Control drawings for installations in hazardous locations that conform to US and Canadian standards
HAZARDOUS (CLASSIFIED) LOCATION

- CL. I, DIV 1, GPS A, B, C, D
- CL. II, DIV 1, GPS E, F, G
- CL. III, DIV 1
- CL. I, ZONE 1 (probe suitable for zone 0), IIC
- ZONE 21 (probe suitable for zone 20), IIIIC

Connection for Entity Concept of 2 Wires / 4...20 mA HART Version

Notes:

1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above 80°C.
4) To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:
   \[ U_i (V_{max}) \leq U_i (V_{max}) \leq \sum I_i (I_{max}) \leq \sum U_i (V_{max}) \leq Li + L_{cable} \]
   \[ Pi (P_{max}) \geq Pi (P_{max}) \geq \sum Io (I_{oc}) \leq \sum Co (C_{a}) \leq Co (C_{a}) \leq U_{o} (V_{oc}) \leq U_{o} (V_{oc}) \]
5) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
6) No revision to this drawing without prior agency approval.
7) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above 80°C.
8) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

Functional Ratings:

- Vnom= 12-30 V
- Inom= 4-20 mA or 3.8-20.5mA, error 3.6 mA or 22 mA

These ratings do not supersede hazardous locations values.

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

NON HAZARDOUS (UNCLASSIFIED) LOCATION

Entity Parameters:

- \( U_i (V_{max}) = 30 \text{ V} \)
- \( I_i (I_{max}) = 300 \text{ mA} \)
- \( P_i (P_{max}) = 1.0 \text{ W} \)
- \( C_i = 30 \text{ nF} \)

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE

TRANSMITTER INSTRUMENT OVERVIEW

- OPTIFLEX 2200 C COMPACT
- 4-20 mA/HART
- IS/Ex ia

Material:

- KSAS (Romans,F)
HAZARDOUS (CLASSIFIED) LOCATION
CL. I, DIV 1, GPS A, B, C, D (B, C, D for Canada)
CL. II, DIV 1, GP E, F, G
CL. III, DIV 1
CL. I, ZONE 1 (probe suitable for zone 0), IIIC
ZONE 21 (probe suitable for zone 20), IIIC

NON HAZARDOUS
(UNCLASSIFIED) LOCATION

CONNECTIONS OF 2 WIRES / 4...20 mA HART VERSION

Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C
4) Power supply must not use or generate more than 250 Vrms or Vdc.
5) Cable entry must be sealed within 18" conduit of enclosure (divisions) or at the enclosure (zones).
6) Not for use with Ketone atmosphere.
7) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
8) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
9) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2mm probe</td>
<td>2mm probe + HT extension</td>
</tr>
<tr>
<td></td>
<td>Other probes</td>
<td></td>
</tr>
<tr>
<td>T6</td>
<td>52°C</td>
<td>54°C</td>
</tr>
<tr>
<td>T5</td>
<td>67°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>79°C</td>
</tr>
<tr>
<td>T3</td>
<td>51°C</td>
<td>53°C</td>
</tr>
</tbody>
</table>

Functional Ratings:

| Vnom. = 16-36 V | Inom. = 4-20 mA or 3.8-20.5mA, error 3.6 mA or 22 mA |

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

TRANSMITTER INSTRUMENT OVERVIEW

Terminal compartment (see connections)
Earth terminal (internal)
Earth terminal (external)

OPTIFLEX 2200 C COMPACT
4-20 mA/HART
XP/DIP/Ex d/Ex tb

For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

Table 1:

<table>
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<tr>
<th>Temperature class</th>
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<td>2mm probe + HT extension</td>
</tr>
<tr>
<td></td>
<td>Other probes</td>
<td></td>
</tr>
<tr>
<td>T6-T3</td>
<td>-40°C</td>
<td>-40°C</td>
</tr>
<tr>
<td></td>
<td>-30°C</td>
<td>-39°C</td>
</tr>
</tbody>
</table>
**HAZARDOUS (CLASSIFIED) LOCATION**

CL. I, DIV 2, GPS A, B, C, D  
CL. II, DIV 3, GPS E, F, G  
CL. III, DIV 2  
CL. I, ZONE 2, IIC

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

**TRANSMITTER INSTRUMENT OVERVIEW**

**Table 1:**

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>2mm probe + HT extension</td>
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</tr>
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<td>T5</td>
<td>67°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>79°C</td>
</tr>
<tr>
<td>T3</td>
<td>51°C</td>
<td>71°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>68°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>Not allowed</td>
<td>65°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>54°C</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

**Notes:**

1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4) Intrinsic safety barrier not required.

5) Not for use with Ketone atmosphere.

6) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

7) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

8) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

**Functional Ratings:**

\[ V_{nom} = 16-36 \text{ V} \]
\[ I_{nom} = 4-20 \text{ mA or } 3.8-20.5 \text{ mA, error } 3.6 \text{ mA or } 22 \text{ mA} \]

**WARNING:** EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2 AVERTISSEMENT: RISQUE D'EXPLOSION. AVANT DE DEBRANCHER L'EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2
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**HAZARDOUS (CLASSIFIED) LOCATION**

CL. I, DIV 1, GPS A, B, C, D  
CL. II, DIV 1, GPS E, F, G  
CL. III, DIV 1  
CL. I, ZONE 1 (probe suitable for zone 0), IIC  
ZONE 21 (probe suitable for zone 20), IIIIC

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY**

**AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE**

**CONNECTIONS FOR ENTITY CONCEPT OF 2 WIRES / 4...20 mA HART VERSION**

**Notes:**

1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 980 to 1010 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4) To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:

\[ U_s (V_{nom}) \leq U (V_{nom}) \]
\[ I_s (I_{max}) \leq I (I_{max}) \]

5) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

6) Connect the earth terminal (internal or external) with a minimum cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

7) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

8) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

**Table 1:**

<table>
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<tr>
<th>Temperature class</th>
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<th>Maximum flange temperature</th>
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</thead>
<tbody>
<tr>
<td>T6</td>
<td>49°C</td>
<td>60°C</td>
</tr>
<tr>
<td>T5</td>
<td>64°C</td>
<td>75°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>85°C</td>
</tr>
<tr>
<td>T3</td>
<td>43°C</td>
<td>150°C</td>
</tr>
<tr>
<td>T1, T2</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T4</td>
<td>74°C</td>
<td>85°C</td>
</tr>
<tr>
<td>T3</td>
<td>43°C</td>
<td>150°C</td>
</tr>
<tr>
<td>T1, T2</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Functional Ratings:

- \( V_{nom} = 12-30 \) V
- \( S_{nom} = 4-20 \) mA or 3.8-20.5mA, error 3.6 mA or 22 mA

These ratings do not supersede hazardous locations values.

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL**

**TRANSMITTER INSTRUMENT OVERVIEW**

- Remote converter
- Earth terminal (external)
- Earth terminal (internal)

**Note:** to connect the remote cable please refer to the manual.

**OPTIFLEX 2200 F REMOTE 4-20 mA/HART**

**KSAS (Romans,F)**

**CONTROL DRAWING**

- Rev. by: 08/11/12 ATH
- Released by: 08/11/12 VPI

**Some images may be in the wrong orientation.**

**Entity Parameters:**

- \( L_s = 30 \) µH
- \( P_{s (P_{max})} = 1.0 \) W
- \( C_s = 30 \) nF
- \( I_s (I_{max}) = 300 \) mA

**Sensible Ex**

**Material**

**Doc. type**

**Doc. key**

**Rev.**

**Code**

**Article code**

**Status**

**Doc. key**

**Rev.**

**Scale**

**Sheet**
HAZARDOUS (CLASSIFIED) LOCATION
CL. I, DIV 1; GPS A, B, C, D (B, C, D for Canada)
CL. II, DIV 1, GP E, F, G
CL. III, DIV 1
CL. I, ZONE 1 (probe suitable for zone 0), IIC
ZONE 21 (probe suitable for zone 20), IIIC

NON HAZARDOUS (UNCLASSIFIED) LOCATION

CONNECTIONS OF 2 WIRES / 4-...20 mA HART VERSION

Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C
4) Power supply must not use or generate more than 250 Vrms or Vdc.
5) Cable entry must be sealed within 18" conduit of enclosure (divisions) or at the enclosure (zones).
6) Not for use with Ketone atmosphere.
7) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
8) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
9) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

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<td></td>
<td>2mm probe</td>
<td>2mm probe + HT extension</td>
</tr>
<tr>
<td></td>
<td>49°C</td>
<td>51°C</td>
</tr>
<tr>
<td></td>
<td>39°C</td>
<td>50°C</td>
</tr>
<tr>
<td></td>
<td>54°C</td>
<td>55°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>79°C</td>
</tr>
<tr>
<td>T3</td>
<td>83°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td></td>
<td>54°C</td>
<td>47°C</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Functional Ratings:

\[ V_{nom.} = 16-36 \text{ V} \]
\[ I_{nom.} = 4-20 \text{ mA or 3.8-20.5 mA}, \text{ error 3.6 mA or 22 mA} \]

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

Transmitter instrument overview

Note: to connect the remote cable please refer to the manual

Remote converter
Earth terminal (internal)
Terminal compartment (see connections)
Earth terminal (external)

Signal converter

OPTIFLEX 2200 F REMOTE
4-20 mA/HART
XP/DIP/Ex d/Ex tb

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL
WARNING: EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2

AVERTISSEMENT: RISQUE D'EXPLOSION. AVANT DE DEBRANCHER L'EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2
HAZARDOUS (CLASSIFIED) LOCATION
CL. I, DIV 1, GPS A, B, C, D
CL. II, DIV 1, GPS E, F, G
CL. III, DIV 1
CL. I, ZONE 1 (probe suitable for zone 0), IEC
ZONE 21 (probe suitable for zone 20), IEC

NON HAZARDOUS
(UNCLASSIFIED) LOCATION

CONNEXION FOR ENTITY AND FISCO CONCEPTS
OF 2 WIRING PROFIBUS PA AND FIELDBUS FF VERSIONS

Notes:
1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01
(except chapter 15 for FISCO installations), "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.
4) The intrinsic safety entity concept allows the interconnection of FM (respectively CSA) approved intrinsically safe apparatus with entity parameters not specifically examined in combination in a system when:
   \[ U_i (V_{max}) \leq U_{in} \]
   \[ I_i (I_{max}) \leq I_{in} \] or \( I_{max} \)
   \[ P_i (P_{max}) \leq P_{in} \] or \( P_{max} \)
5) The intrinsic safety FISCO concept allows the interconnection of FM (respectively CSA) approved intrinsically safe devices with FISCO parameters not specifically examined in combination in a system when:
   \[ U_i (V_{max}) \leq U_{in} \]
   \[ I_i (I_{max}) \leq I_{in} \] or \( I_{max} \)
   \[ P_i (P_{max}) \leq P_{in} \] or \( P_{max} \)
6) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
7) The polarity for connecting + and – is of no importance.
8) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
9) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
10) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE

CONNECTION FOR ENTITY AND FISCO CONCEPTS
OF 2 WIRE PROFIBUS PA AND FIELDBUS FF VERSIONS

FOR FURTHER CONDITIONS AND LIMITATIONS
SEE INSTRUCTION MANUAL

Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2mm probe</td>
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</tr>
<tr>
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<td>54°C</td>
</tr>
<tr>
<td>T5</td>
<td>67°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>79°C</td>
</tr>
<tr>
<td>T3</td>
<td>51°C</td>
<td>57°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
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</tbody>
</table>

Table 2:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Minimum ambient temperature</th>
<th>Minimum flange temperature</th>
</tr>
</thead>
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<tr>
<td></td>
<td>2mm probe</td>
<td>2mm probe + HT extension</td>
</tr>
<tr>
<td>T6-T1</td>
<td>-30°C</td>
<td>-39°C</td>
</tr>
</tbody>
</table>

Functional Ratings:
\[ V_{nom.} = 9-24 V \]
\[ I_{nom.} = 14 mA \]

These ratings do not supersede hazardous locations values.

