

FM Hazardous Area Approvals Fisher™ FIELDVUE™ DVC2000 Digital Valve Controller

Hazardous Area Classifications and Special Instructions for “Safe Use” and Installations in Hazardous Locations

Certain nameplates may carry more than one approval, and each approval may have unique installation/wiring requirements and/or conditions of “safe use”. These special instructions for “safe use” are in addition to, and may override, the standard installation procedures. Special instructions are listed by approval.

Note

This information supplements the nameplate markings affixed to the product and the DVC2000 quick start guide ([D103203X012](#)) and instruction manual ([D103176X012](#)), available from your Emerson sales office, Local Business Partner, or [Fisher.com](#).

Always refer to the nameplate itself to identify the appropriate certification.

⚠ WARNING

Failure to follow these conditions of “safe use” could result in personal injury or property damage from fire or explosion, or area re-classification.

Special Conditions of Use

Intrinsically Safe, Non-Incendive

The apparatus enclosure contains aluminum and is considered to constitute a potential risk of ignition by impact or friction. Care must be taken into account during installation and use to prevent impact or friction.

Refer to figure 1 for a typical DVC2000 FM approval nameplate and figure 2 for installation drawing GE10683.

Figure 1. Typical FM Nameplate

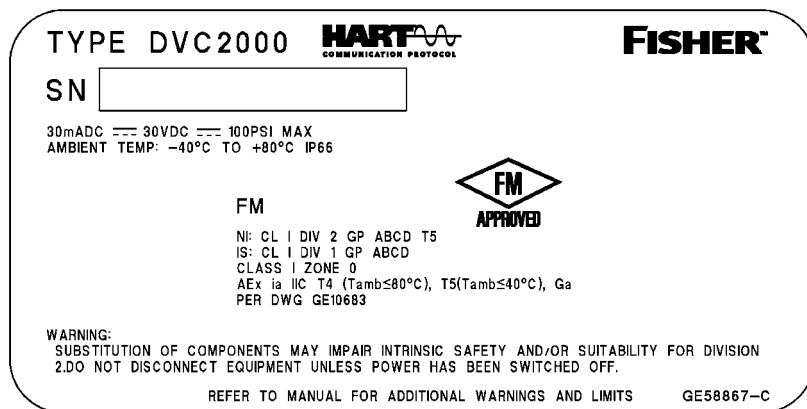


Figure 2. FM Installation Drawing GE10683

1 INSTALLATION MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ANSI/ISA RP12.6.

2 BARRIERS MUST BE CONNECTED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

3 THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS TO ASSOCIATED APPARATUS, NOT SPECIFICALLY EXAMINED IN SUCH COMBINATION. THE CRITERIA FOR INTERCONNECTION IS THAT THE VOLTAGE (Vmax) AND THE CURRENT (Imax) OF THE INTRINSICALLY SAFE APPARATUS MUST BE EQUAL TO OR GREATER THAN THE VOLTAGE (Voc) AND CURRENT (Isc) DEFINED BY THE ASSOCIATED APPARATUS. IN ADDITION, THE SUM OF THE MAXIMUM UNPROTECTED CAPACITANCE (Ci) AND INDUCTANCE (Li) OF EACH INTRINSICALLY SAFE APPARATUS, AND THE INTERCONNECTING WIRING, MUST BE LESS THAN THE ALLOWABLE CAPACITANCE (Ca) AND INDUCTANCE (La) DEFINED BY THE ASSOCIATED APPARATUS. IF THESE CRITERIA ARE MET, THEN THE COMBINATION MAY BE CONNECTED. FORMULAS - $V_{max} > V_{oc}$, or V_t , $C_i + C_{cable} < C_a$, $P_i > P_o$, or P_t
 $I_{max} > I_{sc}$, or I_t , $L_i + L_{cable} < L_a$

4 ENTITY PARAMETERS FOR EACH I.S. CIRCUIT ARE AS FOLLOWS:

CIRCUIT	VMax (Ui)	IMAX(Ii)	Ci	Li	PMAX
XMTR	28Vdc	100mA	5nF	0 mH	1W
MAIN	30Vdc	130mA	10.5nF	0.55 mH	1W
LS1	16Vdc	76mA	5nF	0 mH	1W
LS2	16Vdc	76mA	5nF	0 mH	1W

5 WHERE MULTIPLE IS CIRCUITS ARE USED:

- EACH I.S. CIRCUIT MUST BE SHIELDED TWISTED PAIR CABLE.
- I.S. CIRCUITS MUST ENTER ENCLOSURE VIA CONDUIT ENTRIES AS SPECIFIED IN DETAIL 1.
- CABLE INSULATION AND SHIELD MUST EXTEND TO WITHIN PARTITIONED AREA (SEE DETAIL 1).
- XMTR, LS1, AND LS2 CIRCUITS ARE OPTIONAL.

6 CLASS I, DIV 2 APPLICATIONS MUST BE INSTALLED AS SPECIFIED IN NEC ARTICLE 501-4(B). EQUIPMENT AND FIELD WIRING IS NON-INCENDIVE WHEN CONNECTED TO APPROVED BARRIERS WITH ENTITY PARAMETERS.

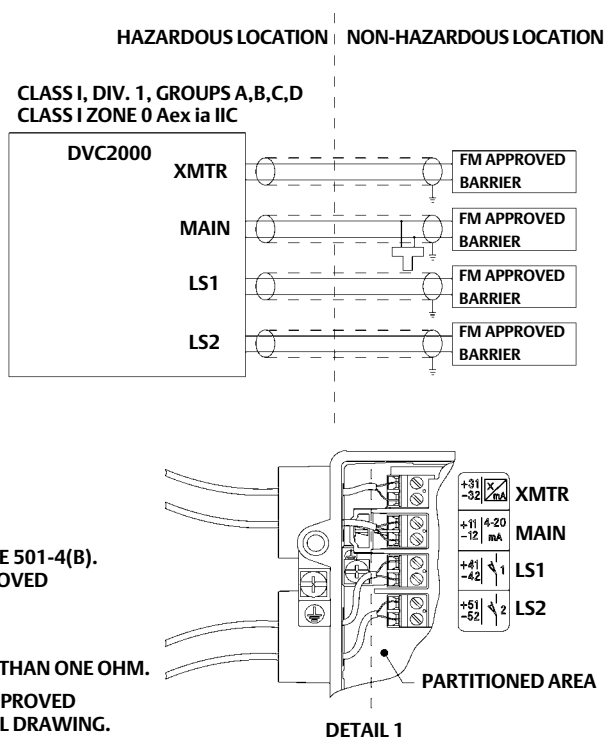
7 MAXIMUM SAFE AREA VOLTAGE SHOULD NOT EXCEED 250 Vrms.

8 RESISTANCE BETWEEN BARRIER GROUND AND EARTH GROUND MUST BE LESS THAN ONE OHM.

9 IF HAND-HELD COMMUNICATOR OR MULTIPLEXOR IS USED, IT MUST BE FM APPROVED WITH ENTITY PARAMETERS AND INSTALLED PER THE MANUFACTURER'S CONTROL DRAWING.

WARNING

THE APPARATUS ENCLOSURE CONTAINS ALUMINUM AND IS CONSIDERED TO CONSTITUTE A POTENTIAL RISK OF IGNITION BY IMPACT OR FRICTION. CARE MUST BE TAKEN DURING INSTALLATION AND USE TO PREVENT IMPACT OR FRICTION.



GE10683-D

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