Product Certifications
00825-0200-4408, Rev AW
September 2024

Rosemount™ 5408 and 5408:SIS Level Transmitters

Non-Contacting Radar with HART® or FOUNDATION™ Fieldbus Protocol

ROSEMOUNT™

EMERSON

1 Product certifications

Rev 4.62

1.1 European directive information

A copy of the EU Declaration of Conformity can be found at the end of the document. The most recent revision of the EU Declaration of Conformity can be found at Emerson.com/Rosemount.

1.2 Safety Instrumented Systems (SIS)

SIL 3 Capable: IEC 61508 certified for use in safety instrumented systems up to SIL 3 (Minimum requirement of single use (1oo1) for SIL 2 and redundant use (1oo2) for SIL 3).

1.3 Ordinary location certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

1.4 Environmental conditions

Table 1-1: Environmental Conditions (Ordinary Location and Low Voltage Directive (LVD))

Type	Description
Location	Indoor or outdoor use, wet
Maximum altitude	6562 ft. (2000 m)
Ambient temperature	-76 to 158 °F (-60 to 70 °C)
Electrical supply	12-42.2 Vdc (HART®) 9-32 Vdc (Fieldbus)
Mains supply voltage fluctuations	Safe at ±10%
Overvoltage category	II
Pollution degree	2

1.5 Telecommunication compliance

Measurement principle

Frequency Modulated Continuous Wave (FMCW), 26 GHz

Maximum output power

-5 dBm (0.32 mW)

Frequency range

24.05 to 27.0[(1)] GHz (TLPR)

24.05 to 26.5 GHz (LPR)

LPR (Level Probing Radar) equipment are devices for measurement of level in the open air or in a closed space. Model option “OA”. Hardware Version Identification Number (HVIN) is 5408L.

TLPR (Tank Level Probing Radar) equipment are devices for measurement of level in a closed space only (i.e metallic, concrete or reinforced fiberglass tanks, or similar enclosure structures made of comparable attenuating material). Hardware Version Identification Number (HVIN) is 5408T.

1.6 FCC

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC ID K8C5408L (for LPR)

(1) 26.5 GHz in Australia, New Zealand, and Russia.

K8C5408T (for TLPR)

1.7 IC

This device complies with Industry Canada’s licence-exempt RSS standard. Operation is subject to the following conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. The installation of the LPR/TLPR device shall be done by trained installers in strict compliance with the manufacturer’s instructions.
4. The use of this device is on a “no-interference, no-protection” basis. That is, the user shall accept operations of high-powered radar in the same frequency band which may interfere with or damage this device. However, devices found to interfere with primary licensing operations will be required to be removed at the user’s expense.
5. Devices operating under TLPR conditions (i.e. not operating in “Open Air” Mode) shall be installed and operated in a completely enclosed container to prevent RF emissions, which can otherwise interfere with aeronautical navigation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux conditions suivantes:

1. l'appareil ne doit pas produire de brouillage.
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
3. L’installation d’un dispositif LPR ou TLPR doit être effectuée par des installateurs qualifiés, en pleine conformité avec les instructions du fabricant.
4. Ce dispositif ne peut être exploité qu'en régime de non-brouillage et de non-protection, c'est-à-dire que l'utilisateur doit accepter que des radars de haute puissance de la même bande de fréquences puissent brouiller ce dispositif ou même l'endommager. D'autre part, les capteurs de niveau qui perturbent une exploitation autorisée par licence de fonctionnement principal doivent être enlevés aux frais de leur utilisateur.

5. Un dispositif visé comme TLPR doit être installé et exploité dans un réservoir entièrement fermé afin de prévenir les rayonnements RF qui pourraient autrement perturber la navigation aéronautique.

Certificate 2827A-5408L (for LPR)
2827A-5408T (for TLPR)

1.8 Radio Equipment Directive (RED) 2014/53/EU

This device complies with ETSI EN 302 372 (TLPR), ETSI EN 302 729 (LPR) and EN 62479.

For the receiver test that covers the influence of an interferer signal to the device, the performance criterion has at least the following level of performance according to ETSI TS 103 361 [6].

- Performance criterion: measurement value variation Δd over time during a distance measurement
- Level of performance: Δd ≤ ±2 mm

LPR (Level Probing Radar), model code "OA"

Install at a separation distance of >4 km from Radio Astronomy sites, unless a special authorization has been provided by the responsible National regulatory authority (a list of Radio Astronomy sites may be found at www.craf.eu).

Between 4 km to 40 km around any Radio Astronomy site the LPR antenna height shall not exceed 15 m height above ground.

TLPR (Tank Level Probing Radar)

The device must be installed in closed tanks. Install according to requirements in ETSI EN 302 372 (Annex E).

1.9 Installing equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

1.10 USA

1.10.1 E5 Explosionproof, Dust-Ignitionproof

Certificate FM-US FM16US0010X

Standards	FM Class 3600 – 2022; FM Class 3615 – 2022; FM Class 3810 – 2021; ANSI/ISA 60079-0 – 2013; ANSI/UL 60079-1 – 2015; ANSI/UL 60079-26 – 2017; ANSI/ISA 60079-31 – 2015; ANSI/NEMA 250 – 1991; ANSI/IEC 60529 – 2004, ANSI/ISA 12.27.01:2011
Markings	XP CL I, DIV 1, GRPS A, B, C, D T6...T2 DIP CLII/III, DIV 1, GRPS E, F, G; T6...T3 CL I Zone 0/1 AEx db IIC T6...T2 Ga/Gb Zone 21 AEx tb IIIC T85 °C...T250 °C Db (-40 °C ≤ Ta ≤ +70 °C)[2]; Type 4X/IP6X SINGLE SEAL

Specific Conditions of Use (X):

1. Flamepath joints are not for repair. Contact the manufacturer.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.
5. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP6X and/or Type 4X rating. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for cable entries and blanking plugs. See Instruction Manual on application requirements.
6. Install per Control drawing D7000002-885.
7. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.

(2) Other temperature ranges may apply, see Specific Conditions of Use (X).

8. Display glass shall be positioned in such a way as to minimize the risk of mechanical impact.
9. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-2: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Division Gas groups:		
T2	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 250 °C
T3	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 195 °C
T4	-40 °C ≤ Ta ≤ 70° C	-40 °C to 130 °C
T5	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 95 °C
T6	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 80 °C
Division Dust groups:		
T3	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 160 °C
T4	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 130 °C
T5	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 95 °C
T6	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 80 °C

Table 1-3: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Zone Gas groups:		
T2	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 250 °C
T3	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 195 °C
T4	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 130 °C
T5	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 95 °C
T6	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 80 °C
Zone Dust groups:		
T250°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 250 °C
T200°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 195 °C
T135°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 130 °C
T100°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 95 °C
T85°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 80 °C

1.10.2 I5 Intrinsic Safety, Non-Incendive

Certificate FM-US FM16US0010X

Standards FM Class 3600 – 2022; FM Class 3610 – 2021; FM Class 3611 – 2021; FM Class 3810 – 2021; ANSI/UL 60079-0 – 2013; ANSI/UL 60079-11 – 2014; ANSI/UL 60079-26 – 2017; ANSI/NEMA 250 – 1991; ANSI/IEC 60529 – 2014; ANSI/ISA 12.27.01:2011

Markings IS CL I, II, III DIV 1, GRPS A-G T4...T2

NI CL I, DIV 2, GRPS A-D T4...T2

S CL II, III DIV 2, GRPS E-G T4...T3

CL I Zone 0 AEx ia IIC T4...T2 Ga

CL I Zone 0/1 AEx ib IIC T4...T2 Ga/Gb

Zone 20 AEx ia IIIC T85°C...T250°C Da

-60 (-55) °C ≤ Ta ≤ +70 °C

When installed per Control Drawing D7000002-885

SINGLE SEAL

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-4: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
Division Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Division Dust groups:		
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 160 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T5	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T6	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

Table 1-5: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
Zone Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Zone Dust groups:		
T250°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T200°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T135°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T100°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T85°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

1.10.3 IE FISCO

Certificate FM-US FM16US0010X

Standards FM Class 3600 – 2022; FM Class 3610 – 2021; FM Class 3611 – 2021; FM Class 3810 – 2021; ANSI/UL 60079-0 – 2013; ANSI/UL 60079-11 – 2014; ANSI/UL 60079-26 – 2017; ANSI/NEMA 250 – 1991; ANSI/IEC 60529 – 2004; ANSI/ISA 12.27.01:2011

Markings IS CL I, II, III DIV 1, GRPS A-G T4...T2
NI CL I, DIV 2, GRPS A-D T4...T2
S CL II, III DIV 2, GRPS E-G T4...T3
CL I Zone 0 AEx ia IIC T4...T2 Ga
CL I Zone 0/1 AEx ib IIC T4...T2 Ga/Gb
Zone 20 AEx ia IIIC T85°C...T250°C Da
-55 °C ≤ Ta ≤ +70°C
When installed per Control Drawing D7000002-885
SINGLE SEAL

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process

connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.

5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.