FOR FURTHER CONDITIONS AND LIMITATIONS
SEE INSTRUCTION MANUAL

REV. by
<table>
<thead>
<tr>
<th>A.</th>
<th>Code</th>
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<th>Released by</th>
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<td>Material</td>
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</table>

CONTROL DRAWING

OPTIFLEX 2200 C COMPACT
PROFIBUS PA/FIELDBUS FF
IS/Ex ia
1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01 (except chapter 15 for FISCO installations), "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4) Cable entry must be sealed with 18" conduit of enclosure (divisions) or at the enclosure (zones).

5) Not for use with Ketone atmosphere.

6) The intrinsic safety entity concept allows the interconnection of FM (respectively CMA) approved intrinsically safe apparatus with entity parameters not specifically examined in combination in a system where:

\[ U_e (V_{in}) \leq U_s (V_{in}) \]
\[ I_e (I_{in}) \leq 1 \times I_{in} \]
\[ P_e (P_{in}) \leq P_{in} \]
\[ C_e (C_{in}) \geq C_{in} + C_{cable} \]
\[ L_e (L_{in}) \geq L_{in} + L_{cable} \]

7) The intrinsic safety FISCO concept allows the interconnection of FM (respectively CMA) approved intrinsically safe devices with FISCO parameters not specifically examined in combination in a system where:

\[ U_e (V_{in}) \leq U_s (V_{in}) \]
\[ I_e (I_{in}) \leq 1 \times I_{in} \]
\[ P_e (P_{in}) \leq P_{in} \]

8) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

9) The polarity for connecting + and – is of no importance.

10) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

11) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

12) Temperature Classes as a function of ambient temperature and flange temperature - see table 1.

Notes:

- For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
- These ratings do not supersede hazardous locations values.

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL.
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1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4) The Non-Incendive field wiring concept allows the interconnection of Non-Incendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when:
   - U0 (Vm) ≤ U0 (Vmax)
   - C0 (C) ≤ C0 (Cmax)
   - L0 (L) ≤ L0 (Lmax) + Lcable

5) The Non-Incendive field wiring concept allows the interconnection of Non-Incendive field wiring apparatus using FISCO parameters not specifically examined in combination as a system when:
   - U0 (Vm) ≤ U0 (Vmax)

6) I and P are not required and don't need to be aligned with parameter Imax and Pmax of the associated Non-Incendive field wiring apparatus.

7) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

8) The polarity for connecting + and – is of no importance.

9) The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

10) For class II, III, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

11) Temperature Classes as a function of ambient temperature and ground

For further conditions and limitations see instruction manual.

### Notes:

#### Parameters:

- Ui (Vmax) = 32 V
- Ci = 1 nF
- Li = 4 µH

#### Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2mm probe</td>
<td>2mm probe + HT extension</td>
</tr>
<tr>
<td>T6</td>
<td>52°C</td>
<td>52°C</td>
</tr>
<tr>
<td>T5</td>
<td>67°C</td>
<td>59°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>70°C</td>
</tr>
<tr>
<td>T3</td>
<td>51°C</td>
<td>51°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

#### Functional Ratings:

- Vm = 9-32 V
- I = 14 mA

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL.**

**WARNING:** EXPLOSIVE HAZARD. EXCEPT FOR FIELD CIRCUITS, DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2.

**AVERTISSEMENT:** RISQUE D'EXPLOSION. EXCEPTE POUR LES BUS DE TERRAIN, AVANT DE DEBRANCHER L'EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2.

**EQUIPMENT CUT THE CURRENT OR MAKE SURE THAT THE LOCATION IS NON DANGEROUS. WARNING:** RISQUE D'EXPLOSION. EXCEPTE POUR LES BUS DE TERRAIN, AVANT DE DEBRANCHER L'EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2.
**HAZARDOUS (CLASSIFIED) LOCATION**

CL. I, DIV 1, GPS A, B, C, D  
CL. II, DIV 1, GPS E, F, G  
CL. III, DIV 1  
CL. I, ZONE 1 (probe suitable for zone 0), IIC  
ZONE 21 (probe suitable for zone 20), IIC

---

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

---

**TRANSMITTER INSTRUMENT OVERVIEW**

---

**Entity Parameters**

$U_e (V_{max}) = 24 \text{ V}$  
$I_e (I_{max}) = 300 \text{ mA}$  
$P_e (P_{max}) = 3.22 \text{ W}$  
$C_e = 1 \text{ nF}$  
$L_e = 4 \mu\text{H}$

**FISCO Parameters**

$U_i (V_{max}) = 17.5 \text{ V}$  
$I_i (I_{max}) = 380 \text{ mA}$  
$P_i (P_{max}) = 1.2 \text{ W}$  
$C_i = 1 \text{ nF}$  
$L_i = 4 \mu\text{H}$

Note: to connect the remote cable please refer to the manual

Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature 2mm probe</th>
<th>Maximum ambient temperature 2mm probe + HT extension</th>
<th>Other probes</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>69°C</td>
<td>67°C</td>
<td>67°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T5</td>
<td>75°C</td>
<td>73°C</td>
<td>73°C</td>
<td>75°C</td>
</tr>
<tr>
<td>T4</td>
<td>85°C</td>
<td>83°C</td>
<td>83°C</td>
<td>85°C</td>
</tr>
<tr>
<td>T3</td>
<td>100°C</td>
<td>98°C</td>
<td>98°C</td>
<td>100°C</td>
</tr>
<tr>
<td>T2, T3</td>
<td>150°C</td>
<td>148°C</td>
<td>148°C</td>
<td>150°C</td>
</tr>
<tr>
<td>T4-T6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Minimum ambient temperature 2mm probe</th>
<th>Minimum ambient temperature 2mm probe + HT extension</th>
<th>Other probes</th>
<th>Minimum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6-T1</td>
<td>-90°C</td>
<td>-90°C</td>
<td>-90°C</td>
<td>-90°C</td>
</tr>
<tr>
<td>T5-T4</td>
<td>-40°C</td>
<td>-40°C</td>
<td>-40°C</td>
<td>-40°C</td>
</tr>
</tbody>
</table>

**Functional Ratings**

$V_{max} = 9-24 \text{ V}$  
$I_{max} = 14 \text{ mA}$  

These ratings do not supersede hazardous locations values.

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

---

**WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY  
**AVERTISSEMENT:** LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
### HAZARDOUS (CLASSIFIED) LOCATION

CL I, DIV 1, GPS A, B, C, D  
CL II, DIV 1, GPS E, F, G  
CL III, DIV 1  
CL I, ZONE 1 (for Zone 0), IIC  
ZONE 21 (for Zone 20), IIC

### NON HAZARDOUS (UNCATEGORIZED) LOCATION

Approved Associated Apparatus with Entity Parameters (see Note 6) or FISCO Power Supply (see Note 7)

### Notes:
1. Installation shall be in accordance with ANSI / ISA-RP 12.06.01 (except Chapter 15 for FISCO installations). "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 Part 1 for Canada.
2. No revision to this drawing without prior agency approval.
3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.
4. Cable entry must be sealed within 18" of the enclosure (divisions) or at the enclosure (zones).
5. Not for use with Ketone atmosphere.
6. The intrinsic safety entity concept allows the interconnection of FM (respectively CSA) approved intrinsically safe apparatus with entity parameters not specifically examined in combination in a system when:
   \[ U_i (V_{max}) \leq U_i (V_{in}) \]
   \[ L_i (L_{in}) \leq L_i (L_{in}) \]
   \[ P_i (P_{in}) \leq P_i (P_{in}) \]
   \[ C (C_{in}) \leq C (C_{in}) \]
   \[ L_i (L_{in}) \leq L_i (L_{in}) + L_i (L_{in}) \]

7. The intrinsic safety FISCO concept allows the interconnection of FM (respectively CSA) approved intrinsically safe devices with FISCO parameters not specifically examined in combination in a system when:
   \[ U_i (V_{max}) \leq U_i (V_{in}) \]
   \[ L_i (L_{in}) \leq L_i (L_{in}) \]
   \[ P_i (P_{in}) \leq P_i (P_{in}) \]
   \[ C (C_{in}) \leq C (C_{in}) \]
   \[ L_i (L_{in}) \leq L_i (L_{in}) + L_i (L_{in}) \]

8. Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
9. The polarity for connecting + and - is of no importance.
10. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ohm.
11. For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
12. Temperature classes as a function of ambient temperature and flange temperature - see Table 1.

### Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>2mm probe + HT extension</td>
<td>2mm probe + HT extension</td>
<td>Other probes</td>
</tr>
<tr>
<td>T6</td>
<td>49°C</td>
<td>49°C</td>
</tr>
<tr>
<td>T5</td>
<td>39°C</td>
<td>50°C</td>
</tr>
<tr>
<td>T4</td>
<td>54°C</td>
<td>55°C</td>
</tr>
<tr>
<td>T3</td>
<td>77°C</td>
<td>78°C</td>
</tr>
<tr>
<td>T2</td>
<td>71°C</td>
<td>59°C</td>
</tr>
<tr>
<td>T1</td>
<td>44°C</td>
<td>68°C</td>
</tr>
</tbody>
</table>

### Temperature Class:

- T1: Not allowed
- T2: Not allowed
- T3: Not allowed
- T4: Not allowed
- T5: Not allowed
- T6: Not allowed

### Functional Ratings:

- \[ V_{in} = 9 - 24 V \]
- \[ I_{in} = 14 mA \]

###for Further Conditions and Limitations

See Instruction Manual

---

**WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY  
**AVERTISSEMENT:** LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
HAZARDOUS (CLASSIFIED) LOCATION

CL. I, DIV 2, GPS A, B, C, D
CL. II, DIV 2, GPS E, F, G
CL. III, DIV 2
CL. I, ZONE 2, IIC

NON HAZARDOUS (UNCLASSIFIED) LOCATION

Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA C22.1, part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C
4) The Non-Incendive field wiring circuit concept allows the interconnection of Non-Incendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when:
   \[ U_i (V_{max}) \leq U (V_{max}) \]
   \[ C_i (C) \geq C + C_{\text{ext}} \]
   \[ L_i (\text{or} L_{\text{cable}}) \geq L_{\text{or} L_{\text{cable}}} \]
5) The Non-Incendive field wiring concept allows the interconnection of FM (respectively CSA) approved Non-Incendive devices with FISCO parameters not specifically examined in combination as a system when:
   \[ U_i (V_{max}) \leq U (V_{max}) \]
6) I and P are not required and don’t need to be aligned with parameter \( V_{\text{max}} \) and \( P_{\text{max}} \) of the associated non-incendive field wiring apparatus.
7) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
8) The polarity for connecting + and – is of no importance.
9) The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
10) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
11) Temperature Classes as a function of ambient temperature and flame temperature - see table 1

Table 1:

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Minimum ambient temperature</th>
<th>Maximum ambient temperature</th>
<th>Maximum flame temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2mm probe</td>
<td>6mm probe + HT extension</td>
<td>Other probes</td>
</tr>
<tr>
<td>T6</td>
<td>-40°C</td>
<td>-40°C</td>
<td>-40°C</td>
</tr>
<tr>
<td>T7</td>
<td>-40°C</td>
<td>-40°C</td>
<td>-40°C</td>
</tr>
<tr>
<td>T8, T9</td>
<td>-25°C</td>
<td>-25°C</td>
<td>-25°C</td>
</tr>
</tbody>
</table>

Functional Ratings:

\[ V_{\text{max}} = 9-32 \text{ V} \]
\[ \Sigma = 14 \text{ mA} \]

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

Notes:

WARNING: EXPLOSIVE HAZARD. EXCEPT FOR FIELD CIRCUITS, DO NOT CONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2

AVERTISSEMENT: RISQUE D’EXPLOSION. EXCEPTE POUR LES BUS DE TERRAIN, AVANT DE DEBRANCHER L’EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L’EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2

NI/Ex nA/Ex ic FISCO
### HAZARDOUS (CLASSIFIED) LOCATION

- CL. I, DIV I, GPS A, B, C, D
- CL. II, DIV I, GPS E, F, G
- CL. III, DIV I
- CL. I, ZONE 1 (antenna suitable for zone 0), IEC ZONE 21 (antenna suitable for zone 20), III C

### NON HAZARDOUS (UNCLASSIFIED) LOCATION

### WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

### TRANSMITTER INSTRUMENT OVERVIEW

- Terminal compartment (see connections)

### NOTES:

1. Installation shall be in accordance with ANSI / ISA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2. No revision to this drawing without prior agency approval.

3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4. To determine proper matching of I.S. equipment and the maximum cable length use the following matching formulas:
   
   $$ U_i (V_{max}) = 30 \text{ V} $$
   $$ I_i (I_{max}) = 300 \text{ mA} $$
   $$ L_i = 30 \mu\text{H} $$

5. Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

6. Connect the earth terminal (internal or external) with a minimum cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

7. A list of the location (internal or external) is required when the conduit is extended. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

8. A list of the location (internal or external) is required when the conduit is extended. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

9. Temperature Classes as a function of ambient temperature and flange temperature - see table 1.

### Table 1:

<table>
<thead>
<tr>
<th>T class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wave horn (PP)</td>
<td>Wave horn PTFE &amp; Wavestick</td>
</tr>
<tr>
<td>T6</td>
<td>45°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T5</td>
<td>38°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T4</td>
<td>38°C</td>
<td>39°C</td>
</tr>
<tr>
<td>T3</td>
<td>37°C</td>
<td>37°C</td>
</tr>
<tr>
<td>T2-T1</td>
<td>37°C</td>
<td>37°C</td>
</tr>
</tbody>
</table>

### Functional Ratings:

- $V_{nom.} = 12-30 \text{ V}$
- $I_{nom.} = 4-20 \text{ mA} \text{ or } 3.8-20.5 \text{ mA}$

### SYMBOLS:

- T = class
- M = minimum ambient temperature
- P = associated apparatus
- T = class
- L = length
- C = cable cross-section
- V = voltage
- I = current
- W = wave horn
- T = class
- H = horn extension
- E = extension

### FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL.

### OPTIONS:

- OPTIWAVE 5200 C COMPACT
- 4-20 mA/HART

### CAS (Romans.F)
HAZARDOUS (CLASSIFIED) LOCATION

1. Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2. No revision to this drawing without prior agency approval.
3. If ambient temperature > 65°C, use heat-resistant cable.
4. Power supply must not use or generate more than 250 Vrms or 200 Vdc.
5. Cable entry must be sealed within 18” conduit of enclosure.
6. Not for use with Ketone atmosphere.
7. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
8. For class II, III, use a dust tight seal at the conduit entry.
9. Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
10. Temperature Classes as a function of ambient temperature and flange temperature - see table 1

NON HAZARDOUS (UNCLASSIFIED) LOCATION

Table 1:

<table>
<thead>
<tr>
<th>T class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave horn</td>
<td>Wave horn PTFE</td>
<td>Wave horn PTFE with HT extension</td>
</tr>
<tr>
<td>T6</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T5</td>
<td>50°C</td>
<td>50°C</td>
</tr>
<tr>
<td>T4</td>
<td>70°C</td>
<td>70°C</td>
</tr>
<tr>
<td>T3</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T2</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Notes:

1. Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2. No revision to this drawing without prior agency approval.
3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +60°C.
4. Power supply must not use or generate more than 250 Vrms or 200 Vdc.
5. Cable entry must be sealed within 18” conduit of enclosure.
6. Not for use with Ketone atmosphere.
7. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
8. For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the flange temperature - see table 1.
9. Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
10. Temperature Classes as a function of ambient temperature and flange temperature - see table 1.

FOR FURTHER CONDITIONS AND LIMITATIONS
SEE INSTRUCTION MANUAL

TRANSMITTER INSTRUMENT OVERVIEW

Terminal compartment (see connections)

Earth terminal (internal)

Earth terminal (external)

Optiwave 5200 C compact 4-20 mA/HART
XP/DIP/Ex d/Ex tb

Sensible Ex
HAZARDOUS (CLASSIFIED) LOCATION
CL. I, DIV 2, GPS A, B, C, D
CL. II, DIV 2, GPS E, F, G
CL. III, DIV 1
CL. I, ZONE 1, IIC

NON HAZARDOUS
(UNCLASSIFIED) LOCATION

Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.
4) Intrinsic safety barrier not required.
5) Not for use with Ketone atmosphere.
6) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
7) For class II, III, use a dust tight seal at the conduit entry.
8) Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
9) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

Table 1:

<table>
<thead>
<tr>
<th>T class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wave horn PP</td>
<td>Wave horn PTFE &amp; Wavestick</td>
</tr>
<tr>
<td>T6</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td></td>
<td>43°C</td>
<td>43°C</td>
</tr>
<tr>
<td></td>
<td>38°C</td>
<td>38°C</td>
</tr>
<tr>
<td>T5</td>
<td>53°C</td>
<td>53°C</td>
</tr>
<tr>
<td></td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>77°C</td>
</tr>
<tr>
<td></td>
<td>69°C</td>
<td>69°C</td>
</tr>
<tr>
<td></td>
<td>51°C</td>
<td>51°C</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T3</td>
<td>50°C</td>
<td>50°C</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Functional Ratings:

- $V_{nom.} = 16\text{~V}$
- $I_{nom.} = 4-20\text{~mA}$ or $3.8-20.5\text{~mA}$, error $3.6\text{~mA}$ or $22\text{~mA}$

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

WARNING: EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2.


CONTROL DRAWING

OPTIWISE 5200 C COMPACT
4-20 mA/HART
Ni/Ex nA

KSAS (Romans.F)
### HAZARDOUS (CLASSIFIED) LOCATION

- CL. I, DIV 1, GPS A, B, C, D
- CL. II, DIV 1, GPS E, F, G
- CL. III, DIV 1
- CL. I, ZONE 1 (antenna suitable for zone 0), IIIC

### NON HAZARDOUS (UNCLASSIFIED) LOCATION

- CL. II, III, DIV 1, GPS E, F, G

---

**Entity Parameters:**
- $U_i (V_{max}) = 30 V$
- $I_i (Imax) = 300 mA$
- $C_i = 30 \mu F$
- $L_i = 30 \mu H$

---

**Notes:**
1. Installation shall be in accordance with ANSI / ISEA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2. No revision to this drawing without prior agency approval.
3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above 80°C.
4. To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:
   - $U_{in} (V_{max}) < U_i (V_{max})$
   - $I_{in} (Imax) < I_i (Imax)$
   - $P_{in} < P_i (P_{max})$
   - $C_{in} (C_{max}) < C_i (C_{max})$
   - $L_{in} (L_{max}) < L_i (L_{max})$
5. Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.
6. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.
7. For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.
8. Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
9. Temperature Classes as a function of ambient temperature and flange temperature - see table 1

---

**Table 1:**

<table>
<thead>
<tr>
<th>T class</th>
<th>Maximum ambient temperature</th>
<th>Minimum ambient temperature</th>
<th>Maximum flange temperature</th>
<th>Minimum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>40°C</td>
<td>40°C</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T3</td>
<td>Not allowed</td>
<td>55°C</td>
<td>Not allowed</td>
<td>55°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>Not allowed</td>
<td>79°C</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

**Functional Ratings:**

- $V_{max} = 12-30 V$
- $L_{max} = 4-20 mA$ or $3.8-20.5 mA$, error 3.6 mA or 22 mA.

These ratings do not supersede hazardous locations values.

---

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL**

---

**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY**

**AVIS DE RISQUE: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEE**

---

**TRANSMITTER INSTRUMENT OVERVIEW**

- Remote converter
- Earth terminal (internal)
- Signal converter
- Terminal compartment (see connections)
- Earth terminal (external)
- Remote cable (max. 100 m)

---

**OPTIWISE 5200 F REMOTE**

4-20 mA/HART

- Sensible Ex
- Scale

**KSAS (Romans,F)**

**Control drawing**

- Standard checked
- Drawn
- Released by
- Material

---

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL**
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1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable (divisions) or at the enclosure (zones).

4) Power supply must not use or generate more than 250 Vrms or Vdc.

5) Cable entry must be sealed within 18" conduit of enclosure (internal or external).

6) Not for use with Ketone atmosphere.

