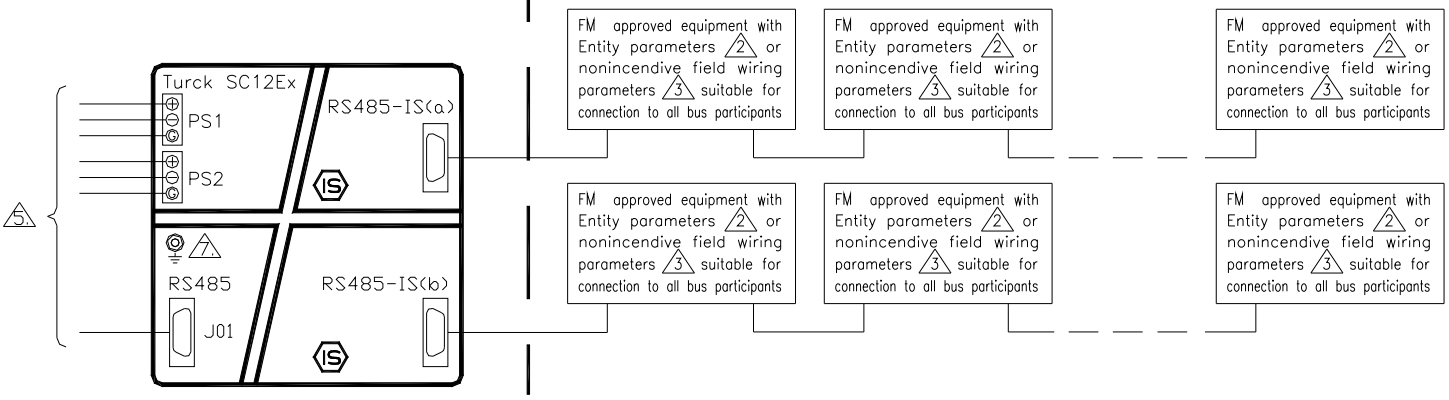
# FM Approved SC12Ex Segment Coupler

## for Connection to Class I, Zone 1 or Class I, Division 2 Hazardous Locations

FM APPROVED

NON–HAZARDOUS LOCATION
OR
Class I, Division 2, Group A, B, C, or D

HAZARDOUS (CLASSIFIED) LOCATION
Class I, Zone 1, Group IIC, IIB, or IIA
OR
Class I, Division 2, Group A, B, C, or D




Entity Parameters: Class I, Zone 1, or 2

| Model | Connector | $U_o$ (V) | $I_o$ (mA) | $P_o$ (mW) | $C_o$(uF) IIC,IIB,IIA | $L_o$(mH) IIC,IIB,IIA | Output Characteristic |
|---|---|---|---|---|---|---|---|
| SC12Ex | RS485–IS(a) | 3.5 | 118 | 103 | 1000uF | 3mH | Linear |
| | RS485–IS(b) | 3.5 | 118 | 103 | 1000uF | 3mH | Linear |

Nonincendive Field Wiring Parameters: Class I, Division 2

| Model | Connector | $V_{oc}$ (V) | $I_{sc}$ (mA) | $P_o$ (mW) | $C_a$(uF) A,B,C,D | $L_a$(mH) A,B,C,D |
|---|---|---|---|---|---|---|
| SC12Ex | RS485–IS(a) | 3.5 | 118 | 103 | 1000uF | 3mH |
| | RS485–IS(b) | 3.5 | 118 | 103 | 1000uF | 3mH |

Notes:

1. The SC12Ex is intended for use with intrinsically safe RS 485 bus systems, specifically Profibus DP. It provides two intrinsically safe, galvanically isolated segments when the bus participants are connected in accordance with this control drawing.

2. The entity concept allows interconnection of intrinsically safe apparatus and associated apparatus not specifically examined in combination when certain parametric conditions are met.
   $U_i \geq U_o$ $I_i \geq I_o$ $C_i + C_{cable} \leq C_o$ $L_i + L_{cable} \leq L_o$

3. The nonincendive field wiring circuit concept allows interconnection of nonincendive field wiring apparatus and associated nonincendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when certain parametric conditions are met.
   $V_{max} \geq V_{oc}$ or $V_t$ $I_{max} \geq I_{sc}$ or $I_t$ $C_i + C_{cable} \leq C_a$ $L_i + L_{cable} \leq L_a$

4. Intrinsically safe circuits must be wired in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Article 505; and ANSI/ISA RP12.06.01

5. Associated apparatus must not be connected to any device that uses or generates in excess of 250Vrms.

6. If the electrical parameters of the cable are unknown, the following values may be used: Capacitance – 60pF/foot, Inductance – 0.2µH/foot

7. The ground terminal must be connected to a ground electrode meeting the requirements of Article 250 of the NEC.

| Drawing No.: IS–2.501 | TURCK 3000 Campus Drive Plymouth, MN 55441 Phone: (763) 553–7300 |
|---|---|
| Title: Control Drawing for FM Approved SC12Ex Segment Couplers | |
| Scale: None | Sheet: 1 of 1 |

| Rev | Description | Drft | Date |
|---|---|---|---|
| A | Release | BVL | 10/20/04 |