6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-6: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Division Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Division Dust groups:		
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 160 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T5	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T6	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

Table 1-7: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Zone Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Zone Dust groups:		
T250°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T200°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T135°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T100°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T85°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

1.11 Canada

1.11.1 E6 Explosionproof, Dust-Ignitionproof

Certificate FM-C FM16CA0011X

Standards CSA C22.2 NO. 0.4-17:2017(R2022), CSA C22.2 NO. 0.5-16:2016 (R2020), CSA C22.2 No. 25-17:2017, CSA C22.2 No.30:1986 (R2016), CSA C22.2 No.94:1991 (R2011), CSA C22.2 No. 61010-1-12 (R2022), CSA C22.2 No. 60079-0:2015, CSA C22.2 No. 60079-1:2016, CSA C22.2 No. 60079-26:2016; CSA-C22.2 No. 60079-31:2015, C22.2. 60529:2016, ANSI/ISA 12.27.01:2011

Markings XP CL I, DIV 1, GRPS A-D T6...T2
DIP CLII/III, DIV 1, GRPS E-G; T6...T3
Ex db IIC T6...T3 Gb
Ex tb IIIC T85°C...T250°C Db
(-40 °C ≤ Ta ≤ +70 °C)[3]; Type 4X/IP6X
SINGLE SEAL

Specific Conditions of Use (X):

1. Flamepath joints are not for repair. Contact the manufacturer.

(3) Other temperature ranges may apply, see Specific Conditions of Use (X).

2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. Metric Field Wiring Entries are not allowed for Divisions.
5. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.
6. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP6X and/or Type 4X rating. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for cable entries and blanking plugs. See Instruction Manual on application requirements.
7. Install per Control Drawing D7000002-885.
8. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
9. Display glass shall be positioned in such a way as to minimize the risk of mechanical impact.
10. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-8: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Division Gas groups:		
T2	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 250 °C
T3	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 195 °C
T4	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 130 °C
T5	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 95 °C
T6	-40 °C ≤ Ta ≤ 70 °C	-40 °C to 80 °C
Division Dust groups:		
T3	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 160 °C
T4	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 130 °C
T5	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 95 °C
T6	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 80 °C

Table 1-9: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Zone Gas groups:		
T2	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 250 °C
T3	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 195 °C
T4	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 130 °C
T5	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 95 °C
T6	-50 °C ≤ Ta ≤ 70 °C	-50 °C to 80 °C
Zone Dust groups:		
T250°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 250 °C
T200°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 195 °C
T135°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 130 °C
T100°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 95 °C
T85°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 80 °C

1.11.2 I6 Intrinsically Safe and Non-Incendive Systems

Certificate FM-C FM16CA0011X

Standards CSA C22.2 NO. 0.4-17:2017 (R2022), CSA C22.2 NO. 0.5:2016 (R2020), CSA C22.2 No. 25:2017, CSA C22.2 No.94:1991 (R2011), CSA C22.2 No. 213:2016, CSA C22.2 No. 61010-1-12 (R2022), CSA C22.2 No. 60079-0:2015, CSA C22.2 No. 60079-11:2014 (R2018), CSA C22.2 No. 60079-15:2016, CSA C22.2 No. 60079-26:2016, CSA C22.2. 60529:2016, ANSI/ISA 12.27.01:2011

Markings IS CL I, II, III DIV 1, GRPS A-G T4...T2

NI CL I, DIV 2, GRPS A-D T4...T2

S CL II, III DIV 2, GRPS E-G T4...T3

Ex ia IIC T4...T2 Ga

Ex ib IIC T4...T2 Ga/Gb

Ex ia IIIC T85°C...T250°C Da

-60 (-55) °C ≤ Ta ≤ +70 °C

When installed per Control Drawing D7000002-885

SINGLE SEAL

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.

3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-10: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
Division Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Division Dust groups:		
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 160 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T5	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T6	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

Table 1-11: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
Zone Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Zone Dust groups:		
T250°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T200°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T135°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T100°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T85°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

1.11.3 IF FISCO

Certificate FM-C FM16CA0011X

Standards CSA C22.2 NO. 0.4:2017 (R2022), CSA C22.2 NO. 0.5:2016 (R2020), CSA C22.2 No. 25:2017, CSA C22.2 No.94:1991(R2011), C22.2 No. 213:2016, C22.2 No. 61010-1-12 (R2022), CAN/CSA C22.2 No. 60079-0:2015 Ed. 3, CSA C22.2 No. 60079-11:2014 (R2018), CSA C22.2 No. 60079-15:2016 Ed.2, CSA C22.2 No. 60079-26:2016, CSA C22.2. 60529:2016; ANSI/ISA 12.27.01:2011

Markings IS CL I, II, III DIV 1, GRPS A-G T4...T2
NI CL I, DIV 2, GRPS A-D T4...T2
S CL II, III DIV 2, GRPS E-G T4...T3
Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
-55 °C ≤ Ta ≤ +70°C
When installed per Control Drawing D7000002-885
SINGLE SEAL

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between a Zone 0 and Zone 1 area. In this configuration, the process connection is installed in Zone 0, while the transmitter housing is installed in Zone 1. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Table 1-12: For Divisions:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Division Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Division Dust groups:		
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 160 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T5	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T6	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

Table 1-13: For Zones:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Zone Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Zone Dust groups:		
T250°C	-55 °C ≤ Ta ≤ 70°C	-55 °C to 250 °C
T200°C	-55 °C ≤ Ta ≤ 70°C	-55 °C to 195 °C
T135°C	-55 °C ≤ Ta ≤ 70°C	-55 °C to 130 °C
T100°C	-55 °C ≤ Ta ≤ 70°C	-55 °C to 95 °C
T85°C	-55 °C ≤ Ta ≤ 70°C	-55 °C to 80 °C

1.12 Europe

1.12.1 E1 ATEX Flameproof

Certificate	FM15ATEX0055X
Standards	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-26:2015, EN 60079-31:2014, EN 60529+A1+A2:2013
Markings	⟨Ex⟩ II 1/2G Ex db IIC T6...T2 Ga/Gb II 2D Ex tb IIIC T85°C... T250°C Db, IP6X -60 °C ≤ Ta ≤ +70 °C

Specific Conditions of Use (X):

1. Flamepath joints are not for repair. Contact the manufacturer.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb location. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP6X. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for cable entries and blanking plugs. See Instruction Manual on application requirements.
6. Install per Control Drawing D7000002-885.
7. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
8. Display glass shall be positioned in such a way as to minimize the risk of mechanical impact.
9. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Gas & Dust groups:		
T2 / T250°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 250 °C
T3 / T200°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 195 °C
T4 / T135°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 130 °C
T5 / T100°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 95 °C
T6 / T85°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 80 °C

1.12.2 I1 ATEX Intrinsic Safety

Certificate FM15ATEX0055X

Standards EN IEC 60079-0:2018, EN 60079-11:2012, EN 60079-26:2015, EN 60529:1991+A1:2000 +A2:2013

Markings Ex II 1G Ex ia IIC T4...T2 Ga
II 1/2G Ex ib IIC T4...T2 Ga/Gb
II 1D Ex ia IIIC T85°C...T250°C Da
-60 (-55) °C ≤ Ta ≤ +70°C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.

3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb location. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	**Ambient temperature range(1)**	**Process temperature range(1)**
Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Dust groups:		
T250°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T200°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T135°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T100°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T85°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

1.12.3 IA ATEX FISCO

Certificate FM15ATEX0055X

Standards EN IEC 60079-0:2018, EN 60079-11:2012, EN 60079-26:2015

Markings Ex II 1G Ex ia IIC T4...T2 Ga
II 1/2G Ex ib IIC T4...T2 Ga/Gb
II 1D Ex ia IIIC T85°C...T250°C Da
-55°C ≤ Ta ≤ +70°C

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb location. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Dust groups:		
T250°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T200°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T135°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T100°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T85°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

1.12.4 N1 ATEX Type N: Non-Sparking

Certificate FM15ATEX0056X

Standards EN IEC 60079-0:2018, EN 60079-15:2010, EN 60529:1991+A1:2000 +A2:2013

Markings Ex II 3G Ex nA IIC T4...T2 Gc, IP65
(-34 °C ≤ Ta ≤ +70 °C)
V ≤ 42.4V, I ≤ 23 mA (HART®)
V ≤ 32V, I ≤ 22 mA (Fieldbus)

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP65. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for

cable entries and blanking plugs. See Instruction Manual on application requirements.

4. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class	Ambient temperature range	Process temperature range
T2	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 250 °C
T3	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 195 °C
T4	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 130 °C

1.13 International

1.13.1 E7 IECEx Flameproof

Certificate IECEx FMG15.0033X

Standards IEC 60079-0:2017, IEC 60079-1:2014; IEC 60079-26:2014, IEC 60079-31:2013

Markings Ex db IIC T6...T2 Ga/Gb
Ex tb IIIC T85°C...T250°C Db IP6X
-60 °C ≤ Ta ≤ +70 °C

Specific Conditions of Use (X):

1. Flamepath joints are not for repair. Contact the manufacturer.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP6X. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for

cable entries and blanking plugs. See Instruction Manual on application requirements.

6. Install per Control Drawing D7000002-885.
7. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
8. Display glass shall be positioned in such a way as to minimize the risk of mechanical impact.
9. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Gas & Dust groups:		
T2 / T250°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 250 °C
T3 / T200°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 195 °C
T4 / T135°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 130 °C
T5 / T100°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 95 °C
T6 / T85°C	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 80 °C

1.13.2 I7 IECEx Intrinsic Safety

Certificate IECEx FMG15.0033X

Standards IEC 60079-0:2017, IEC 60079-11:2011, IEC 60079-26:2014, IEC 60529:2013

Markings
Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
-60 (-55) °C ≤ Ta ≤ +70 °C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5 °C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
Gas groups:		
T2	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
Dust groups:		
T250°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T200°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T135°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T100°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T85°C	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

1.13.3 IG IECEx FISCO

Certificate IECEx FMG15.0033X

Standards IEC 60079-0:2017, IEC 60079-11:2011, IEC 60079-26:2014

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
-55°C ≤ Ta ≤ +70°C

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.