7) Connect the earth terminal (internal or external) with a minimum cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

8) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

9) Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g., do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

10) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

---

**Table 1:**

<table>
<thead>
<tr>
<th>Class</th>
<th>Maximum ambient temperature (°C)</th>
<th>Minimum ambient temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>46°C</td>
<td>28°C</td>
</tr>
<tr>
<td>T5</td>
<td>54°C</td>
<td>46°C</td>
</tr>
<tr>
<td>T4</td>
<td>77°C</td>
<td>69°C</td>
</tr>
<tr>
<td>T3</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

---

**Functional Ratings:**

- Vnom = 16-36 V
- Inom = 4-20 mA or 3.8-20.5 mA, error 3.6 mA or 22 mA

---

**GENERAL NOTES:**

- Use 2 WIRES / 4…20 mA HART VERSION
- For further conditions and limitations see instruction manual

---

**REMOTE CONTROL DRAWING**

- OPTIWAVE 5200 F REMOTE 4-20 mA/HART
- XP/DIP/Ex d/Ex tb
- Sensible Ex

**ENGINEER**

- ATH

**DRAWN**

- VPI

**STANDARD CHECKED**

- VPI

**REleased by**

- VPI

**Material**

- KSAS (Romans, F)

**Sensible Ex**

- Scale

---

**HAZARDOUS (CLASSIFIED) LOCATION**

- CL. I, DIV 1, GPS A, B, C, D (B, C, D for Canada)
- CL. II, DIV 1, GP E, F, G
- CL. III, DIV 1
- CL. I, ZONE 1 (antenna suitable for zone 0), IIC
- ZONE 21 (antenna suitable for zone 20), IIIC

---

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

- Power supply (see note 4)

---

**CONNECTIONS OF 2 WIRES / 4…20 mA HART VERSION**

---

**TRANSMITTER INSTRUMENT OVERVIEW**

- Earth terminal (internal)
- Terminal compartment (see connections)
- Remote cable (max. 100 m)
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**HAZARDOUS (CLASSIFIED) LOCATION**

- CL. I, DIV. 2, GPS A, B, C, D
- CL. II, DIV. 2, GPS E, F, G
- CL. III, DIV. 2
- CL. I, ZONE 2, IIC

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

**Notes:**

1. Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2. No revision to this drawing without prior agency approval.
3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.
4. Intrinsic safety barrier not required.
5. Not for use with Ketone atmosphere.
6. No revision to this drawing without prior agency approval.
7. For class II, III, use a dust tight seal at the conduit entry.
8. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω
9. Temperature Classes as a function of ambient temperature and flange temperature - see table 1

**Functional Ratings:**

- Sinusoidal AC voltage (Class I) 230 V
- Wave horn, shell temperature +70°C
- Wave horn, flange temperature see table 1
- Power supply - Vnom. = 16-36 V, Inom. = 4-20 mA or 3.8-20.5 mA, error 3.6 mA or 22 mA

**Table 1:**

<table>
<thead>
<tr>
<th>Class</th>
<th>Maximum ambient temperature (°C)</th>
<th>Minimum flange temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>45°C, 40°C, 39°C, 43°C, 41°C</td>
<td>-80°C, -70°C, -60°C, -40°C, -20°C</td>
</tr>
<tr>
<td>T4</td>
<td>65°C, 63°C, 60°C, 62°C, 58°C</td>
<td>-50°C, -40°C, -30°C, -20°C, -10°C</td>
</tr>
<tr>
<td>T3</td>
<td>75°C, 72°C, 70°C, 71°C, 66°C</td>
<td>-40°C, -30°C, -20°C, -10°C, 0°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>85°C, 82°C, 80°C, 81°C, 75°C</td>
<td>-30°C, -20°C, -10°C, 0°C, 10°C</td>
</tr>
</tbody>
</table>

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL.**

---

**WARNING:** EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2.

**AVERTISSEMENT:** RISQUE D'EXPLOSION. AVANT DE DEBRANCHER L'ÉQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2.

**TRANSMITTER INSTRUMENT OVERVIEW**

- Remote converter
- Earth terminal (internal)
- Terminal compartment (see connections)

**Remote cable (max. 100 m)**

**FUNCTIONAL SPECIFICATION**

- NI/Ex nA
- Sensible Ex
- 4-20 mA/HART

---

**FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL.**

---

**WARNING:** EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2.

**AVERTISSEMENT:** RISQUE D'EXPLOSION. AVANT DE DEBRANCHER L'ÉQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L'EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LA DIV 2.
HAZARDOUS (CLASSIFIED) LOCATION

CL. I, DIV. 1, GPS A, B, C, D
CL. II, DIV. 1, GPS E, F, G
CL. III, DIV. 1
CL. I, ZONE 1 (antenna suitable for zone 0), IIC
ZONE 21 (antenna suitable for zone 20), IIIIC

NON HAZARDOUS (UNCLASSIFIED) LOCATION

Approved Associate Apparatus with Entity Parameters (see Note 4) or FISCO Power Supply (see Note 5)

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINESE
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AVERTISSEMENT
WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

Table 1:

<table>
<thead>
<tr>
<th>Class</th>
<th>Minimum ambient temperature</th>
<th>Maximum ambient temperature</th>
<th>Minimum flange temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6-1</td>
<td>-40°C</td>
<td>-40°C</td>
<td>-37°C</td>
<td>-60°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Functional Ratings:

Vnom. = 9-24 V
Iin = 14 mA

These ratings do not supersede hazardous locations values.

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
23

HAZARDOUS (CLASSIFIED) LOCATION
CL. I, DIV 2, GPS A, B, C, D
CL. II, DIV 2, GPS E, F, G
CL. III, DIV 2
CL. I, ZONE 1, 2, 3C

NON HAZARDOUS (UNCLASSIFIED) LOCATION

Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +65°C.
4) The Non-Incendive field wiring concept allows the interconnection of Non-Incendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when:
   - $U_i(V_{max}) \leq U_i(V_{nom})$
   - $C_i \leq C + C_{max}$
   - $L_i \leq L_i + L_{max}$. 
5) The Non-Incendive field wiring concept allows the interconnection of Non-Incendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when:
   - $U_i(V_{max}) \leq U_i(V_{nom})$
   - $C_i \leq C + C_{max}$
   - $L_i \leq L_i + L_{max}$.
6) No revision to this drawing without prior agency approval.
7) Control equipment connected to the associated apparatus must not be used or generate more than 250 V rms or V dc.
8) The polarity for connecting + and – is of no importance.
9) The resistance between intrinsically safe ground and earth must be less than 1.0 Ω.
10) For class II, III, use a dust tight seal at the conduit entry.
11) For classes I,II, III, use a dust tight seal at the conduit entry.
12) Avoid Electrostatic charge of the Wave horn or Wavestick antenna (e.g., do not install in a location where the Electrostatic charge can increase, do not rub with dry cloth).
13) Temperature Classes as a function of ambient temperature and flange temperature - see below.

FOR FURTHER CONDITIONS AND LIMITATIONS
SEE INSTRUCTION MANUAL

---

TABLE 1:

<table>
<thead>
<tr>
<th>Class</th>
<th>Minimum ambient temperature</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wave horn PP</td>
<td>Wave horn PTFE</td>
<td>Metallic horn without HT extension</td>
</tr>
<tr>
<td>T6</td>
<td>40°C</td>
<td>46°C</td>
<td>46°C</td>
</tr>
<tr>
<td>T6</td>
<td>38°C</td>
<td>40°C</td>
<td>39°C</td>
</tr>
<tr>
<td>T5</td>
<td>53°C</td>
<td>54°C</td>
<td>58°C</td>
</tr>
<tr>
<td>T3</td>
<td>77°C</td>
<td>77°C</td>
<td>79°C</td>
</tr>
<tr>
<td>T3</td>
<td>57°C</td>
<td>54°C</td>
<td>71°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

---

WAVYSTICK 5200 C COMPACT
PROFIBUS PA/FIELDBUS FF
OPTIWAVE 5200 C COMPACT
PROFIBUS PA/FIELDBUS FF
NI/Ex nA/Ex ic FISCO

---

WARNING: EXPLOSIVE HAZARD. EXCEPT FOR FIELD CIRCUITS, DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. II
AVERTISSEMENT: RISQUE D’EXPLOSION. EXCEPTE POUR LES CIRCUITS DE TERRAIN, AVANT DE DEBRANCHER L’ÉQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L’EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LA DIV 2

---

OPTIWAVE 5200 C COMPACT
PROFIBUS PA/FIELDBUS FF
NI/Ex nA/Ex ic FISCO

---

KSAS (Romans/F)

---

9/12
### NOTES:

1. Installation shall be in accordance with ANSI / ISA-RP 12.06.01 (except chapter 15 for FISCO installations), "Installation of Intrinsically Safe Systems for Hazardous (classified) locations", and articles 500 to 510 of the National Electric Code ANSI / NPPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2. No revision to this drawing without prior agency approval.

3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4. The intrinsic safety concept allows the interconnection of FM (respectively CSA) approved intrinsically safe apparatus with entity parameters not specifically examined in combination in a system when:

   - \( U_i = U \) (Vi)
   - \( L_i = L \) (Li)
   - \( P_i = P \) (Pi)
   - \( C_i = C \) (Ci)
   - \( i_i (Imax) = i_i (Imax) \)
   - \( P_i (Pmax) = P_i (Pmax) \)

5. The intrinsic safety FISCO concept allows the interconnection of FM (respectively CSA) approved intrinsically safe devices with FISCO parameters not specifically examined in combination as a system when:

   - \( U_i = U \) (Vi)
   - \( L_i = L \) (Li)
   - \( P_i = P \) (Pi)
   - \( C_i = C \) (Ci)
   - \( i_i (Imax) = i_i (Imax) \)
   - \( P_i (Pmax) = P_i (Pmax) \)

6. Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

7. The polarity for connecting the screw terminal (internal or external) with a minimum cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1Ω.

8. Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

9. For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

10. Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

11. Temperature Classes as a function of ambient temperature and flame temperature - see table 1.

### TABLE 1:

#### Table 1: Maximum ambient temperature

<table>
<thead>
<tr>
<th>T class</th>
<th>Wave horn</th>
<th>Wave horn</th>
<th>Metallic horn</th>
<th>Metallic horn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PP</td>
<td>PTFE &amp; Wavestick</td>
<td>without HT extension</td>
<td>with HT extension</td>
</tr>
<tr>
<td>T4</td>
<td>47°C</td>
<td>46°C</td>
<td>46°C</td>
<td>46°C</td>
</tr>
<tr>
<td>T5</td>
<td>43°C</td>
<td>41°C</td>
<td>41°C</td>
<td>41°C</td>
</tr>
<tr>
<td>T6</td>
<td>37°C</td>
<td>37°C</td>
<td>37°C</td>
<td>37°C</td>
</tr>
<tr>
<td>T7</td>
<td>31°C</td>
<td>31°C</td>
<td>31°C</td>
<td>31°C</td>
</tr>
</tbody>
</table>

#### Table 1: Minimum ambient temperature

<table>
<thead>
<tr>
<th>T class</th>
<th>Wave horn</th>
<th>Wave horn</th>
<th>Metallic horn</th>
<th>Metallic horn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PP</td>
<td>PTFE &amp; Wavestick</td>
<td>without HT extension</td>
<td>with HT extension</td>
</tr>
<tr>
<td>T6-T7</td>
<td>30°C</td>
<td>30°C</td>
<td>30°C</td>
<td>30°C</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

### FUNCTIONAL RATINGS:

- \( U_i = 9-24 \) V
- \( i_i = 14 \) mA

These ratings do not supersede hazardous locations values.

### FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

**WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

**AVERTISSEMENT:** LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
HAZARDOUS (CLASSIFIED) LOCATION

CL 1, DIV I, GPS A, B, C, D
CL 11, DIV I, GPS E, F, G
CL III, DIV I
CL 1, ZONE 1 (probe suitable for zone 0), IIC
ZONE 21 (probe suitable for zone 20), IIC

NON HAZARDOUS (UNCLASSIFIED) LOCATION

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE

1) Temperature Classes as a function of ambient temperature and
2) Avoid electrostatic charge of the Wave horn or Wavestick
3) For class II, III, use a dust tight seal at the conduit entry.
4) Cable entry must be sealed within 18" conduit of enclosure
5) The polarity for connecting + and – is of no importance.
6) Control equipment connected to the associated apparatus must
7) The intrinsic safety FISCO concept allows the interconnection of
8) Cable entry must be sealed within 18" conduit of enclosure
9) The bare earth terminal (internal or external) with a min.
10) Connect the earth terminal (internal or external) with a min.
11) For class II, III, use a dust tight seal at the conduit entry.
12) Avoid electrostatic charge of the Wave horn or Wavestick
13) Temperature Classes as a function of ambient temperature and

Table 1:

<table>
<thead>
<tr>
<th>Class</th>
<th>Maximum ambient temperature</th>
<th>Maximum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td></td>
<td>50°C</td>
<td>50°C</td>
</tr>
<tr>
<td>T5</td>
<td>35°C</td>
<td>35°C</td>
</tr>
<tr>
<td></td>
<td>45°C</td>
<td>45°C</td>
</tr>
<tr>
<td>T4</td>
<td>30°C</td>
<td>30°C</td>
</tr>
<tr>
<td></td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T3</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td></td>
<td>30°C</td>
<td>30°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Table 2:

<table>
<thead>
<tr>
<th>Class</th>
<th>Minimum ambient temperature</th>
<th>Minimum flange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6-T1</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td></td>
<td>50°C</td>
<td>50°C</td>
</tr>
<tr>
<td></td>
<td>35°C</td>
<td>35°C</td>
</tr>
<tr>
<td></td>
<td>45°C</td>
<td>45°C</td>
</tr>
<tr>
<td></td>
<td>30°C</td>
<td>30°C</td>
</tr>
<tr>
<td></td>
<td>40°C</td>
<td>40°C</td>
</tr>
</tbody>
</table>

Note: to connect the remote cable please refer to the manual

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1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) No revision to this drawing without prior agency approval.

3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4) The Non-Incendive field wiring concept allows the interconnection of FM (respectively CSA) approved Non-Incendive devices with FISCO parameters not specifically examined in combination as a system when:
   \[ U_i (V_{max}) = 32 \text{ V} \]

5) The Non-Incendive field wiring concept allows the interconnection of Non-Incendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when:
   \[ U_i (V_{max}) = 17.5 \text{ V} \]

6) Wave horn or Wavestick:
   \[ C = 1 \text{ HF} \]

7) Control equipment connected to the associated apparatus must not use or generate more than 250 Vrms or Vdc.

8) The polarity for connecting = and _ is of no importance.

9) The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

10) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

11) Avoid electrostatic charge of the Wave horn or Wavestick antenna (e.g., do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

12) Temperature Classes as a function of ambient temperature and flange temperature - see table 1

Table 1:

<table>
<thead>
<tr>
<th>Wave horn PP</th>
<th>Wave horn PTFE &amp; Wavestick</th>
<th>Metallic horn without HT extension</th>
<th>Metallic horn with HT extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>46°C</td>
<td>46°C</td>
<td>46°C</td>
</tr>
<tr>
<td>T6</td>
<td>41°C</td>
<td>41°C</td>
<td>41°C</td>
</tr>
<tr>
<td>T5</td>
<td>34°C</td>
<td>34°C</td>
<td>34°C</td>
</tr>
<tr>
<td>T4</td>
<td>30°C</td>
<td>30°C</td>
<td>30°C</td>
</tr>
<tr>
<td>T3</td>
<td>27°C</td>
<td>27°C</td>
<td>27°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

Functional Ratings:

\[ V_{nom} = 9-32 \text{ V} \]

\[ I_{nom} = 14 \text{ mA} \]

For further conditions and limitations see instruction manual.

WARNING: EXPLOSIVE HAZARD. EXCEPT FOR FIELD CIRCUITS, DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2.

HAZARDOUS LOCATION
CL. I, DIV 1/2, GP A, B, C, D
CL. II, DIV 1/2, GP E, F, G, CL. III
Ex ia, IIC, CL. I, ZONE 0/1/2
WITH NON INCENITIVE INTEGRAL PROBE SUITABLE FOR
USE IN:
CL. I, GP A, B, C, D, CL. II, GP E, F, G, CL. III
CL. I, ZONE 0, IIC
CL. I, DIV 2, GP A, B, C, D, CL. II, DIV 2, GP F, G

NOTES:
1) Installation must be in accordance with the Canadian Electrical Code, section 18
2) No revision to this drawing without prior agency approval.
3) To determine proper matching of I.S. Equipment and the maximum cable length use the following entity parameter matching formulas:
   \[ V_{in} \leq V_{n} \leq V_{inj} \]
   \[ I_{in} \leq I_{n} \leq I_{inj} \]
   \[ C_{in} \leq C_{n} \leq C_{inj} \]
   \[ L_{in} \leq L_{n} \leq L_{inj} \]
4) Temperature Classifies as a function of ambient temperature and process temperature - see table 1

Table 1
<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>Maximum process temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>57°C</td>
<td>60°C</td>
</tr>
<tr>
<td>T5</td>
<td>49°C</td>
<td>85°C</td>
</tr>
<tr>
<td>T4</td>
<td>72°C</td>
<td>75°C</td>
</tr>
<tr>
<td>T1</td>
<td>65°C</td>
<td>100°C</td>
</tr>
<tr>
<td>T3</td>
<td>60°C</td>
<td>110°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>65°C</td>
<td>135°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>60°C</td>
<td>150°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>55°C</td>
<td>180°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>50°C</td>
<td>200°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>50°C</td>
<td>250°C</td>
</tr>
<tr>
<td>Not allowed</td>
<td>50°C</td>
<td>300°C</td>
</tr>
</tbody>
</table>

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

WARNING – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

All revisions must be submitted to CSA International

Maßstab/SCALE: 1:2,5

PROBE

GAS TIGHT

INTRINSICALLY SAFE

NOTE: Probe is suitable for use in Zone 0 / 1 / 2 and DIV 1 / 2 areas.
HAZARDOUS LOCATION

CL 1, DIV 1/2, GP A, B, C, D (IN ANSI)
CL 2, DIV 1/2, GP E, F, G, CL III
AEx ia IIC, CL 1, ZONE 0/1/2
WITH 1S, OR NON-INCRUSTING INTEGRAL PROBE
SUITABLE FOR USE IN:
CL 1, GP A, B, C, D, CL 2, GP E, F, G, CL III
CL 1, ZONE 0, IIC
CL 1, DIV 2, GP A, B, C, D, GP E, F, G

NON HAZARDOUS LOCATION

Approved Associated Apparatus

Current Output
4-20mA+ HART
(passive)

Entity Parameters
Each circuit:
V_O = 30 V
I_O = 200 mA
P_O = 1 W
C = 30 nF
L = 200 µH
L_H ≥ 200 µH + L_min

NOTES:

1) Installation should be in accordance with ANSI / ISA RP 12.6, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and the National Electric Code ANSI / NFPA 70.

2) No revision to this drawing without prior agency approval.

3) To determine proper matching of I.S. Equipment and the maximum cable length use the following entity parameter matching formulas:

   I_x = I_o OR V_x = V_o OR V_x = 1.1 V_o

   OR I_x = I_C OR V_x = V_C OR V_x = I_C x R_C

4) Temperature Classes as a function of ambient temperature and process temperature - see table 1

Table 1

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Maximum ambient temperature</th>
<th>2mm probe</th>
<th>2mm probe + HT extension</th>
<th>Other probes</th>
<th>Maximum process temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>57°C</td>
<td>57°C</td>
<td>57°C</td>
<td>57°C</td>
<td>60°C</td>
</tr>
<tr>
<td>T5</td>
<td>40°C</td>
<td>40°C</td>
<td>40°C</td>
<td>40°C</td>
<td>40°C</td>
</tr>
<tr>
<td>T4</td>
<td>72°C</td>
<td>72°C</td>
<td>72°C</td>
<td>72°C</td>
<td>72°C</td>
</tr>
<tr>
<td>T3</td>
<td>60°C</td>
<td>60°C</td>
<td>60°C</td>
<td>60°C</td>
<td>60°C</td>
</tr>
<tr>
<td>T2, T1</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>Not allowed</td>
<td>55°C</td>
</tr>
</tbody>
</table>

FOR FURTHER CONDITIONS AND LIMITATIONS SEE INSTRUCTION MANUAL

WARNING – DO NOT REMOVE COVER IF CIRCUITS ARE LIVE
WARNING – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
OR SUITABILITY FOR USE IN DIV. 2

All revisions must be submitted to FM Approvals

Maßstab/SCALE: 1:2.5

CONTROL DRAWING OPTIFLEX
1300C Ex i d

KROHNE

F08.209505.16
HAZARDOUS LOCATION
Ex d, IIC, Cl. I, ZONE 1
MUST BE SEALED WITHIN 18" OF ENCLOSURE
Cl. II 2, GP A, B, C, D,
Cl. I, DIV 2, GP A, B, C, D;
Cl. II, DIV 2, GP F, G
Ex ma, IIC, Cl. I, ZONE 2
WITH NON INCENDIE INTEGRAL ANTENNA SUITABLE FOR
USE IN:
Cl. I, GP A, B, C, D; Cl. II, GP E, F, G
Cl. I, ZONE 6, IIC
Cl. I, DIV 2, GP A, B, C, D; Cl. II, DIV 2, GP F, G

NON HAZARDOUS LOCATION

Entity Parameters
Max output voltage
Uo ≤ 36V
Vin = 230V AC
Absolute max voltage
Uo ≤ 250V AC

Current Output
4-20mA+ HART
(passive)

Optional
Current Output
4-20mA
(passive)

NOTES:
1) Installation must be in accordance with the Canadian Electrical Code, section 18.
2) No revision to this drawing without prior agency approval.
3) Temperature Classes as a function of ambient temperature and process temperature - see table 1

Table 1
<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max ambient temperature</th>
<th>Max process temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna without distance piece</td>
<td>55°C</td>
<td>60°C</td>
</tr>
<tr>
<td>Antenna with distance piece</td>
<td>52°C</td>
<td>60°C</td>
</tr>
</tbody>
</table>

For further conditions and limitations see instruction manual.

