

# North American Hazardous Area Approvals

Fisher™ FIELDVUE™ DVC7K-H Digital Valve Controllers

## Hazardous Area Approvals 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 type.

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### NOTE

This information supplements the nameplate markings affixed to the product and the DVC7K-H Quick Start Guide (D104766X012), available from your [Emerson sales office](#) or at [Fisher.com](#).

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

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### WARNING

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

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## Conditions of Acceptability

1. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build-up of electrostatic charges. Additionally, cleaning of the equipment should be done only with a damp cloth.
2. The temperature of the DVC7K can reach 94°C in an 85°C ambient at the cable entry and the branching point. This must be considered by the user when selecting field wiring and cable entry devices.
3. This equipment shall only be installed where the risk of damage due to impact is considered to be low.
4. Compressed air or natural gas may be used as a control medium. For natural gas, only the intrinsically safe (Ex ia) protection concept is permitted. The control medium shall be particulate free and have a dew point of at least 10 °C below the ambient temperature to ensure no risk of condensation. The maximum pressure of the control medium shall not exceed 145 lbf/in<sup>2</sup> (psi).

5. When natural gas is used as a control medium, a barrier gland, or other equally effective means of mitigating the migration of natural gas into the wiring system shall be used with each populated cable entry. The enclosure vent shall be replaced by the pipeblock and the spent medium shall be disposed of at a safe location; eg, at a flare stack.
6. The UART connection shall not be used when an explosive atmosphere is present. The USB-UART cable provided by the manufacturer shall be used for the connection and the user shall ensure an ambient temperature less than 60 °C.
7. Use only manufacturer battery part number GK03960X012.
8. The flamepaths of this equipment shall not be repaired.
9. The equipment shall be supplied by a LEC (limited Energy circuit) or Class 2 power source.
10. Substitution of components may impair intrinsic safety.

### Ordinary Locations Approval

Complies with general electrical safety CSA C22.2 No. 61010-1, update 1, update 2, amendment 1:2018 and UL 61010-1-2019 SELV, conduit connected, Enclosure Type 4X, IP66, Installation Category II, Pollution Degree 2