2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The Transmitter can be installed in the boundary wall between EPL Ga and EPL Gb location. In this configuration, the process connection is EPL Ga, while the transmitter housing is EPL Gb. Refer to Control Drawing D7000002-885.
5. Using the box provided on the nameplate, the User shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
6. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class / Maximum surface temperature	**Ambient temperature range**	**Process temperature range**
Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Dust groups:		
T250°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T200°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T135°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T100°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T85°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

1.13.4 N7 IECEx Type N: Non-Sparking

Certificate IECEx FMG15.0033X

Standards IEC 60079-0:2017, IEC 60079-15:2010

Markings Ex nA IIC T4...T2 Gc

(-34 °C ≤ Ta ≤ +70 °C), IP65
V ≤ 42.4V, I ≤ 23 mA (HART®)
V ≤ 32V, I ≤ 22 mA (Fieldbus)

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test between the circuits and the earth ground. This must be taken into account during installation.
2. Plastic wire-on tag, Plastic part of Process Seal Antenna and Non-standard paint options (paint options other than Rosemount Blue) may cause risk from Electrostatic discharge. Avoid installation that could cause electrostatic build-up, and only clean with a damp cloth.
3. Cable entries must be used which maintain the ingress protection of the enclosure to at least IP65. To maintain the ingress protection ratings, Covers and Sensor Module to be fully tightened and PTFE tape or pipe dope is required for cable entries and blanking plugs. See Instruction Manual on application requirements.
4. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows:

Temperature class	Ambient temperature range	Process temperature range
T2	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 250 °C
T3	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 195 °C
T4	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 130 °C

1.14 Brazil

1.14.1 E2 INMETRO Flameproof

Certificate UL-BR 17.0344X (Sweden), UL-BR 23.0978X (USA)

Standards ABNT NBR IEC 60079-0:2020, ABNT NBR IEC 60079-1:2020, ABNT NBR IEC 60079-26:2016, ABNT NBR IEC 60079-31:2014

Markings Ex db IIC T6...T2 Ga/Gb
Ex tb IIIC T85°C...T250°C Db
Tamb = -60 °C to +70 °C; IP6X

Specific Conditions of Use (X):

1. See certificate.

1.14.2 I2 INMETRO Intrinsic Safety

Certificate UL-BR 17.0344X (Sweden), UL-BR 23.0978X (USA)

Standards ABNT NBR IEC 60079-0:2020, ABNT NBR IEC 60079-11:2017, ABNT NBR IEC 60079-26:2016, ABNT NBR IEC 60079-31:2014

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
Tamb = -60 (-55) °C to +70 °C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. See certificate.

1.14.3 IB INMETRO FISCO

Certificate UL-BR 17.0344X (Sweden), UL-BR 23.0978X (USA)

Standards ABNT NBR IEC 60079-0, ABNT NBR IEC 60079-11, ABNT NBR IEC 60079-26

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
-55 °C ≤ Ta ≤ +70 °C

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. See certificate.

1.14.4 N2 INMETRO Type N: Non-Sparking

Certificate UL-BR 17.0344X (Sweden), UL-BR 23.0978X (USA)

Standards ABNT NBR IEC 60079-0, ABNT NBR IEC 60079-15

Markings Ex nA IIC T4...T2 Gc
Tamb = -34°C to +70°C; IP65
V ≤ 42.4V, I ≤ 23 mA (HART®)
V ≤ 32V, I ≤ 22 mA (Fieldbus)

Specific Conditions of Use (X):

1. See certificate.

1.15 China

1.15.1 E3 Flameproof

Certificate NEPSI GYJ22.1835X

Standards GB/T3836.1,2,4,20,31-2021

Markings Ex db IIC T6 ~ T2 Ga/Gb
Ex tb IIIC T85°C ~ 250°C Db
Tamb = -55°C/-60°C to +70°C

Specific Conditions of Use (X):

1. See certificate.

1.15.2 I3 Intrinsic Safety

Certificate NEPSI GYJ22.1835X

Standards GB/T3836.1,2,4,20,31-2021

Markings Ex ia IIC T4 ~ T2 Ga
Ex ib IIC T4 ~ T2 Ga/Gb
Ex ia IIIC T85°C ~ T250°C Da

Specific Conditions of Use (X):

1. See certificate.

1.15.3 IC FISCO

Certificate NEPSI GYJ22.1835X

Standards B/T3836.1,2,4,20,31-2021

Markings Ex ia IIC T4 ~ T2 Ga
Ex ib IIC T4 ~ T2 Ga/Gb
Ex ia IIIC T85°C ~ T250°C Da

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. See certificate.

1.16 Technical Regulations Customs Union (EAC)

TR CU 020/2011 “Electromagnetic Compatibility of Technical Products”

TR CU 012/2011 “On safety of equipment intended for use in explosive atmospheres”

1.16.1 EM Technical Regulations Customs Union (EAC) Flameproof

Certificate EAЭC KZ.7500525.01.01.00710

Standards	GOST 31610.0-2019 (IEC 60079-0:2017), GOST IEC 60079-1-2011, GOST 31610.26-2016 (IEC 60079-26:2014), GOST IEC 60079-31-2013
Markings	Ga/Gb Ex db IIC T6...T2 X Ex tb IIIC T85°C...T250°C Db X Tamb = -60 °C to +70 °C

Specific Conditions of Use (X):

1. Flamepath joints are not for repair. Contact the manufacturer.
2. The Model 5408 Level Transmitter can accumulate electrostatic charge on the surface of the casing. It is necessary to clean the painted surfaces with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The applied cable glands must provide a degree of protection against external influences of at least IP6X. To maintain the ingress protection rating (IP6X), the covers and sensor module must be fully tightened and sealed with PTFE tape or conduit and plug sealant. See performance specifications in the Instruction Manual.
5. When installing level gauges, refer to control drawing D7000002-885. The user must indicate on the rating plate the type of protection selected for the particular installation. Once a protection type has been fixed, it cannot be changed.
6. The viewing window of the display must be protected from impacts and mechanical influences.
7. The sensor can be installed on the section between EPL Ga and EPL Gb. In this configuration, the process connection is EPL Ga and the transmitter housing is EPL Gb. Refer to control drawing D7000002-885.
8. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows;

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
IIC/ IIIC		
T2/T250	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 250 °C
T3/T200	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 195 °C
T4/T135	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 130 °C
T5/T100	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 95 °C
T6/T85	-60 °C ≤ Ta ≤ 70 °C	-60 °C to 80 °C

1.16.2 IM Technical Regulations Customs Union (EAC) Intrinsic Safety

Certificate EAЭC KZ.7500525.01.01.00710

Standards GOST 31610.0-2019 (IEC 60079-0:2017), GOST 31610.11-2014 (IEC 60079-11:2011), GOST 31610.26-2016 (IEC 60079-26:2014)

Markings 0Ex ia IIC T4...T2 Ga X
Ga/Gb Ex ib IIC T4...T2 X
Ex ia IIIC T85°C ...T250°C Da X
Tamb = -60 (-55)°C to +70°C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test.This must be taken into account during installation.
2. The Model 5408 Level Transmitter can accumulate electrostatic charge on the surface of the casing. It is necessary to clean the painted surfaces with a damp cloth.

3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The applied cable glands must provide a degree of protection against external influences of at least IP6X. To maintain the ingress protection rating (IP6X), the covers and sensor module must be fully tightened and sealed with PTFE tape or conduit and plug sealant. See performance specifications in the Instruction Manual.
5. When installing level gauges, refer to control drawing D7000002-885. The user must indicate on the rating plate the type of protection selected for the particular installation. Once a protection type has been fixed, it cannot be changed.
6. The viewing window of the display must be protected from impacts and mechanical influences.
7. The sensor can be installed on the section between EPL Ga and EPL Gb. In this configuration, the process connection is EPL Ga and the transmitter housing is EPL Gb. Refer to control drawing D7000002-885.
8. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows;

Temperature class / Maximum surface temperature	Ambient temperature range(1)	Process temperature range(1)
IIC/ IIIC		
T2/T250	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 250 °C
T3/T200	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 195 °C
T4/T135	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 130 °C
T100	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 95 °C
T85	-60 (-55) °C ≤ Ta ≤ 70 °C	-60 (-55) °C to 80 °C

(1) -55 °C for Fieldbus; -60 °C for HART

1.16.3 IN Technical Regulations Customs Union (EAC), FISCO

Certificate EAЭC KZ.7500525.01.01.00710

Standards GOST 31610.0-2019 (IEC 60079-0:2017), GOST 31610.11-2014 (IEC 60079-11:2011), GOST 31610.26-2016 (IEC 60079-26:2014)

Markings

Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Ex ia IIIC T85°C...T250°C Da
-55 °C ≤ Ta ≤ +70 °C

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test.This must be taken into account during installation.
2. The Model 5408 Level Transmitter can accumulate electrostatic charge on the surface of the casing. It is necessary to clean the painted surfaces with a damp cloth.
3. Appropriate cable, glands, and plugs need to be suitable for a temperature of 5°C greater than the maximum specified ambient temperature for location where installed.
4. The applied cable glands must provide a degree of protection against external influences of at least IP6X. To maintain the ingress protection rating (IP6X), the covers and sensor module must be fully tightened and sealed with PTFE tape or conduit and plug sealant. See performance specifications in the Instruction Manual.
5. When installing level gauges, refer to control drawing D7000002-885. The user must indicate on the rating plate the type of protection selected for the particular installation. Once a protection type has been fixed, it cannot be changed.
6. The viewing window of the display must be protected from impacts and mechanical influences.
7. The sensor can be installed on the section between EPL Ga and EPL Gb. In this configuration, the process connection is EPL Ga and the transmitter housing is EPL Gb. Refer to control drawing D7000002-885.

8. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows;

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
Gas groups:		
T2	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T3	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T4	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
Dust groups:		
T250°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 250 °C
T200°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 195 °C
T135°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 130 °C
T100°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 95 °C
T85°C	-55 °C ≤ Ta ≤ 70 °C	-55 °C to 80 °C

1.16.4 NM Technical Regulations Customs Union (EAC) Non-Sparking

Certificate EAЭC KZ.7500525.01.01.00710

Standards GOST 31610.0-2019 (IEC 60079-0:2017), GOST 31610.15-2014/IEC 60079-15:2010

Markings 2Ex nA IIC T4...T2 Gc X
Tamb = -34 °C to +70 °C
V ≤ 42.4V, I ≤ 23 mA (HART®)
V ≤ 32V, I ≤ 22 mA (Fieldbus)

Specific Conditions of Use (X):

1. The Model 5408 Level Transmitter will not pass the 500Vrms dielectric strength test.This must be taken into account during installation.
2. The applied cable glands must provide a degree of protection against external influences of at least IP6X. To maintain the ingress protection rating (IP6X), the covers and sensor module must be fully tightened and sealed with PTFE tape or conduit and plug sealant. See performance specifications in the Instruction Manual.
3. The applicable temperature class, ambient temperature range and process temperature range of the equipment is as follows;

Temperature class / Maximum surface temperature	Ambient temperature range	Process temperature range
T2	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 250 °C
T3	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 195 °C
T4	-34 °C ≤ Ta ≤ 70 °C	-34 °C to 130 °C

1.17 Japan

1.17.1 E4 Flameproof

Certificate CML 17JPN1206X

Markings Ex db IIC T6...T2 Ga/Gb
Tamb = -60°C to +70°C

Specific Conditions of Use (X):

1. See certificate.

1.17.2 I4 Intrinsic Safety

Certificate CML 17JPN1206X

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Tamb = -55°C to +70°C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. See certificate.

1.17.3 ID FISCO

Certificate CML 17JPN1206X

Markings Ex ia IIC T4...T2 Ga

Ex ib IIC T4...T2 Ga/Gb
Tamb = -55°C ≤ Ta ≤ +70°C

Safety parameter	FISCO
Voltage U_i	17.5 V
Current I_i	380 mA
Power P_i	5.32 W
Capacitance C_i	1.1 nF
Inductance L_i	0

Specific Conditions of Use (X):

See certificate.

1.18 India

1.18.1 Intrinsic Safety and Flameproof

Certificate PESO P482139/1

1.18.2 IW Intrinsically Safe

Certificate PESO P482139/1

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
-55 °C /-60 °C ≤ Ta ≤ +70 °C, IP6X

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. See certificate.

1.18.3 EW Flameproof

Certificate PESO P482139/1

Markings Ex db IIC T6...T2 Ga/Gb
-55 °C/-60 °C ≤ Ta ≤ +70 °C

1.19 Republic of Korea

1.19.1 EP Flameproof

Certificate KTL 17- KA4BO-0652X, 18-KA4BO-0346X, 19-KA4BO-0169X, 19-KA4BO-0170X, 19-KA4BO-0726, 19-KA4BO-0727, 19-KA4BO-0728, 19-KA4BO-0732, 19-KA4BO-0733, 19-KA4BO-0734

Markings Ex db IIC T6...T2 Ga/Gb
Ex tb IIIC T85°C...T250°C
Tamb = -60 °C to +70 °C

1.19.2 IP Intrinsic Safety

Certificate KTL 17-KA4BO-0448X, 17-KA4BO-0654X, 18-KA4BO-0347X, 18-KA4BO-0345X, 19-KA4BO-0729, 19-KA4BO-0730, 19-KA4BO-0731, 19-KA4BO-0752, 19-KA4BO-0736, 19-KA4BO-0737

Markings Ex ia IIC T4...T2 Ga
Ex ib IIC T4...T2 Ga/Gb
Tamb = -60 (-55) °C to +70 °C

Safety parameter	HART®	Fieldbus
Voltage U_i	30 V	30 V
Current I_i	133 mA	300 mA
Power P_i	1.0 W	1.5 W
Capacitance C_i	7.3 nF	1.1 nF
Inductance L_i	0	0

Specific Conditions of Use (X):

1. See certificate.

1.20 United Arab Emirates

1.20.1 Flameproof

Certificate 23-11-22694/Q23-11-048838/NB0002, 23-11-22710/Q23-11-048839/NB0002,

24-01-22812/Q23-11-048840/NB0002,
23-11-22737/Q23-12-048887/NB0002

Markings Same as IECEx (E7)

1.20.2 Intrinsic Safety

Certificate 23-11-22694/Q23-11-048838/NB0002,
23-11-22710/Q23-11-048839/NB0002,
24-01-22812/Q23-11-048840/NB0002,
23-11-22737/Q23-12-048887/NB0002

Markings Same as IECEx (I7)

1.20.3 FISCO

Certificate 23-11-22694/Q23-11-048838/NB0002,
23-11-22710/Q23-11-048839/NB0002,
24-01-22812/Q23-11-048840/NB0002,
23-11-22737/Q23-12-048887/NB0002

Markings Same as IECEx (IG)

1.20.4 Type-N Non Sparking

Certificate 23-11-22694/Q23-11-048838/NB0002,
23-11-22710/Q23-11-048839/NB0002,
24-01-22812/Q23-11-048840/NB0002,
23-11-22737/Q23-12-048887/NB0002

Markings Same as IECEx (N7)

1.21 Marine Type Approvals

1.21.1 SBS American Bureau of Shipping (ABS) Type Approval

Certificate 22-2237976-PDA

Intended Use For use on ABS Classed Vessels and Offshore installations in accordance with ABS rules and International Standards.

Note
Housing material A, Aluminum, is not to be used on open decks.

1.21.2 SBV Bureau Veritas (BV) Type Approval

Certificate 52129/B0 BV

Requirements Bureau Veritas Rules for the Classification of Steel Ships/Offshore Units. EC Code: 31/41SB for 5408 SST housing 31/41B for 5408 Aluminum housing

Application Class Notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.

1.21.3 SDN Det Norske Veritas (DNV) Type Approval

Certificate TAA0000230

Intended Use DNV rules for classification – Ships, offshore units, and high speed and light craft.

Table 1-14: Application

Location classes	
Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C(1)

(1) Enclosure Class B for aluminum housing

1.21.4 SLL Lloyd's Register (LR) Type Approval

Certificate LR2421596TA, Design Appraisal Document (DAD) HPC1762193-24/MK

Application Marine applications for use in environmental categories ENV1, ENV2, ENV3 and ENV5(4) as defined in Lloyd's Register's Type Approval System, Test Specification Number 1, December 2021

1.22 Functional safety

1.22.1 QT Safety-certified to IEC 61508:2010 with certificate of FMEDA data

Certificate exida ROS 15-01-149 C001

(4) Only housing material "S" (stainless steel) is to be used on open decks.

1.23 NAMUR compliance

1.23.1 Suitable for intended use

Compliant with NAMUR NE 95:2013, “Basic Principles of Homologation”

1.24 Overfill prevention

1.24.1 U1 Germany – WHG

Certificate	Z-65.16-575
Application	TÜV tested and approved by DIBt for overfill prevention according to the German WHG regulations.

1.24.2 Belgium – Vlarem

Certificate	VIL/35/P017110041/NL/001
Standards	Vlarem II Chapter 5.17 Vlarem II Appendix 5.17.7

1.25 Hygienic certificates and approvals

1.25.1 QA 3-A®

Certificate Authorization Number	3626

The following options are conforming to the 3-A Sanitary Standards, Number 74-07 (Sensors and Sensor Fittings and Connections):

Process connection type	C (Tri Clamp)
Process connection size	2, 3, 4
Antenna type	SAA (Process Seal antenna)
Antenna size	2, 3, 4

1.25.2 Other hygienic approvals

The process wetted components of the Process Seal Antenna (antenna type SAA) comply with:

- FDA 21 CFR 110, subpart C and FDA 21 CFR 177.1550
- EC 1935/2004 and EC 10/2011
- TSE/BSE Free
- USP<87>
- USP<88> Class VI

1.25.3 Instructions for hygienic installations

It is the responsibility of the user to ensure that:

1. The materials listed in Table 1-15 and Table 1-16 are suitable for the media and cleaning/sanitizing processes.
2. The installation of the transmitter is drainable and cleanable.
3. The joint/clamping between the transmitter and the nozzle is compatible with the tank pressure and media.
4. For the application suitable cable entry devices are used and with appropriate ingress protection.
5. Any unused cable entries are sealed with suitable plugs to maintain the ingress protection ratings.
6. The product contact surfaces are not scratched.
7. The 3-A specific nozzle height limits are kept to ensure cleanability. See Reference Manual for nozzle requirements.