WARNING – DO NOT CONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON HAZARDOUS
WARNING – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2

All revisions must be submitted to CSA International

Maßstab/SCALE: 1:2.5

CONTROL DRAWING OPTIWAVE
6300 C AND 7300 C XP/Ex d

KROHNE
F08.209607.63 | A

Rep | Modification | Date | Non | Format | A3 | Print
ems 006038 04/13 FFA

B A C D E F G H
## Notes:

### 1. Installation shall be in accordance with ANSI / ISA-12.04.01.01.

### 2. For 2 wires / 4 wires M.A. PART VERSION.

### 3. If M.A. PART VERSION above 4wires:

### 4. A THOLET

### 5. Control equipment connected to the associated apparatus must not generate or use more than 250 Vrms or Vdc.

### 6. Connect the earth terminal (internal or external) with a min. cable cross-section 4mm². The resistance between intrinsically safe ground and earth ground must be less than 1.0 Ω.

### 7. For class II, III, use a dust tight seal at the conduit entry.

### 8. No revision to this drawing without prior agency approval.

### 9. Temperature Classes as a function of ambient temperature and process temperature (or process connection temperature) - see articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Code CAN/CSA C120.0.2000.

### 10. The gasket and antenna material temperatures must be in the approved limits. For more data, refer to the handbook.
WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01, Canadian electrical code CSA 22.1 part 1 for Canada.
2) No revision to this drawing without prior agency approval.
3) If ambient temperature (or process connection temperature) - see tables.
4) To determine proper matching of I.S. equipment and the hazardous locations values with Entity Parameters (see Note 4).
5) Use or generate more than 250 Vrms or Vdc.
6) Connect the earth terminal (internal or external) with a min. 100 Ω resistance between intrinsically safe ground and earth ground.
7) For class II, III, use a dust tight seal at the conduit entry.
8) Avoid elec...
9) Temperature Classes as a function of ambient temperature and
10) The gasket temperatures must be in the approved limits. For more data, refer to the handbook.

NOTES:

- Optiwave 3500 C cannot be used with Entity Parameters (see Note 4).

<table>
<thead>
<tr>
<th>Temperature CLASS</th>
<th>Entity Parameters</th>
<th>Temperature class</th>
<th>Temperature class</th>
<th>Temperature class</th>
<th>Temperature class</th>
</tr>
</thead>
<tbody>
<tr>
<td>T200°C</td>
<td>1</td>
<td>T4</td>
<td>-40°C</td>
<td>OPTIWAVE 3500 C</td>
<td>OPTIWAVE 3500 C</td>
</tr>
<tr>
<td>T100°C</td>
<td>1</td>
<td>T5</td>
<td>+40°C</td>
<td>OPTIWAVE 3500 G</td>
<td>OPTIWAVE 3500 G</td>
</tr>
<tr>
<td>T53°C</td>
<td>2</td>
<td>T6</td>
<td>+50°C</td>
<td>OPTIWAVE 3500 W</td>
<td>OPTIWAVE 3500 W</td>
</tr>
<tr>
<td>T65°C</td>
<td>2</td>
<td>T7</td>
<td>+60°C</td>
<td>OPTIWAVE 6000 C</td>
<td>OPTIWAVE 6000 C</td>
</tr>
<tr>
<td>T85°C</td>
<td>2</td>
<td>T8</td>
<td>+70°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T115°C</td>
<td>2</td>
<td>T9</td>
<td>+85°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T135°C</td>
<td>2</td>
<td>T10</td>
<td>+100°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OPTIWAVE 3500/6500/7500 CONTROL DRAWING
OF CONNECTIONS FOR ENTITY CONCEPT

CONNECTIONS FOR ENTITY CONCEPT

HAZARDOUS (CLASSIFIED) LOCATION

NON HAZARDOUS LOCATION

The Ech. can be used as an ambient temperature. The Ech. can be used as a process temperature (or process connection temperature) - see tables. The Ech. can be used as a function of ambient temperature and...
LIST OF MATERIALS

1. OPTIWAVE 5400/6400/7400 C

TABLES

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. ambient temperature</th>
<th>Min. process temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>85°C</td>
<td>60°C</td>
<td>60°C</td>
</tr>
<tr>
<td>T5</td>
<td>100°C</td>
<td>75°C</td>
<td>75°C</td>
</tr>
<tr>
<td>T4</td>
<td>130°C</td>
<td>115°C</td>
<td>130°C</td>
</tr>
<tr>
<td>T3</td>
<td>200°C</td>
<td>180°C</td>
<td>200°C</td>
</tr>
</tbody>
</table>

NOTES:

1. Connection of 2 wires / 4-20 mA HART VERSION

2. In hazardous (classified) location, see Note 4.

3. For more data, refer to the handbook.

4. Connection of 2 wires / 4-20 mA HART VERSION

5. Cavities must be sealed within 18 cm of the sensor.

6. For Class II, Zone 1 and Zone 2, use a diaphragm and restrictor to the correct safety category.

7. For Class I, Zone 1, use a diaphragm and restrictor to the correct safety category.

8. Ambient conditions of the sensor and transducer must be within the approved limit.

9. In hazardous (classified) location, see Note 4.

10. For further limitations, see Instruction Manual.
### Functional Ratings:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>40°C</td>
<td>100°C</td>
<td>190°C</td>
<td>5°C</td>
</tr>
<tr>
<td>II</td>
<td>40°C</td>
<td>150°C</td>
<td>240°C</td>
<td>5°C</td>
</tr>
<tr>
<td>III</td>
<td>40°C</td>
<td>200°C</td>
<td>330°C</td>
<td>5°C</td>
</tr>
<tr>
<td>IV</td>
<td>40°C</td>
<td>250°C</td>
<td>420°C</td>
<td>5°C</td>
</tr>
</tbody>
</table>

**Notes:**

1. Connections of 2 wires / 4-20 mA HART version

2. Power supply (see note 4)

3. Antenna suitable for zone 0 and zone 21

4.同學-rounding 43X0.5W6500/7500 Optiwave 3500

**FOR FURTHER LIMITATIONS**

- There are no safety-related or hazardous areas values.
- For more data, refer to the handbook.
- The upper and lower ambient temperatures must be in the Approved Limits.
- Functional Ratings are a function of ambient temperature - see Note 4.

**Additional Notes:**

- Sensible Ex
- IP 6X
- Anti-slip
- IP 6X
- Wet
- Optiwave 3500/6500/7500 Optiwave 3500 C is rated -40°C

**Control Drawing:**

---

**Code and Change:**

- APFR 490631.1301
- Rev 1/1
**Notes**

For further limitations see Instruction manual.

**Table 2**

<table>
<thead>
<tr>
<th>Class</th>
<th>Max. process temperature (°C)</th>
<th>Min. process temperature (°C)</th>
<th>Ambient temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optiwave 5400 C</td>
<td>130°C</td>
<td>50°C</td>
<td>40°C</td>
</tr>
<tr>
<td>Optiwave 6400 C</td>
<td>130°C</td>
<td>50°C</td>
<td>40°C</td>
</tr>
<tr>
<td>Optiwave 7400</td>
<td>130°C</td>
<td>50°C</td>
<td>40°C</td>
</tr>
</tbody>
</table>

**Revisions**

- Doc. type
- Ech
- Folio
- Release
- KSAS
- (Romans, FRANCE)

---

**Connection for Non Incendive Concept**

- 2 wires (UNCLASSIFIED LOCATION)
- Optiwave 5400 C, 6400 C, 7400 (unclassified) location
- Non hazardous

---

**Connection for Hazardous Concept**

- 2 wires (CLASSIFIED LOCATION)
- Optiwave 5400 C, 6400 C, 7400
- Hazardous

---

**Functional Ratings**

- A.T.HOLLET 13/06/2017
- A.T.HOLLET

---

**Surface Condition**

- Edge of parts
- General Tolerances
- Material
- Status
- Code d'article
- Status
- Rev
- _1/1_
**WARNING:** EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTE OF COMPONENTS MAY MAKE EQUIPMENT UNFIT FOR USE IN DIV. 2. IMPOSSIBILITÉ DE SUBSTITUTER DES COMPOSANTS SANS QUE L’ÉQUIPEMENT NE SOIT DÉBRANCHE ET LES COMPOSANTS NE SOIT INTÉGRÉ À L’ÉQUIPEMENT AU CÔTE DUquel. SUBSTITUTION DE COMPOSANTS MAY RENDRE CE MATÉRIEL INACCEPTABLE POUR LA DIV 2.

1. Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2. The maximum available temperature (or process connection temperature) – see tables for further limitations.

3. If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.

4. Intrinsic safety barrier not required. See functional ratings.

5. Connect the earth terminal (internal or external) with a min. 10Ω resistance between intrinsically safe circuit and the earth terminal.

6. For class II, III, use a dust tight seal at the conduit entry.

7. Avoid electrostatic charge of the plastic sun cover, the lens antenna, the flange plate protect (e.g. when connecting, use anti-static sleeve, when disconnect, do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

8. Temperature Classes as a function of ambient temperature and process temperature (or process connection temperature) – see tables for further limitations.

<table>
<thead>
<tr>
<th>Temperature Classes</th>
<th>Minimum Surface Temperature</th>
<th>Maximum Surface Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0°C</td>
<td>-50°C</td>
<td>+40°C</td>
</tr>
<tr>
<td>T5°C</td>
<td>-40°C</td>
<td>+50°C</td>
</tr>
<tr>
<td>T15°C</td>
<td>-30°C</td>
<td>+60°C</td>
</tr>
<tr>
<td>T25°C</td>
<td>-20°C</td>
<td>+70°C</td>
</tr>
<tr>
<td>T35°C</td>
<td>-10°C</td>
<td>+80°C</td>
</tr>
<tr>
<td>T45°C</td>
<td>0°C</td>
<td>+90°C</td>
</tr>
<tr>
<td>T55°C</td>
<td>+10°C</td>
<td>+100°C</td>
</tr>
<tr>
<td>T65°C</td>
<td>+20°C</td>
<td>+110°C</td>
</tr>
<tr>
<td>T75°C</td>
<td>+30°C</td>
<td>+120°C</td>
</tr>
<tr>
<td>T85°C</td>
<td>+40°C</td>
<td>+130°C</td>
</tr>
<tr>
<td>T95°C</td>
<td>+50°C</td>
<td>+140°C</td>
</tr>
</tbody>
</table>

**FOR FURTHER LIMITATIONS SEE INSTRUCTION MANUAL**

**NON INCENDIVE CONCEPT**

**NON INCENDIVE APPR 4006311701**

**OPTIWAVE 3500/6500/75000**

**CONTROL DRAWING**

**A. THOLLET 13/06/2017**

**V. PICHOT 13/06/2017**

**KSAS (ROMAN: FRANCE) **
4...20mA

**HAZARDOUS (CLASSIFIED) LOCATION**

- **I/O 1**
  - $U = 30\,\text{V}$
  - $I = 300\,\text{mA}$
  - $P_i = 1.0\,\text{W}$
  - $C = 7\,\text{nF}$
  - $L = 18\,\mu\text{H}$

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

- **I/O 1**
  - $U = 30\,\text{V}$
  - $I = 300\,\text{mA}$
  - $P_i = 1.0\,\text{W}$
  - $C = 3\,\text{nF}$
  - $L = 2\,\mu\text{H}$

**FIELDBUS**

- **I/O 1**
  - $U = 30\,\text{V}$
  - $I = 300\,\text{mA}$
  - $P_i = 1.2\,\text{W}$
  - $C = 2\,\text{nF}$
  - $L = 0\,\mu\text{H}$

**MODBUS**

- **I/O 1**
  - $U = 12\,\text{V}$
  - $I = 100\,\text{mA}$
  - $P_i = 0.3\,\text{W}$
  - $C = 1\,\text{nF}$
  - $L = 2\,\mu\text{H}$

**Notes:**

1) Installation shall be in accordance with ANSI / ISA-RP 12.06.01, "Installation of Intrinsically Safe Systems for Hazardous (classified) locations" and articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:

   \[ U_i \leq U \]
   \[ I_i \leq I \]
   \[ P_i \leq P \]
   \[ C_i \geq C + C_{\text{ext}} \]
   \[ L_i \leq L + L_{\text{ext}} \]

3) The intrinsic safety FISCO concept allows the interconnection of approved intrinsically safe devices with FISCO parameters not specifically examined in combination as a system when:

   - $U_i \leq U$
   - $I_i \leq I$
   - $P_i \leq P$

4) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C

5) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm².