#### DVC7K-H-A

Rated Input: 30 VDC, 4-20 mA

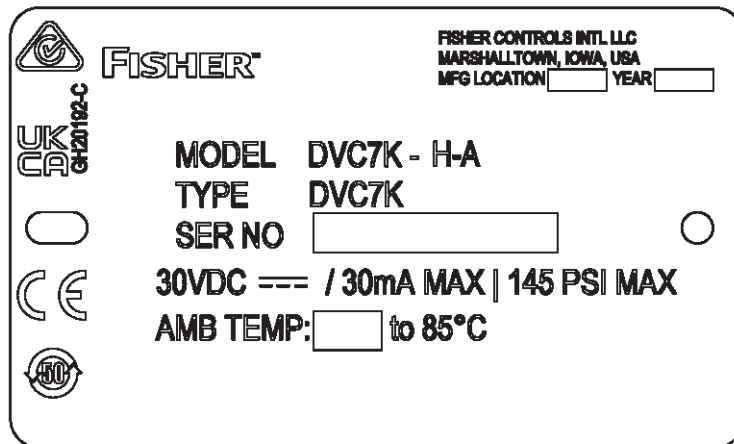
#### Operating Ambient Temperatures

Standard: -40°C to 85°C includes nitrile elastomers

Extreme Temperature Option: -45°C to 85°C includes fluorosilicone elastomers

High Temperature Option: -40°C to 85°C includes fluorosilicone elastomers

#### DVC7K-H-A Nameplate (GH20192-C)



## Intrinsically Safe, Explosion-proof, Dust-Ignition-proof, and Increased Safety

### DVC7K-H-B

Rated Input: 30 VDC, 4-20 mA


### Operating Ambient Temperatures

Standard: -40°C to 85°C includes nitrile elastomers

Extreme Temperature Option: -45°C to 85°C includes fluorosilicone elastomers

High Temperature Option: -40°C to 85°C includes fluorosilicone elastomers

### DVC7K-H-B Nameplate (GH02505-A)

 FISHER™	MODEL <b>DVC7K-H-B</b>	FISHER CONTROLS INTL LLC
	TYPE <b>DVC7K</b>	MARSHALLTOWN, IOWA, USA
SER NO <input type="text"/>	MFG LOCATION <input type="text"/>	YEAR <input type="text"/>
30VDC <input type="text"/> / 30mA MAX   145 PSI MAX   TYPE 4X   IP66		
AMB TEMP: <input type="text"/> to 85°C CSA 24CA80195686X SEE DWG GK03985		
GK02505-A	CL I DIV 1 GP BCD T5...T4   CL I DIV 2 GP ABCD T5...T4	I.S. CL I, II DIV 1 GP ABCDEFG T5...T4   I.S. CL III T5...T4
	CL II DIV 1 GP EFG T100°C...T135°C	Ex db Ia IIC T5...T4 Gb
	CL II DIV 2 GP FG T100°C...T135°C   CL III DIV 1 T5...T4	Ex Ia IIC T5...T4 Ga   Ex ec Ic IIC T5...T4 Gc
	CL I ZONE 1 AEx db Ia IIC T5...T4 Gb	CL I DIV 1 GP BCD T5...T4   CL I DIV 2 GP ABCD T5...T4
	I.S. CL I, II DIV 1 GP ABCDEFG T5...T4   I.S. CL III DIV 1 T5...T4	CL II DIV 1 GP EFG T100°C...T135°C
	CL I ZONE 0 AEx Ia IIC T5...T4 Ga	CL II DIV 2 GP FG T100°C...T135°C
	CL I ZONE 2 AEx ec Ic IIC T5...T4 Gc	Ex tb IIIC T100°C...T135°C Db
	ZONE 21 AEx Ib IIIC T100°C...T135°C Db	Ex Ia IIIC T100°C...T135°C Da
	ZONE 20 AEx Ia IIIC T100°C...T135°C Da	USA
	-45°C (NO COIN CELL) or -40°C ≤ T <sub>amb</sub> ≤ +40°C (FOR TEMPERATURE CLASS T5 OR T100°C)	CANADA
-45°C (NO COIN CELL) or -40°C ≤ T <sub>amb</sub> ≤ +85°C (FOR TEMPERATURE CLASS T4 OR T135°C)	(Ex d version) U <sub>m</sub> =250 Vac; or (Ex i version)   U <sub>i</sub> =30V, I <sub>i</sub> =100mA, P <sub>i</sub> =0.75W, TX & SW   U <sub>i</sub> =30V, I <sub>i</sub> =130mA, P <sub>i</sub> =0.75W, LOOP	
CAUTION/ WARNINGS	DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE   NE PAS OUVRIR DANS UNE ATMOSPHÈRE EXPLOSIVE   REFER TO MANUAL FOR ADDITIONAL CAUTIONS   RÉFÉREZ-VOUS AU MANUEL POUR DES PRÉCAUTIONS SUPPLÉMENTAIRES	

