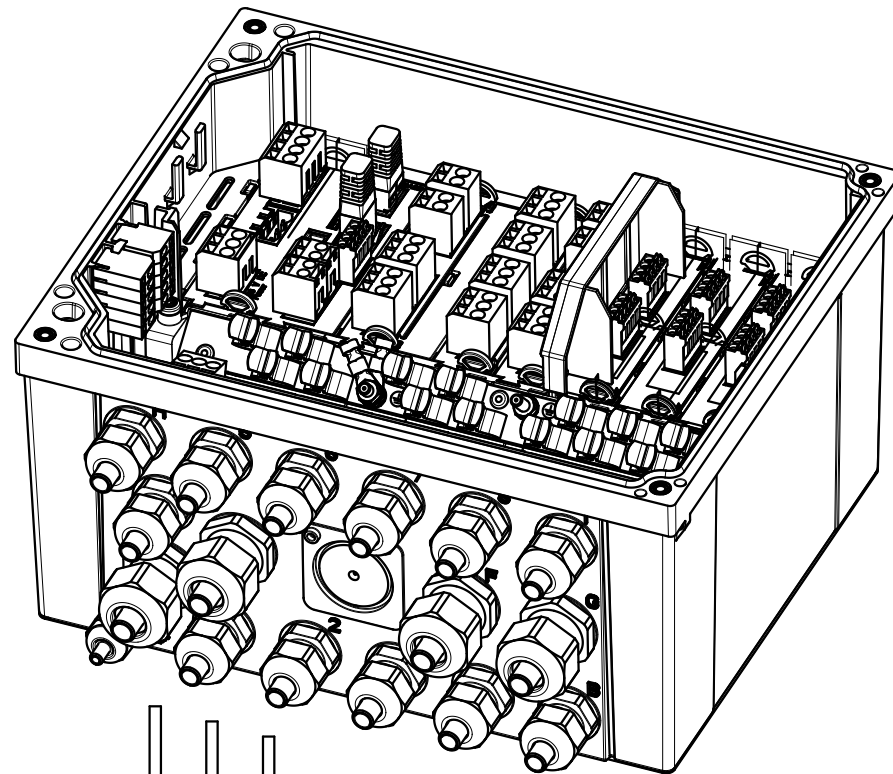
B



Hazardous Location DIV 2

Class I, Division 2, GP A-D T4A
Transmitter with associated IS connection to digital Sensor: Class I, Division 1, Zone 0, 1, 2

xM44P-CLFIH
xM442-CL
xM444-CL
xM448-CL
x stands for C, O or OC



Conduits

WARNINGS:
See page 1

Non-Hazardous Location

- Power supply 100... 230 V AC or 24 V AC/DC
- Relay 230 V AC or 24 V DC
- Digital/ analog input/ output 0/4 mA... 20 mA
- Communication (Ethernet/ Fieldbus/ RS485)

SPECIFIC CONDITIONS OF USE:

The environmental data must be taken into account
- see the operating instructions of the manufacturer.

Hazardous Location DIV 1

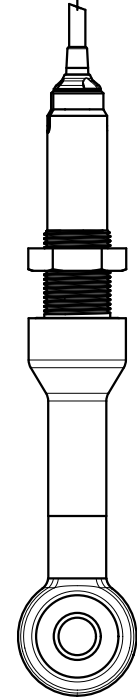
Cables xYK10 and xYK20
(max. 100m/330ft) acc.
to Certificate: 80021719;
Report 80021719
certified for hazardous
Location IS Class I
Division 1 or 2 may be
connected to intrinsic safe
Field Wiring Terminals
87, 88, 97, 98
 $P_o \leq 180 \text{ mW}$



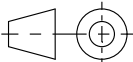

Digital Memosens Sensors
Certificate/Report 80021719

Digital Memosens 2.0 Sensors
Certificate / Report 80021490.

xYP03D according to
Certificate/Report 80021719



xLS50D
according to
Certificate:
80021719;
Report 80021719

<div>Endress+Hauser</div> <div>Endress+Hauser Conducta GmbH+Co. KG</div> <div>70839 Gerlingen, Germany</div>	Refer to protection notice ISO 16016 Classification	internal		Scale 1:2	Tolerance		
	CM44 Control Drawing xM44x (R)	Notif. no. 118342		Designed	03.03.2022	TameggerR	
		Drawing chng.		26.04.2023	LoefflerD		
		Number of changes 24 		Welding contr.			
		Approval contr.		26.04.2023	AmroH		
		Status Approved		Pressure contr.			
	Released		26.04.2023	LoefflerD			
	Zulassungszeichnung xM44x (R)	No. of document 961006059			Version B	Doc. part 000	
Weight - kg		Volume - dm3					
Material	SAP material no.			Format DIN A3	Sheet 4/4		