6) For class II, III, use a dust tight seal at the conduit entry.

7) Avoid electrostatic charge of the paint, the fully-coated single cable probe, the protective sheath for the single rod probe, the spacers for the reversed interface probe, the spacers for the single cable probe installed in a bypass chamber (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

8) The gasket and probe material temperatures must be in the approved limits.

9) For permitted ambient temperature - see following tables.

10) No revision to this drawing without prior agency approval.

**FOR FURTHER LIMITATIONS SEE INSTRUCTION MANUAL**
### OPTIFLEX 3200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Min. ambient temperature</th>
<th>Material</th>
<th>Sensible Ex</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>T85°C</td>
<td>+60°C</td>
<td>+54°C</td>
<td>Aluminium housing</td>
<td>+40°C</td>
</tr>
<tr>
<td></td>
<td>+85°C</td>
<td>+51°C</td>
<td>+50°C</td>
<td>Stainless steel housing</td>
<td>+37°C</td>
</tr>
<tr>
<td></td>
<td>+75°C</td>
<td>+69°C</td>
<td>+65°C</td>
<td>Aluminium housing</td>
<td>-37°C</td>
</tr>
<tr>
<td></td>
<td>+100°C</td>
<td>+66°C</td>
<td>+61°C</td>
<td>Stainless steel housing</td>
<td>-35°C</td>
</tr>
</tbody>
</table>

| Any               | Any                      | -40°C                    | -37°C                    | Stainless steel housing | -36°C       |

If the device has a Ø2 mm single cable probe, use the value in square brackets.

### OPTIFLEX 6200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Min. ambient temperature</th>
<th>Material</th>
<th>Sensible Ex</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>T85°C</td>
<td>+60°C</td>
<td>+54°C</td>
<td>Aluminium housing</td>
<td>+40°C</td>
</tr>
<tr>
<td></td>
<td>+85°C</td>
<td>+51°C</td>
<td>+50°C</td>
<td>Stainless steel housing</td>
<td>+37°C</td>
</tr>
<tr>
<td></td>
<td>+75°C</td>
<td>+69°C</td>
<td>+65°C</td>
<td>Aluminium housing</td>
<td>-37°C</td>
</tr>
<tr>
<td></td>
<td>+100°C</td>
<td>+66°C</td>
<td>+61°C</td>
<td>Stainless steel housing</td>
<td>-35°C</td>
</tr>
</tbody>
</table>

| Any               | Any                      | -40°C                    | -37°C                    | Stainless steel housing | -36°C       |

### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Min. ambient temperature</th>
<th>Material</th>
<th>Sensible Ex</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>T85°C</td>
<td>+60°C</td>
<td>+54°C</td>
<td>Aluminium housing</td>
<td>+40°C</td>
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<td>+51°C</td>
<td>+50°C</td>
<td>Stainless steel housing</td>
<td>+37°C</td>
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<tr>
<td></td>
<td>+75°C</td>
<td>+69°C</td>
<td>+65°C</td>
<td>Aluminium housing</td>
<td>-37°C</td>
</tr>
<tr>
<td></td>
<td>+100°C</td>
<td>+66°C</td>
<td>+61°C</td>
<td>Stainless steel housing</td>
<td>-35°C</td>
</tr>
</tbody>
</table>

| Any               | Any                      | -40°C                    | -37°C                    | Stainless steel housing | -36°C       |

### CONTROL DRAWING

<table>
<thead>
<tr>
<th>Doc. type</th>
<th>Doc. key</th>
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**KSAS (Romans, FRANCE)**
### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM (to be used only for replacement of the OPTIFLEX 1300 C Converter)

<table>
<thead>
<tr>
<th>Temp. class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Max. ambient temperature</th>
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</thead>
<tbody>
<tr>
<td>T6</td>
<td>85°C +60°C +85°C</td>
<td>+54°C +51°C +46°C</td>
<td>+50°C +52°C +46°C</td>
</tr>
<tr>
<td>T5</td>
<td>100°C +75°C +100°C</td>
<td>+69°C +66°C +61°C</td>
<td>+65°C +69°C +67°C</td>
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<tr>
<td>T4</td>
<td>135°C +110°C +135°C</td>
<td>+79°C +73°C +71°C</td>
<td>+70°C +66°C +67°C</td>
</tr>
<tr>
<td>T3</td>
<td>200°C +150°C +180°C +200°C</td>
<td>+70°C +63°C +59°C</td>
<td>+67°C +58°C +53°C</td>
</tr>
</tbody>
</table>

Min. ambient temperature

-40°C -37°C

### OPTIFLEX 7200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temp. class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Max. ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>85°C +60°C +85°C</td>
<td>+54°C +51°C +46°C</td>
<td>+50°C +52°C +46°C</td>
</tr>
<tr>
<td>T5</td>
<td>100°C +75°C +100°C</td>
<td>+69°C +66°C +61°C</td>
<td>+65°C +69°C +67°C</td>
</tr>
<tr>
<td>T4</td>
<td>135°C +110°C +135°C</td>
<td>+79°C +73°C +71°C</td>
<td>+70°C +66°C +67°C</td>
</tr>
<tr>
<td>T3</td>
<td>200°C +150°C +180°C +200°C</td>
<td>+70°C +63°C +59°C</td>
<td>+67°C +58°C +53°C</td>
</tr>
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</table>

Min. ambient temperature

-40°C -37°C

### OPTIFLEX 8200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temp. class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Max. ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>85°C +60°C +85°C</td>
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</tr>
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<td>100°C +75°C +100°C</td>
<td>+69°C +66°C +61°C</td>
<td>+65°C +69°C +67°C</td>
</tr>
<tr>
<td>T4</td>
<td>135°C +110°C +135°C</td>
<td>+79°C +73°C +71°C</td>
<td>+70°C +66°C +67°C</td>
</tr>
<tr>
<td>T3</td>
<td>200°C +150°C +180°C +200°C</td>
<td>+70°C +63°C +59°C</td>
<td>+70°C +66°C +67°C</td>
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<tr>
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<td>250°C +200°C +250°C</td>
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</table>

Min. ambient temperature

-40°C -38°C

### CONTROL DRAWING

**KROHNE**

OPTIFLEX 3200/6200/7200/8200

IS/Ex ia/AEx ia

KSAS (Romans, FRANCE)

**Doc. type**: APPR 
**Doc. key**: 4006769801

**Status**: released
### OPTIFLEX 8200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Max. ambient temperature</th>
<th>C</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>T6</td>
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<td>+50°C</td>
<td>+50°C</td>
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<td>+66°C</td>
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<td>+67°C</td>
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<td>+70°C</td>
<td>+66°C</td>
</tr>
<tr>
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<td>+110°C</td>
<td>+80°C</td>
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<td>+80°C</td>
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</tr>
<tr>
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<td>+77°C</td>
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<td>+75°C</td>
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<td>+80°C</td>
</tr>
<tr>
<td>T2</td>
<td>T300°C</td>
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<td>+64°C</td>
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<td>+59°C [+59°C]</td>
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</tr>
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<td>+54°C [+58°C]</td>
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<td>+50°C [+53°C]</td>
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<tr>
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<td>+51°C [+55°C]</td>
<td>+52°C [+56°C]</td>
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<td>+50°C [+54°C]</td>
<td>+44°C [+47°C]</td>
</tr>
</tbody>
</table>

**Warning:** Substitution of components may impair intrinsic safety.

**AVERTISSEMENT:** La substitution de composants peut compromettre la sécurité intrinsèque.

If the device has a double ceramic process seal system use the value in square brackets.

### General Tolerances

- Edge of parts
- Surface condition
- Material
- Raster
- Echelle

### Sensible Ex

- Sensible Ex

### KSAS (Romans, FRANCE)

#### CONTROL DRAWING

- Optiflux 3200/6200/7200/8200
- IS/Ex ia/AEx ia

#### Code d'article

- APPR 4006769801

#### Status

- Released
**HAZARDOUS (CLASSIFIED) LOCATION**

Class I/II/III, Div 1, GPS ABCDEFG  
Class I, Zone 1, IIC  
Zone 21, IIC  
Probe suitable for zone 0 and zone 20

**NON HAZARDOUS (UNCLASSIFIED) LOCATION**

Power supply (see note 2)

**I/O 1**

\[ V_{\text{nom}} = 13.5...34 \text{ V} \]

**I/O 2 (optional)**

\[ V_{\text{nom}} = 11.5...34 \text{ V} \]

**Relay output (optional)**

\[ V_{\text{nom}} = \text{AC} 5...48 \text{ V} \sim 6 \text{ A} \]
\[ \text{or DC} 2...24 \text{ V} \approx 6 \text{ A} \]

**FIELDBUS**

\[ U_i = 24 \text{ V} \]
\[ I_i = 300 \text{ mA} / 380 \text{ mA} (\text{FISCO}) \]
\[ P_i = 1.2 \text{ W} / 5.32 \text{ W} (\text{FISCO}) \]

\[ C = 2 \text{ nF} \]
\[ L = 0 \mu \text{H} \]

**I/O 1**

\[ U_i = 24 \text{ V} \]
\[ I_i = 300 \text{ mA} / 380 \text{ mA} (\text{FISCO}) \]
\[ P_i = 1.2 \text{ W} / 5.32 \text{ W} (\text{FISCO}) \]

**Approved Associated Apparatus**  
(see notes 4 and 5)

**Notes:**

1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.

2) Power supply must not use or generate more than 250 Vrms or Vdc.

3) Cable entry must be sealed within 18” conduit of enclosure (divisions) or at the enclosure (zones).

4) To determine proper matching of I.S. equipment and the maximum cable length use the following entity parameter matching formulas:

\[ U_i \leq U_t \]
\[ I_i \leq I_t \]
\[ P_i \leq P_t \]
\[ C, \geq \Sigma C_i + C_{\text{cable}} \]
\[ L, \geq \Sigma L_i + L_{\text{cable}} \]

5) The intrinsic safety FISCO concept allows the interconnection of approved intrinsically safe devices with FISCO parameters not specifically examined in combination as a system when:

\[ U_i \leq U_t \]
\[ I_i \leq I_t \]
\[ P_i \leq P_t \]

4) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C

5) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm².