1.25.4 Materials of construction

The hygienic approvals and certificates of the transmitter rely upon the following materials used in its construction:

Table 1-15: Product Contact Surfaces

Item	Material
Microwave launcher	PTFE fluoropolymer

Table 1-16: Nonproduct Contact Surfaces

Item	Material
Metal housing	Stainless steel 300 series or aluminium 360, painted with epoxy-polyester or polyurethane
Fasteners and plugs	Stainless steel 300 series
Seals	Nitrile rubber NBR, Ethylene propylene peroxide and FKM fluoroelastomer
Labels	Stainless steel 300 series, metallized polyester, polyester/polycarbonate

1.25.5 Clean-In-Place (CIP)

Withstands cleaning routines up to 194 °F (90 °C)

1.25.6 Steam-In-Place (SIP)

Withstands cleaning routines up to 284 °F (140 °C)

1.26 Pattern approval

Belarus Pattern Approval

Certificate No. 12954

Kazakhstan Pattern Approval

Certificate KazInMetrKZ.02.01.02391-2023 No. 2391

Russia Pattern Approval

Certificate VNIIMS No. SE.C.29.004.A No 70968

Uzbekistan Pattern Approval

Certificate No. 02-2.0442

Figure 1-1: D7000002-885 - System Control Drawing

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424

SYSTEM CONTROL DRAWING – ROSEMOUNT 5408 SERIES

(Table of Contents)

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

EMERSON.
LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE, SWEDEN

ISSUED BY	WEEK	PRODUCT CODE	TITLE
ESa-LN	1524	5408	System Control Drawing Rosemount 5408 Series (Table of Contents)
APPROVED BY	WEEK	DOC. TYPE	SIZE / DRAWING NO. / ISS. #
EAp	1525	6	A3 / D7000002-885 / 6

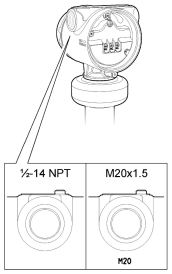
SHEET 1 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424

SYSTEM CONTROL DRAWING – ROSEMOUNT 5408 SERIES

GENERAL INFORMATION

1. No revision to drawing without prior FM Approval.
2. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
3. Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
4. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
5. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
6. Installations for IECEx certification shall be in accordance with latest editions of the wiring practices for the applicable country.
7. The EPL Ga partition wall is made of stainless steel and a welded fused glass/ stainless steel lens.
8. The EPL Ga/Gb separation is invalidated if the transmitter is removed from the antenna connection i.e. there is a risk of flammable gas release and flame entrance. Disconnect power before removing the transmitter.
9. Thread size either ½-14 NPT or M20x1.5. Identification of thread size and type (No marking = ½-14 NPT).



CONDUIT THREAD, BOTH SIDES (see note 9)

10. Additional installation requirements are found in the Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408).
11. See table below for applicable P/T rating for different antenna types.
12. The bottom of the transmitter is approved as a SINGLE SEAL device according to ANSI/ISA 12.27.01 up to a maximum process pressure of 100 bar and a process temperature range of -76 ... 482 °F (-60 ... 250 °C). Actual process limits depends on antenna type and seal, see table above. Materials of the sealing wall are according to Note 7.

Antenna Type	Operating Temperature and Pressure
Cone Antenna (PTFE seal, CAA)	-15 … 363 psig (-1 ... 25 bar) -76… 392 °F (-60 … 200 °C)
Cone Antenna (PTFE seal, CAB)	-15 … 725 psig (-1 ... 50 bar) -40… 302 °F (-40 … 150 °C)
Cone Antenna (PTFE seal, CAC)	-15 … 1450 psig (-1 ... 100 bar) -40… 212 °F (-40 … 100 °C)
Cone Antenna (PTFE seal, CAD)	-15 … 44 psig (-1 ... 3 bar) -76… 482 °F (-60 … 250 °C)
Cone Antenna (PEEK seal, FVMQ, CBF)	-15 … 754 psig (-1 ... 52 bar) -76… 338 °F (-60 … 170 °C)
Cone Antenna (PEEK seal, Kalrez, CBK)	-15 … 754 psig (-1 ... 52 bar) 5… 482 °F (-15 … 250 °C)
Cone Antenna (PEEK seal, Viton, CBV)	-15 … 754 psig (-1 ... 52 bar) -22… 392 °F (-30 … 200 °C)
Cone Antenna (PEEK seal, FKM, CBM)	-15 … 754 psig (-1 ... 52 bar) -13… 428 °F (-25 … 220 °C)
Parabolic Antenna (Swivel Mount, PAS)	-7…43 psig (-0.5 ... 3 bar) -67… 392 °F (-55 … 200 °C)
Process Seal Antenna (SAA)	Tri Clamp connection: -15 … 232 psig (-1 ... 16 bar) -13 … 392 °F (-25 … 200 °C) Note: -7 … 232 psig (-0.5 ... 16 bar) for temperatures above 302 ˚F (150 ˚C) 2-in. (DN50) and 3-in. (DN80) flanged connections: -15 … 363 psig (-1 ... 25 bar) -76 … 392 °F (-60 … 200 °C) Note: -7 … 363 psig (-0.5 ... 25 bar) for temperatures above 266 ˚F (130 ˚C) / 302 ˚F (150 ˚C)(1) 4-in. (DN100) flanged connection: -7 … 363 psig (-0.5 … 25 bar) -76 … 392 °F (-60 … 200 °C)

1. 266 ˚F (130 ˚C) for 3-in. (DN80); 302 ˚F (150 ˚C) for 2-in. (DN50)

WARNING – Substitution of components may impair Intrinsic Safety.
WARNING – Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
AVERTISSEMENT – La substitution de composants peut compromettre la sécurité intrinsèque.
AVERTISSEMENT – Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT – Ne pas ouvrir en cas de presence d'atmosphere explosive.

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

EMERSON
LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE, SWEDEN

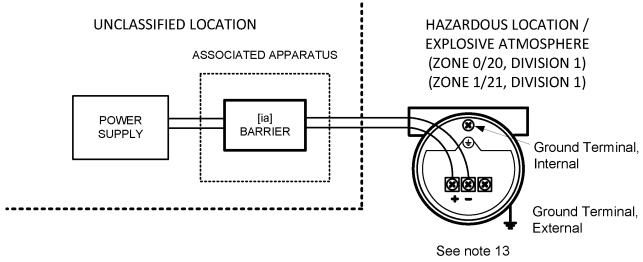
ISSUED BY	WEEK	PRODUCT CODE
ESa-LN	1524	5408
APPROVED BY	WEEK	DOC. TYPE
EAp	1525	6

TITLE: System Control Drawing Rosemount 5408 Series (General Information)
SIZE: A3 | DRAWING NO.: D7000002-885 | ISSUE: 6
SHEET 2 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424

ENTITY CONCEPT APPROVALS

The Entity concept allows interconnection of intrinsically safe apparatus to associated apparatus not specifically examined in combination as a system. The approved values of max. open circuit voltage (Uo, Voc or Vt) and max. short circuit current (Io, Isc or It) and max. power (Po or Voc x Isc / 4 or Vt x It / 4), for the associated apparatus must be less than or equal to the maximum safe input voltage (Ui), maximum safe input current (Ii), and maximum safe input power (Pi) of the intrinsically safe apparatus. In addition, the approved max. allowable connected capacitance (Ca or Co) of the associated apparatus must be greater than the sum of the interconnecting cable capacitance and the unprotected internal capacitance (Ci) of the intrinsically safe apparatus, and the approved max. Allowable connected inductance (La or Lo) of the associated apparatus must be greater than the sum of the interconnecting cable inductance and the unprotected internal inductance (Li) of the intrinsically safe apparatus.



Notes

1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved for installations in the U.S.
3. The Associated Apparatus must be Canadian Approved for Installations in Canada.
4. The Associated Apparatus must be ATEX Certified for Installations in Europe.
5. The Associated Apparatus must be IECEx Certified for IECEx installations.
6. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
7. Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
8. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
9. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
10. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
11. Installations for IECEx certification shall be in accordance with latest editions of the wiring practices for the applicable country.
12. The Entity Concept allows interconnection of associated apparatus and intrinsically safe apparatus with when the following is true:
    $U_o \leq U_i$ (Vmax), $I_o \leq I_i$ (Imax), $P_o \leq P_i$ (Pmax), $C_o \leq C_i + C_{cable}$; $L_o \leq L_i + L_{cable}$.
13. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

Intrinsically safe, EPL Ga Installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	IS Class I, II, III, DIV 1, GP A-G T4…T2 CL I, Zone 0 AEx ia IIC T4…T2 Ga Zone 20 AEx ia IIIC T85°C…T250°C Da	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
FMc	IS Class I, II, III, DIV 1, GP A-G T4…T2 Ex ia IIC T4…T2 Ga Ex ia IIIC T85°C…T250°C Da	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
ATEX	II 1G Ex ia IIC T4..T2 Ga II 1D Ex ia IIIC T85°C…T250°C Da	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
IECEx	Ex ia IIC T4..T2 Ga Ex ia IIIC T85°C…T250°C Da	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)

Model	Intrinsic Entity Parameters	Note
4-20mA / HART IS	Ui (Vmax) ≤ 30V, Ii (Imax) ≤ 133 mA Pi (Pmax) ≤1W, Ci = 7.3 nF, Li = 0 uH	
Fieldbus IS	Ui (Vmax) ≤ 30V, Ii (Imax) ≤ 300 mA Pi (Pmax) ≤ 1.5W, Ci = 1.1 nF, Li = 0 uH	Non-linear barrier assumed

WARNING – Substitution of components may impair Intrinsic Safety.
WARNING – Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
AVERTISSEMENT – La substitution de composants peut compromettre la sécurité intrinsèque.
AVERTISSEMENT – Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT – Ne pas ouvrir en cas de presence d'atmosphere explosive.