**DVC7K-H-F**

Rated Input: 30 VDC, 4-20 mA

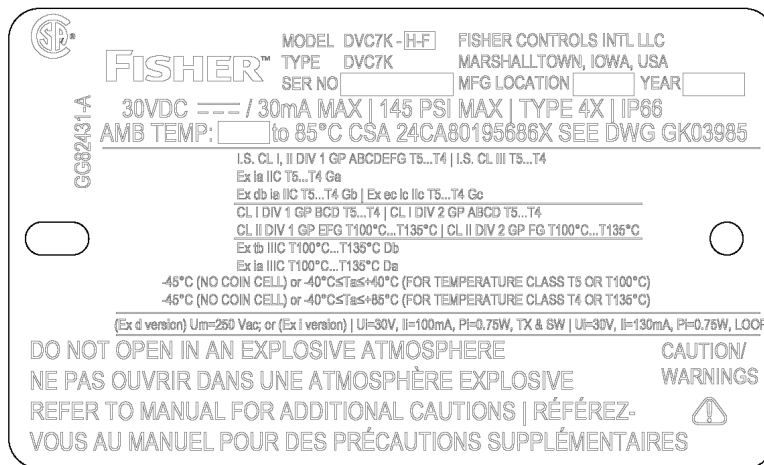
**Operating Ambient Temperatures**

Standard: -40°C to 85°C includes nitrile elastomers

Extreme Temperature Option: -45°C to 85°C includes fluorosilicone elastomers

High Temperature Option: -40°C to 85°C includes fluorosilicone elastomers

**DVC7K-H-F Nameplate (GG82431-A)**



**DVC7K-H-G**

Rated Input: 30 VDC, 4-20 mA

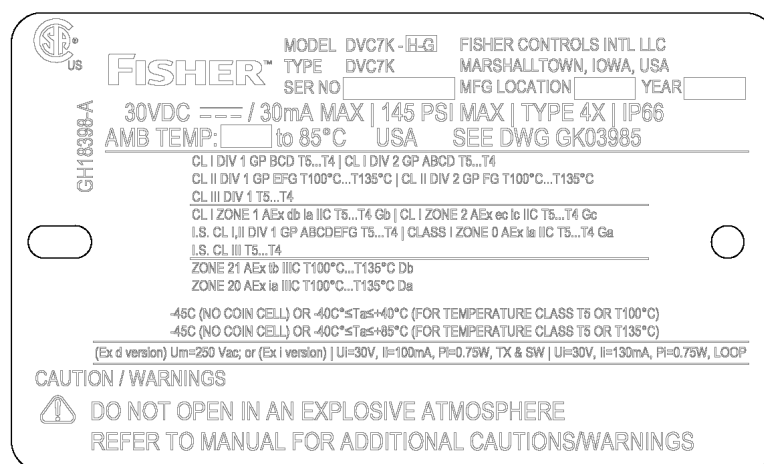
**Operating Ambient Temperatures**

Standard: -40°C to 85°C includes nitrile elastomers

Extreme Temperature Option: -45°C to 85°C includes fluorosilicone elastomers

High Temperature Option: -40°C to 85°C includes fluorosilicone elastomers

**DVC7K-H-G Nameplate (GH18398-A)**

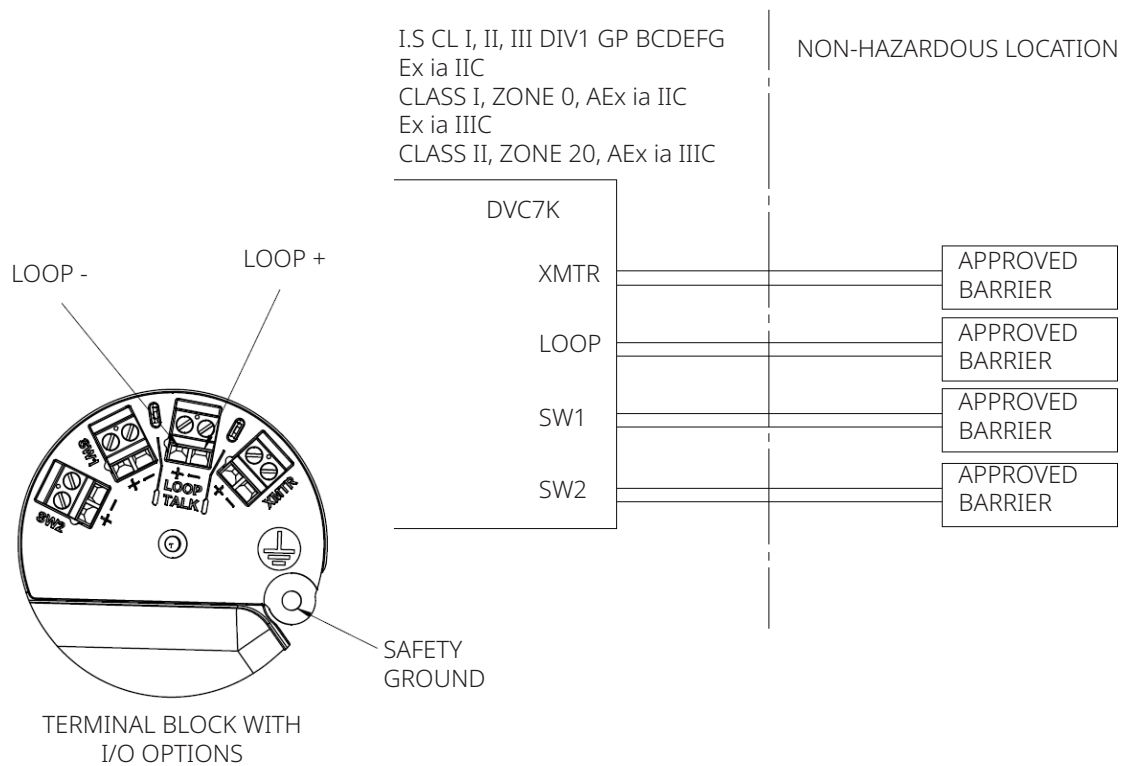


**Figure 1. CSA Loop Schematics FIELDVUE DVC7K-H-B, -F, -G**

1. WHERE APPLICABLE EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE (CEC) PART 1 OR IN ACCORDANCE WITH THE NATIONAL WIRING PRACTICES OF THE COUNTRY IN USE.
2. BARRIERS MUST BE APPROVED WITH ENTITY PARAMETERS AND ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS I.S. INSTALLATION INSTRUCTIONS.
3. ENTITY PARAMETERS FOR EACH I.S. CIRCUIT ARE AS FOLLOWS:

CIRCUIT	Vmax (UI)	imax (II)	Ci	Li	Pmax
XMTR	30Vdc	100mA	19.25nF	0.175mH	0.750W
LOOP	30Vdc	130mA	18.81nF	0.175mH	0.750W
SW1	30Vdc	100mA	2.2nF	0 mH	0.750W
SW2	30Vdc	100mA	2.2nF	0 mH	0.750W

4. XMTR, SW1 AND SW2 CIRCUITS ARE OPTIONAL.
5. IF HAND-HELD COMMUNICATOR OR MULTIPLEXER IS USED, IT MUST BE CERTIFIED WITH ENTITY PARAMETERS AND INSTALLED PER THE MANUFACTURER'S CONTROL DRAWING.



GK03985

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