6) For class II, III, use a dust tight seal at the conduit entry. For zones 21 and 22, use a cable gland rated IP 6X at the housing cable entry.

7) Avoid electrostatic charge of non-conductive materials (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).

8) The gasket and probe material temperatures must be in the approved limits. For more data, refer to the handbook.

9) For permitted ambient temperature - see following tables.

10) No revision to this drawing without prior agency approval.

---

**FOR FURTHER LIMITATIONS SEE INSTRUCTION MANUAL**
### OPTIFLEX 3200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>T85°C</td>
<td>+60°C</td>
</tr>
<tr>
<td>T7</td>
<td>4-20mA</td>
<td>Fieldbus Modbus</td>
</tr>
<tr>
<td>T6</td>
<td>+54°C</td>
<td>+50°C</td>
</tr>
<tr>
<td>T7</td>
<td>+51°C</td>
<td>+46°C</td>
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<td>T6</td>
<td>+69°C</td>
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<tr>
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<td>+60°C</td>
</tr>
<tr>
<td>T3</td>
<td>+150°C</td>
<td>+64°C</td>
</tr>
</tbody>
</table>

#### C

- Aluminium housing
- Stainless steel housing

#### F

- Aluminium housing
- Stainless steel housing

**If the device has a Ø2 mm single cable probe, use the value in square brackets.**

### OPTIFLEX 6200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
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<tr>
<td>T7</td>
<td>4-20mA</td>
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<tr>
<td>T7</td>
<td>+66°C</td>
<td>+61°C</td>
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<tr>
<td>T4</td>
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</tr>
<tr>
<td>T3</td>
<td>+150°C</td>
<td>+64°C</td>
</tr>
</tbody>
</table>

#### C

- Aluminium housing
- Stainless steel housing

#### F

- Aluminium housing
- Stainless steel housing

**If the device has a Ø2 mm single cable probe, use the value in square brackets.**

### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
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<tbody>
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<td>T6</td>
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<tr>
<td>T7</td>
<td>4-20mA</td>
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<tr>
<td>T6</td>
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<tr>
<td>T3</td>
<td>+150°C</td>
<td>+64°C</td>
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</tbody>
</table>

#### C

- Aluminium housing
- Stainless steel housing

#### F

- Aluminium housing
- Stainless steel housing

**If the device has a Ø2 mm single cable probe, use the value in square brackets.**
### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM (to be used only for replacement of the OPTIFLEX 1300 C Converter)

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. ambient temperature</th>
<th>Aluminium housing</th>
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</table>

Min. ambient temperature

|                   | -40°C -50°C -40°C -37°C |

### OPTIFLEX 7200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. ambient temperature</th>
<th>Aluminium housing</th>
<th>Stainless steel housing</th>
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<tr>
<td>T4</td>
<td>T135°C +110°C +135°C +79°C</td>
<td>+75°C +79°C +75°C +79°C</td>
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</tr>
<tr>
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<td>+71°C +73°C +73°C +71°C</td>
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<td>T200°C +150°C +180°C +100°C</td>
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Min. ambient temperature

|                   | -40°C -50°C -40°C -38°C |

### OPTIFLEX 8200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
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<th>Temperature class</th>
<th>Max. ambient temperature</th>
<th>Aluminium housing</th>
<th>Stainless steel housing</th>
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<td>4-20mA Fieldbus-Modbus</td>
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</tr>
</tbody>
</table>

Min. ambient temperature

|                   | -40°C -50°C -40°C -38°C |

If the device has a Ø2mm single cable probe that was part of an OPTIFLEX 1300 (HT version), use the value in square brackets.
### OPTIFLEX 8200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>Max. ambient temperature</th>
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<td>Aluminium housing</td>
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<td>Aluminium housing</td>
<td>Stainless steel housing</td>
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<td>C</td>
<td>F</td>
<td>S</td>
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</tr>
</tbody>
</table>

Any Any -40°C -50°C -38°C -38°C -38°C -40°C -40°C -40°C -40°C

If the device has a double ceramic process seal system use the value in square brackets.

**FOR DIVISIONS MUST BE SEALED WITHIN 18” OF ENCLOSURE. FOR ZONES MUST BE SEALED AT THE ENCLOSURE.**

**POUR LES DIVISIONS DOIT ÊTRE SCHELLÉ À MOINS DE 50CM DU BOÎTIER. POUR LES ZONES DOIT ÊTRE SCCELLÉ AU NIVEAU DU BOÎTIER.**

**Engineer**

<table>
<thead>
<tr>
<th>Rev</th>
<th>Mod</th>
<th>Nom</th>
<th>Cont</th>
<th>Norm</th>
<th>Homol.</th>
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</tbody>
</table>

**Prod**

| A.THOLLET | 13/03/2018 |

**Cont**

| V.PICHOT | 13/03/2018 |

**Norm**

| A.THOLLET | 13/03/2018 |

**Sensible Ex**

**Ech**

**Folio**

4/4

**CONTROL DRAWING**

OPTIFLEX 3200/6200/7200/8200

XP-IS/DIP-IS/Ex db ia/Ex ia tb/

AEx db ia/AEx ia tb

**Code d’article**

APPR 4006769901

**Status**

released
Notes:
1) Installation shall be in accordance with articles 500 to 510 of the National Electric Code ANSI / NFPA 70 for the U.S. and section 18 of the Canadian electrical code CSA 22.1 part 1 for Canada.
2) Intrinsic safety barrier not required.
3) If ambient temperature > 65°C, use heat-resistant cable certified for continuous operation above +80°C.
4) Connect the earth terminal (internal or external) with a min. cable cross-section 4mm².
5) For class II, III, use a dust tight seal at the conduit entry.
6) Avoid electrostatic charge of non-conductive materials (e.g. do not install in a location where the electrostatic charge can increase, do not rub with dry cloth).
7) The gasket and probe material temperatures must be in the approved limits.
8) For more data, refer to the handbook.
9) No revision to this drawing without prior agency approval.

FOR FURTHER LIMITATIONS SEE INSTRUCTION MANUAL

Rev Mod Nom Cont Norm Homol.
Engineer A.THOLLET 13/03/2018 13/03/2018 13/03/2018
Prod A.THOLLET 13/03/2018
Cont V.PICHOT 13/03/2018
Norm
Homol.

CONTROL DRAWING
KROHNE
OPTIFLEX 3200/6200/7200/8200
NON INCENDIVE
KSAS (Romans, FRANCE)
### OPTIFLEX 3200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>C</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>T85°C +60°C +95°C</td>
<td>+68°C +65°C</td>
<td>+68°C +63°C</td>
<td>+67°C +67°C</td>
</tr>
<tr>
<td>T5</td>
<td>T100°C +75°C +100°C</td>
<td>+80°C +80°C</td>
<td>+80°C +79°C</td>
<td>+80°C +77°C</td>
</tr>
<tr>
<td>T4</td>
<td>T135°C +110°C +135°C</td>
<td>+77°C +69°C</td>
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<td>+76°C +71°C</td>
</tr>
<tr>
<td>T3</td>
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<td>+64°C +52°C</td>
<td>+59°C +56°C</td>
<td>+62°C +58°C</td>
</tr>
</tbody>
</table>

**Min. ambient temperature**

| Any               | -40°C -50°C             | -40°C -37°C              | -40°C -35°C | -34°C -30°C |

### OPTIFLEX 6200 WITH PTFE PROCESS SEAL SYSTEM

<table>
<thead>
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<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
<th>C</th>
<th>F</th>
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<td>+68°C +66°C</td>
<td>+67°C +67°C</td>
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<td>+80°C +78°C</td>
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<td>T135°C +110°C +135°C</td>
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<td>+76°C +69°C</td>
<td>+76°C +74°C</td>
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<tr>
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<td>+66°C +53°C</td>
<td>+62°C +51°C</td>
<td>+65°C +56°C</td>
</tr>
</tbody>
</table>

**Min. ambient temperature**

| Any               | -40°C -37°C              | -40°C -36°C | -40°C -35°C |

### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
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<th>F</th>
<th>S or D</th>
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<td>+80°C +73°C</td>
<td>+60°C</td>
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<td>+62°C +51°C</td>
<td>+62°C +50°C</td>
<td>+40°C</td>
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</table>

**Min. ambient temperature**

| Any               | -40°C -36°C              | -40°C -35°C | -40°C -35°C | -40°C -35°C | -40°C |

If the device has a Ø2 mm single cable probe, use the value in square brackets.

---

**CONTROL DRAWING**

OPTIFLEX 3200/6200/7200/8200

NON INCENDIVE

KSAS (Romans, FRANCE)
### OPTIFLEX 7200 WITH SINGLE PTFE PROCESS SEAL SYSTEM

<table>
<thead>
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<td>Stainless steel housing</td>
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<tr>
<td>4-20mA - Fieldbus - Modbus</td>
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<td>+80°C</td>
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<td>+79°C</td>
<td>+73°C</td>
<td>+78°C</td>
<td>+80°C</td>
</tr>
<tr>
<td>T3</td>
<td>T200°C</td>
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<td>+180°C</td>
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<td>+70°C</td>
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**Min. ambient temperature**

-40°C

### OPTIFLEX 7200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
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<th>Temperature class</th>
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<th>Max. process temperature</th>
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<td>+80°C</td>
<td>+80°C</td>
<td>+80°C</td>
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<td>+135°C</td>
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<td>+73°C</td>
<td>+78°C</td>
<td>+80°C</td>
</tr>
<tr>
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<td>+63°C</td>
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**Min. ambient temperature**

-40°C

### OPTIFLEX 8200 WITH PTFE PROCESS SEAL SYSTEM

<table>
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<th>Temperature class</th>
<th>Max. surface temperature</th>
<th>Max. process temperature</th>
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<td>+59°C</td>
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</table>

**Min. ambient temperature**

-40°C

If the device has a Ø2mm single cable probe that was part of an OPTIFLEX 1300 (HT version), use the value in square brackets.
### OPTIFLEX 8200 WITH CERAMIC PROCESS SEAL SYSTEM

<table>
<thead>
<tr>
<th>Temperature class</th>
<th>Max. surface temperature</th>
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If the device has a double ceramic process seal system use the value in square brackets.

**WARNING:** EXPLOSIVE HAZARD. DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS. SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN DIV. 2

**AVERTISSEMENT:** RISQUE D’EXPLOSION. AVANT DE DEBRANCHER L’EQUIPEMENT COUPEZ LE COURANT OU ASSUREZ-VOUS QUE L’EMPLACEMENT EST NON DANGEREUX. LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LA DIV 2

### CONTROL DRAWING

**KROHNE**

OPTIFLEX 3200/6200/7200/8200

NON INCENDIVE

KSAS (Romans, FRANCE)

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**Code d’article**

Doc. type  Doc. key  Rev

APPR 4006770001  -

**Status**

released