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

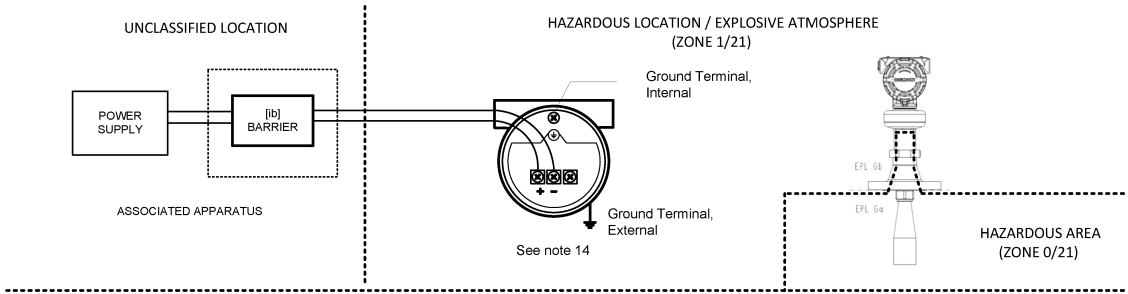
EMERSON. LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE. SWEDEN

ISSUED BY	WEEK	PRODUCT CODE	TITLE
ESa-LN	1524	5408	System Control Drawing Rosemount 5408 Series (Intrinsically safe, EPL Ga installation)
APPROVED BY	WEEK	DOC. TYPE	
EAp	1525	6	

SIZE	DRAWING NO.	ISSUE
A3	D7000002-885	6

SHEET 3 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424



Notes

1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved for installations in the U.S.
3. The Associated Apparatus must be Canadian Approved for Installations in Canada.
4. The Associated Apparatus must be ATEX Certified for Installations in Europe.
5. The Associated Apparatus must be IECEx Certified for IECEx installations.
6. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
7. Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
8. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
9. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
10. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
11. Installations for IECEx certification shall be in accordance with latest editions of the wiring practices for the applicable country.
12. The Entity Concept allows interconnection of associated apparatus and intrinsically safe apparatus with when the following is true:
    $U_o \leq U_i$ (Vmax), $I_o \leq I_i$ (Imax), $P_o \leq P_i$ (Pmax), $C_o \leq C_i + C_{cable}$; $L_o \leq L_i + L_{cable}$.
13. Listed intrinsic safety parameters apply only to associated apparatus with linear output.
14. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

Intrinsically safe, EPL Gb installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	CL I, Zone 0/1 AEx ib IIC T4…T2 Ga/Gb	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
FMc	Ex ib IIC T4…T2 Ga/Gb	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
ATEX	II 1/2G Ex ib IIC T4…T2 Ga/Gb	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)
IECEx	Ex ib IIC T4…T2 Ga/Gb	-60°C≤Ta≤+70°C (4-20mA/HART) -55°C≤Ta≤+70°C (Fieldbus)

Model	Intrinsic Entity Parameters	Note
4-20mA / HART IS	Ui (Vmax) ≤ 30V, Ii (Imax)≤ 133 mA Pi (Pmax) ≤1W, Ci = 7.3 nF, Li = 0 uH	
Fieldbus IS	Ui (Vmax) ≤ 30V, Ii (Imax) ≤ 300 mA Pi (Pmax) ≤ 1.5W, Ci = 1.1 nF, Li = 0 uH	Non-linear barrier assumed

WARNING – Substitution of components may impair Intrinsic Safety.
WARNING – Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
AVERTISSEMENT – La substitution de composants peut compromettre la sécurité intrinsèque.
AVERTISSEMENT – Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT – Ne pas ouvrir en cas de presence d'atmosphere explosive.

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

EMERSON. LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE, SWEDEN

ISSUED BY	WEEK	PRODUCT CODE	TITLE
ESa-LN	1524	5408	System Control Drawing Rosemount 5408 Series (Intrinsically safe, EPL Gb installation)
APPROVED BY	WEEK	DOC. TYPE	SIZE / DRAWING NO. / ISSUE
EAp	1525	6	A3 / D7000002-885 / 6

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ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424

FISCO CONCEPT

The Fieldbus Intrinsically Safe Concept (FISCO) allows the interconnection one FISCO certified power supply, an unlimited number of FISCO certified intrinsically safe field apparatus, and two FISCO certified terminators, one of each end of the trunk cable. (Note: The FISCO Terminator at the supply end is usually incorporated in to the FISCO Power Supply.)

Each piece of apparatus will be marked with the word "FISCO" followed by the indication of its function, i.e. "Power Supply", "Field Device" or "Terminator".

Interconnection of the FISCO Field Device, FISCO terminators and FISCO Power Supply must be suitable for the same Division or type of protection and Gas Group(s).

The FISCO power supply shall be located not more than 30m from one end of the trunk. Where the power supply is connected via a spur, then that spur is restricted to a length of 30 m.

The cable used to interconnect the devices needs to comply with the following parameters:

- Loop resistance Rc: 15 Ω/km to 150 Ω/km
- Inductance per unit length Lc: 0.4mH/km to 1mH/km
- Capacitance per unit length Cc: 45nF/km to 200nF/km
- Maximum Length of spur Cable: 60m for IIC and IIB;
- Maximum length of each trunk cable, including the length of all spurs, 1 km in IIC and
- 5 km in I, IIB and IIIC.

Terminators at each end of the trunk cable a line terminator with the following parameters is suitable:

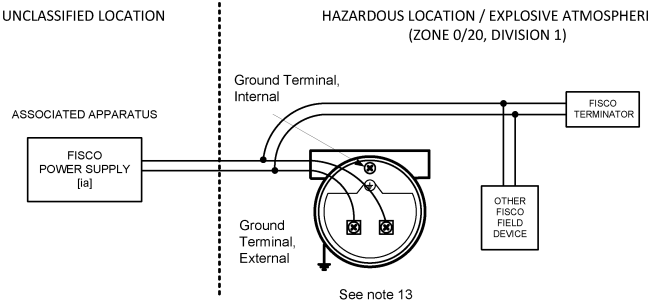
- R = 90Ω to 102Ω
- C = 0 to 2.2µF

Notes

1. No revision to drawing without prior FM Approval.
2. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be FM Approved for installations in the U.S.
3. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be Canadian Approved for Installations in Canada.
4. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be ATEX Certified for Installations in Europe.
5. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be IECEx Certified for IECEx installations.
6. FISCO Supply manufacturer's installation drawing shall be followed when installing this equipment.
7. The control room equipment connected to FISCO Supply must not generate more than 250 Vrms or Vdc, or the marked Um on the associated apparatus.
8. Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
9. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
10. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
11. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
12. Installations for IECEx certification shall be in accordance with IEC 60079-14 latest editions of the wiring practices for the applicable country.
13. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

AVERTISSEMENT - La substitution de composants peut compromettre la sécurité intrinsèque.
AVERTISSEMENT - Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT - Ne pas ouvrir en cas de presence d'atmosphere explosive.



Intrinsically safe, EPL Ga Installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	IS Class I, II, III, DIV 1, GP A-G T4…T2 CL I, Zone 0 AEx ia IIC T4…T2 Ga/Gb Zone 20 AEx ia IIIC T85°C…T250°C Da	-55°C≤Ta≤+70°C
FMc	IS Class I, II, III, DIV 1, GP A-G T4…T2 Ex ia IIC T4…T2 Ga Ex ia IIIC T85°C…T250°C Da	-55°C≤Ta≤+70°C
ATEX	II 1G Ex ia IIC T4..T2 Ga II 1D Ex ia IIIC T85°C…T250°C Da	-55°C≤Ta≤+70°C
IECEx	Ex ia IIC T4..T2 Ga Ex ia IIIC T85°C…T250°C Da	-55°C≤Ta≤+70°C

Model	Intrinsic Entity Parameters
Fileldbus FISCO	Ui (Vmax) ≤ 17.5V, Ii (Imax) ≤ 380 mA Pi (Pmax) ≤ 5.32W, Ci = 1.1 nF, Li = 0 uH

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

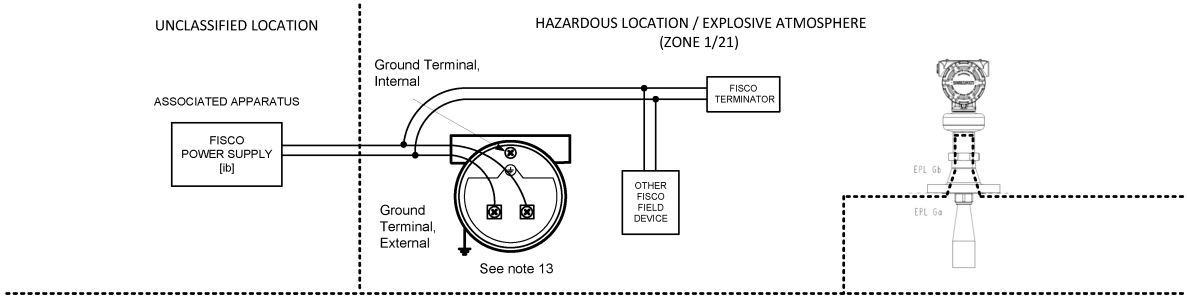
EMERSON. LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE. SWEDEN

ISSUED BY	WEEK	PRODUCT CODE	TITLE
ESa-LN	1524	5408	System Control Drawing Rosemount 5408 Series (FISCO, EPL Ga installation)
APPROVED BY	WEEK	DOC. TYPE	
EAp	1525	6	

SIZE	DRAWING NO.	ISSUE
A3	D7000002-885	6

SHEET 5 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424



Notes

1. No revision to drawing without prior FM Approval.
2. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be FM Approved for installations in the U.S.
3. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be Canadian Approved for Installations in Canada.
4. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be ATEX Certified for Installations in Europe.
5. The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be IECEx Certified for IECEx installations.
6. FISCO Supply manufacturer's installation drawing shall be followed when installing this equipment.
7. The control room equipment connected to FISCO Supply must not generate more than 250 Vrms or Vdc, or the marked Um on the associated apparatus.
8. Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
9. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
10. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
11. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
12. Installations for IECEx certification shall be in accordance with IEC 60079-14 latest editions of the wiring practices for the applicable country.
13. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

Intrinsically safe, EPL Gb installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	CL I, Zone 0/1 AEx ib IIC T4…T2 Ga/Gb	-55°C≤Ta≤+70°C
FMc	Ex ib IIC T4…T2 Ga/Gb	-55°C≤Ta≤+70°C
ATEX	II 1/2G Ex ib IIC T4…T2 Ga/Gb	-55°C≤Ta≤+70°C
IECEx	Ex ib IIC T4…T2 Ga/Gb	-55°C≤Ta≤+70°C

Model	Intrinsic Entity Parameters
Fieldbus FISCO	Ui (Umax) ≤ 17.5V, Ii (Imax) ≤ 380 mA Pi (Pmax) ≤ 5.32W, Ci = 1.1 nF, Li = 0 uH

WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

AVERTISSEMENT - La substitution de composants peut compromettre la sécurité intrinséque.
AVERTISSEMENT - Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT - Ne pas ouvrir en cas de presence d'atmosphere explosive.

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

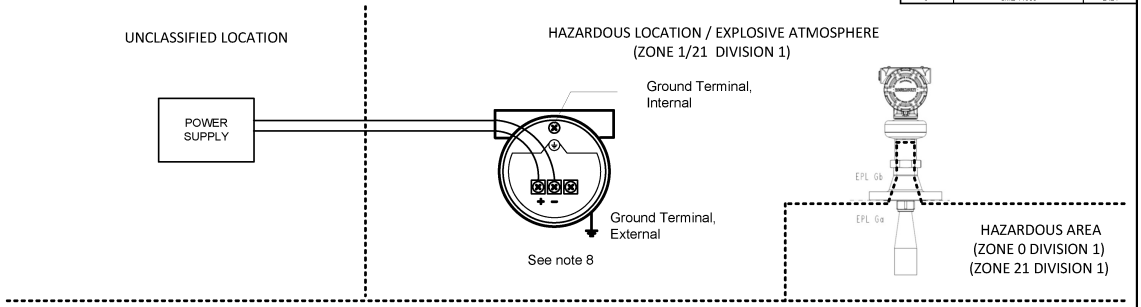
D7000002-885

EMERSON. LAY OUTVÄGEN 1, S-435 33 MÖLNLYCKE. SWEDEN

ISSUED BY	WEEK	PRODUCT CODE	TITLE
ESa-LN	1524	5408	System Control Drawing Rosemount 5408 Series (FISCO, EPL Gb installation)
APPROVED BY	WEEK	DOC. TYPE	SIZE / DRAWING NO. / ISSUE
EAp	1525	6	A3 / D7000002-885 / 6

SHEET 6 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424



Notes

1. No revision to drawing without prior FM Approval.
2. The control room equipment connected to Associated Apparatus must not generate more than 250 Vrms or Vdc.
3. Installations in the U.S. should be in accordance with the latest edition of the National Electrical Code (ANSI/NFPA 70).
4. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
5. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
6. Installations for IECEx certification shall be in accordance with latest editions of the wiring practices for the applicable country.
7. -50°C for Division Dust, -60°C for Zone Dust and -50°C for Zone Gas installations.
8. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

Flameproof/XP installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	XP Class I, DIV 1, GP A-D T6…T2 DIP CL II, III DIV 1, GP E-G T6…T3 CL I Zone 0/1 AEx db IIC T6..T2 Ga/Gb Zone 21 AEx tb IIIC T85°C…T250°C Db	-40°C≤Ta≤+70°C (see note 7)
FMc	XP Class I, DIV 1, GP A-D T6…T2 DIP CL II, III DIV 1, GP E-G T6…T3 Ex db IIC T6..T2 Ga/Gb Ex tb IIIC T85°C…T250°C Db	-40°C≤Ta≤+70°C (see note 7)
ATEX	II 1/2G Ex db IIC T6..T2 Ga/Gb II 2D Ex tb IIIC T85°C…T250°C Db	-60°C≤Ta≤+70°C
IECEx	Ex db IIC T6..T2 Ga/Gb Ex tb IIIC T85°C…T250°C Db	-60°C≤Ta≤+70°C

Model	Normal Operating Parameters
4-20mA / HART	U ≤ 42.4V, I ≤ 23 mA
Fieldbus	U ≤ 32V, I ≤ 60 mA

WARNING – Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
WARNING – In explosive atmosphere keep tight when circuit is alive.
WARNING – Seal to be installed within 50 mm of the enclosure (applicable for Canada/Zone only).

AVERTISSEMENT – Risque potentiel de charge électrostatique, essuyer avec un chiffon humide.
AVERTISSEMENT – Ne pas ouvrir en cas de presence d'atmosphere explosive.
AVERTISSEMENT – Ouvrir le circuit avant d'enlever le couvercle.
AVERTISSEMENT – Un dispositif d'étanchéité doit être installé à 50 mm du boiter (applicable uniquement pour le Canada/Zone).

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

EMERSON.
LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE. SWEDEN

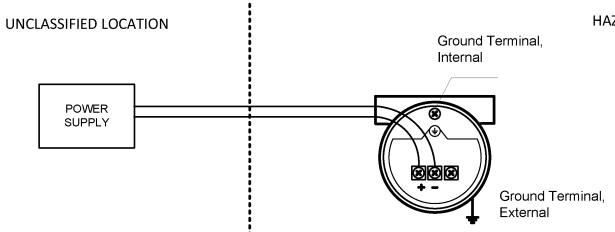
ISSUED BY	WEEK	PRODUCT CODE
ESa-LN	1524	5408
APPROVED BY	WEEK	DOC. TYPE
EAp	1525	6

TITLE: System Control Drawing
Rosemount 5408 Series
(Flameproof/XP installation)

SIZE A3 | DRAWING NO. D7000002-885 | ISSUE 6

SHEET 7 OF 9

ISSUE	CHANGE ORDER NO.	WEEK
6	SME-11900	2424



Notes

1. No revision to drawing without prior FM Approval.
2. Installations in the U.S. should be in accordance with the latest edition of the National Electrical Code (ANSI/NFPA 70).
3. Installation in Canada should be in accordance with the latest edition of the C22.1 Canadian Electrical Code, Part I.
4. Installations in Europe shall comply with the relevant requirements of EN 60079-14 and applicable National regulations.
5. Installations for IECEx certification shall be in accordance with latest editions of the wiring practices for the applicable country.
6. Different terminal blocks are applicable. See Quick Start Guide (doc no 00825-0100-4408/ 00825-0300-4408/00825-0500-4408) and the Product Certification Document (doc no 00825-0200-4408) for additional installation details.

Non-incendive installation

	Safe Apparatus for use in:	Ambient Temperature Limits
FM_{US}	NI CL I,DIV 2, GP A-D T4…T2 S CL II, III DIV 2, GP E-G T4…T3	-60°C≤Ta≤+70°C
FMc	NI CL I,DIV 2, GP A-D T4…T2 S CL II, III DIV 2, GP E-G T4…T3	-60°C≤Ta≤+70°C
ATEX	II 3G Ex Na IIC T4…T2 Gc	-34°C≤Ta≤+70°C
IECEx	Ex Na IIC T4…T2 Gc	-34°C≤Ta≤+70°C

Model	Maximum operating parameters
4-20mA / HART	U ≤ 42.4V, I ≤ 23 mA
Fieldbus	U ≤ 32V, I ≤ 60 mA

WARNING – Do not separate when energized.
WARNING – Substitution of components may impair Intrinsic Safety.
WARNING – Potential electrostatic charging hazard, wipe with a damp cloth.
WARNING – To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

AVERTISSEMENT – Ne pas séparer lorsqu'il est activé.
AVERTISSEMENT – La substitution de composants peut compromettre la sécurité intrinsèque.
AVERTISSEMENT – Risque potentiel de charge éLectrostatique, essuyer avec un chiffon humide.

FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.

D7000002-885

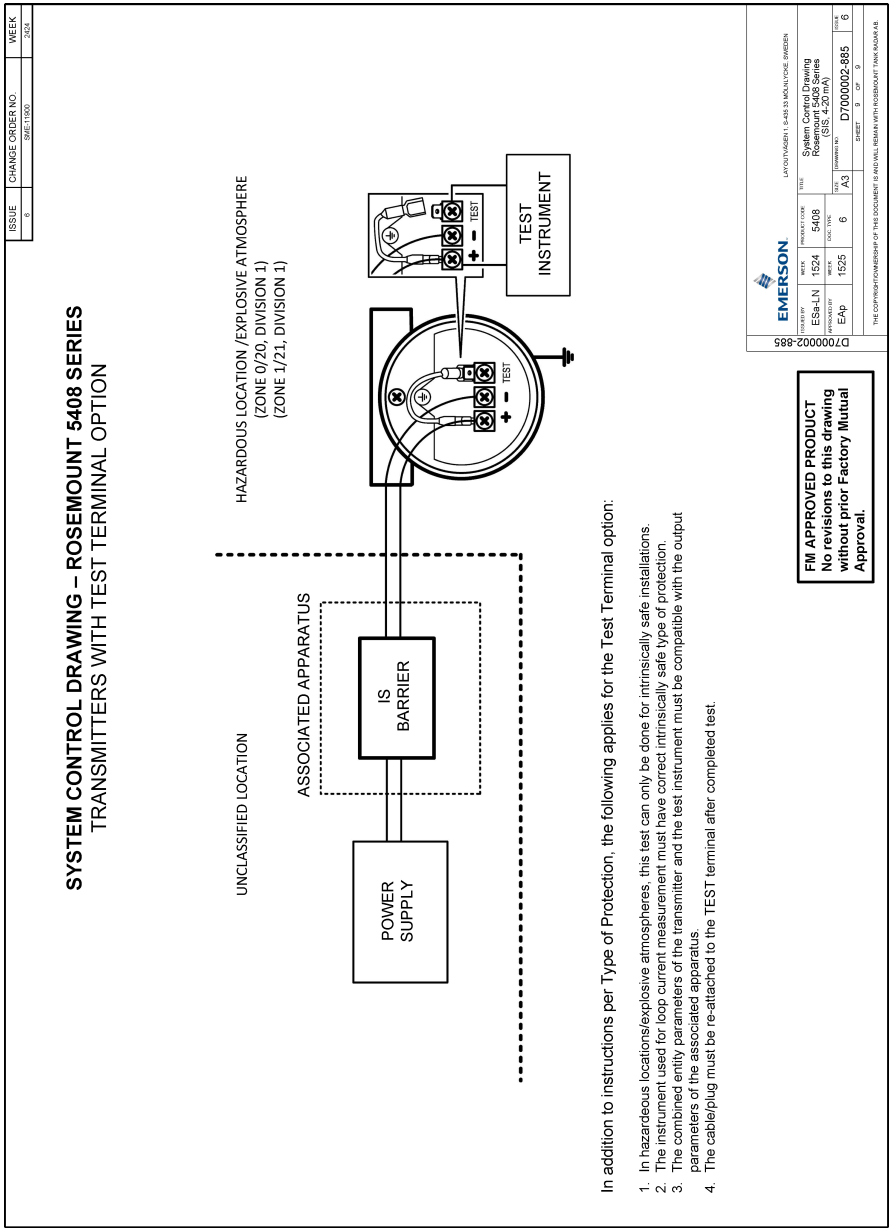
EMERSON.
LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE, SWEDEN

ISSUED BY	WEEK	PRODUCT CODE
ESa-LN	1524	5408
APPROVED BY	WEEK	DOC. TYPE
EAp	1525	6

TITLE: System Control Drawing
Rosemount 5408 Series
(Non-incendive installation)

SIZE A3 | DRAWING NO. D7000002-885 | ISSUE 6

SHEET 8 OF 9


ISSUE
0
CHANGE ORDER NO.
39651/1600
WEEK
2424
SYSTEM CONTROL DRAWING – ROSEMOUNT 5408 SERIES
TRANSMITTERS WITH TEST TERMINAL OPTION
UNCLASSIFIED LOCATION
HAZARDOUS LOCATION /EXPLOSIVE ATMOSPHERE
(ZONE 0/20, DIVISION 1)
(ZONE 1/21, DIVISION 1)
ASSOCIATED APPARATUS
POWER SUPPLY
IS BARRIER
TEST
TEST INSTRUMENT
In addition to instructions per Type of Protection, the following applies for the Test Terminal option:
1. In hazardous locations/explosive atmospheres, this test can only be done for intrinsically safe installations.
2. The instrument used for loop current measurement must have correct intrinsically safe type of protection.
3. The combined entity parameters of the transmitter and the test instrument must be compatible with the output parameters of the associated apparatus.
4. The cable/plug must be re-attached to the TEST terminal after completed test.
FM APPROVED PRODUCT
No revisions to this drawing without prior Factory Mutual Approval.
D7000002-885
EMERSON.
LAYOUTVÄGEN 1, S-435 33 MÖLNLYCKE, SWEDEN
ESa-LN
1524
5408
EAp
1525
6
A3
System Control Drawing
Rosemount 5408 Series
(SIS, 4-20 mA)
D7000002-885
6
SHEET 9 OF 9
THE COPYRIGHT/OWNERSHIP OF THIS DOCUMENT IS AND WILL REMAIN WITH ROSEMOUNT TANK RADAR AB.

1.28 EU Declaration of Conformity

Figure 1-2: EU Declaration of Conformity

Rev. #4

EMERSON

Declaration of Conformity CE

We,

Rosemount Tank Radar AB
Layoutvägen 1
S-435 33 MÖLNLYCKE
Sweden

declare under our sole responsibility that the product,

Rosemount™ 5408 Level Transmitter

manufactured by,

Rosemount Tank Radar AB
Layoutvägen 1
S-435 33 MÖLNLYCKE
Sweden

to which this declaration relates, is in conformity with the provisions of the European Union Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.

(signature)	Sr. Manager Product Approvals (function)
Dajana Prastalo (name)	12-Feb-24; Mölnlycke (date of issue & place)

Page 1 of 4

Rev. #4

EMERSON.

Declaration of Conformity CE

EMC Directive (2014/30/EU)

Harmonized Standards: EN 61326-1:2013
Other Standards Used: IEC 61326-1:2020

ATEX Directive (2014/34/EU)

FM15ATEX0055X

Intrinsic Safety (HART@4-20mA, Foundation ® Fieldbus):

Equipment Group II, Category 1G, Ex ia IIC T4…T2 Ga
Equipment Group II, Category 1/2G, Ex ib IIC T4…T2 Ga/Gb
Equipment Group II, Category 1D, Ex ia IIIC T85°C …T250°C Da

Flameproof (HART@4-20mA, Foundation ® Fieldbus):
Equipment Group II, Category 1/2G, Ex db IIC T6…T2 Ga/Gb
Equipment Group II, Category 2D, Ex tb IIIC T85°C …T250°C Db

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-1:2014
EN 60079-11:2012
EN 60079-26:2015
EN 60079-31:2014
Other Standards Used: EN 60529:1991/A1:2000/A2:2013

FM15ATEX0056X

Type of protection N, Non-sparking (Hart@4-20mA, Foundation ® Fieldbus

Equipment Group II, Category 3G, Ex nA IIC T4..T2 Gc

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-15:2010
Other Standards Used: EN 60529:1991/A1:2000/A2:2013

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Rev. #4

Declaration of Conformity CE

Radio Equipment Directive (RED) (2014/53/EU)

Harmonized Standards:
ETSI EN 302 372:2016
ETSI EN 302 729:2016
EN 62479: 2010

Low Voltage Directive (LVD) (2014/35/EU)

Harmonized Standards: EN 61010-1:2010/A1:2019/AC:2019-04

RoHS Directive (2011/65/EU) Amended 2015/863

Harmonized Standards: EN IEC 63000:2018

Rev. #4

EMERSON.

Declaration of Conformity CE

ATEX Notified Body for EU Type Examination Certificates and Type Examination Certificates:

FM Approvals Europe Ltd. [Notified Body Number: 2809]
One Georges Quay Plaza
Dublin. D02 E440
Ireland

ATEX Notified body for Quality Assurance

DNV Product Assurance AS [Notified Body Number: 2460]
Veritasveien 3
1363 Høvik
Norway

1.29 China RoHS

List of Model Parts with China RoHS Concentration above MCVs
含有China RoHS管控物质超过最大浓度限值的部件型号列表

Part Name 部件名称	Hazardous Substances / 有害物质					
	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 镉 (Cd)	Hexavalent Chromium 六价铬 (Cr +6)	Polybrominated biphenyls 多溴联苯 (PBB)	Polybrominated diphenyl ethers 多溴联苯醚(PBDE)
Electronics Assembly 电子组件	X	O	O	O	O	O
Housing Assembly 壳体组件	O	O	O	O	O	O

This table is proposed in accordance with the provision of SJ/T11364
本表格系依据SJ/T11364的规定而制作.
O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.
O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求.
X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.
X: 意为在该部件所使用的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求.

Product Certifications
00825-0200-4408, Rev. AW
September 2024

For more information: **Emerson.com/global**

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