



ATEX Hazardous Area Approvals Fisher™ FIELDVUE™ DVC6200 Series 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.

Note

This information supplements the nameplate markings affixed to the product and the DVC6200 Series quick start guide ([D103556X012](#)), available from your [Emerson sales office](#) or at [Fisher.com](#).

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

Approval information is for both aluminum and stainless steel constructions.

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.

WARNING

To avoid static discharge from the plastic cover when flammable gases or dust are present, do not rub or clean the cover with solvents. To do so could result in a spark that may cause the flammable gases or dust to explode, resulting in personal injury or property damage. Clean with a mild detergent and water only.

WARNING

Special Conditions of Use:

The apparatus enclosure contains aluminium and is considered to constitute a potential risk of ignition by impact or friction. This shall be taken into account when installed in Zone 0 locations and care shall be taken to prevent impact or friction during the installation and use (applicable only to aluminium constructions)

Flameproof II 2 GD

WARNING

Potential electrostatic charging hazard. See warning on page 1.

Covered by Standards:

EN 60079-0:2012 + A11:2013

EN 60079-1:2014

EN 60079-31:2014

DVC6200 and DVC6205 Series HART, FOUNDATION Fieldbus, PROFIBUS

Ex d IIC T5/T6 Gb, IP66

Ex tb IIIC T88°C Db, IP66 (not applicable to DVC6205 Series)

Ta = -52°C or -40°C to +85°C

DVC6215 and DVC6215NA

Ex d IIC T4/T5/T6 Gb, IP66

Ta = -52°C to +125°C

Type n II 3 G

WARNING

Potential electrostatic charging hazard. See warning on page 1.

Covered by Standards:

EN 60079-0:2012 + A11:2013

EN 60079-15:2010

DVC6200 and DVC6205 Series HART, FOUNDATION Fieldbus, PROFIBUS

Ex nC IIC T5/T6 Gc, IP66

Ta = -52°C or -40°C to +80°C

DVC6215

Ex nA IIC T4/T5/T6 Gc, IP66

Ta = -52°C to +125°C

Intrinsically Safe

⚠ WARNING

Potential electrostatic charging hazard. See warning on page 1.

Covered by Standards:
EN 60079-0:2012 + A11:2013
EN 60079-11:2012

DVC6200 and DVC6205 Series

Ex II 1 GD
Ex ia IIC or IIB T4/T5/T6 Ga, IP66
Ex ia IIC , T4/T5/T6 Ga, IP66
Ex ia IIIC Txx°C Da, IP66
Ta = -52°C / -40°C to +80°C
Ex ia IIC/IIB valid to: Ta = -55°C to +80°C

HART
FOUNDATION Fieldbus, PROFIBUS
DVC6200 Series
DVC6200 and DVC6205 Series
DVC6200 and DVC6205 Series

DVC6215

Ex II 1 G
Ex ia IIC T4/T5/T6 Ga, IP66
Ta = -52°C to +125°C

Intrinsically safe when connected per control drawing GE42990, as shown in the following figures

- DVC6200 HW2 and DVC6200 SIS figure 1 and 5
- DVC6205, DVC6205 SIS, and DVC6215 Remote Mount figure 2 and 5
- DVC6200f and DVC6200p figure 3 and 5
- DVC6205f, DVC6205p, and DVC6215 Remote Mount figure 4 and 5

Figure 1. Loop Schematics—FIELDVUE DVC6200 HW2 and DVC6200 SIS

ZONE 0, Ex ia IIC OR IIB T5...T6
**ZONE 20, Ex ia IIIC Txx°C

DVC6200, DVC6200S HW2 - WITH OR WITHOUT I/O PACKAGE			
I/O PACKAGE?	NO	YES	YES
RATING	Ex ia IIC	Ex ia IIC	Ex ia IIC
LOOP TERMINALS	Ui : 30 VDC Ii : 130 mA Pi : 1.0 W Ci : 15 nF Li : 0.15 mH	Ui : 30 VDC Ii : 130 mA Pi : 1.0 W Ci : 15 nF Li : 0.15 mH	Ui : 30 VDC Ii : 101 mA Pi : 757 mW Ci : 15 nF Li : 0.30 mH
AUX TERMINALS	NOT PROVIDED	NOT USED	Uo : 30 VDC Io : 101 mA Po : 757 mW Co : 52.4 nF Lo : 3.18 mH
RATING	N/A	Ex ia IIC	Ex ia IIC
OUTPUT TERMINALS	NOT PROVIDED	Ui : 28 VDC Ii : 100 mA Pi : 1.0 W Ci : 15 nF Li : 0.23 mH	Ui : 28 VDC Ii : 100 mA Pi : 1.0 W Ci : 15 nF Li : 0.23 mH

1 SEE NOTES IN FIGURE 5

** NOTE - POWER MAY BE APPLIED TO EITHER THE LOOP TERMINALS OR OUTPUT TERMINALS OR TO BOTH SETS OF TERMINALS AT THE SAME TIME.

** NOTE - THE AUX TERMINAL PARAMETERS ARE NOT FULLY INDEPENDENT FROM THE LOOP TERMINAL PARAMETERS AND IS THEREFORE DEEMED AS A SOURCE WITH OUTPUTS.

** NOTE - WHEN THE AUX TERMINALS ARE USED, THE MAXIMUM OUTPUT (U, I, & P) WILL BE IDENTICAL TO THE ASSOCIATED APPARATUS FEEDING THE LOOP TERMINALS.

** NOTE - ONLY IF THE NAMEPLATE BEARS THIS MARKING.

*** NOTE - EQUIPMENT MARKED Ex ia IIIC Txx°C MAY USE ANY OF THE ENTITY PARAMETERS STATED ABOVE.

	WITHOUT I/O PACKAGE	WITH I/O PACKAGE
GAS	T5 (Ta ≤ 80°C)	T5 (Ta ≤ 80°C)
	T6 (Ta ≤ 74°C)	T6 (Ta ≤ 61°C)
DUST	T91°C (Ta ≤ 80°C)	T104°C (Ta ≤ 80°C)
	T85°C (Ta ≤ 74°C)	T85°C (Ta ≤ 61°C)

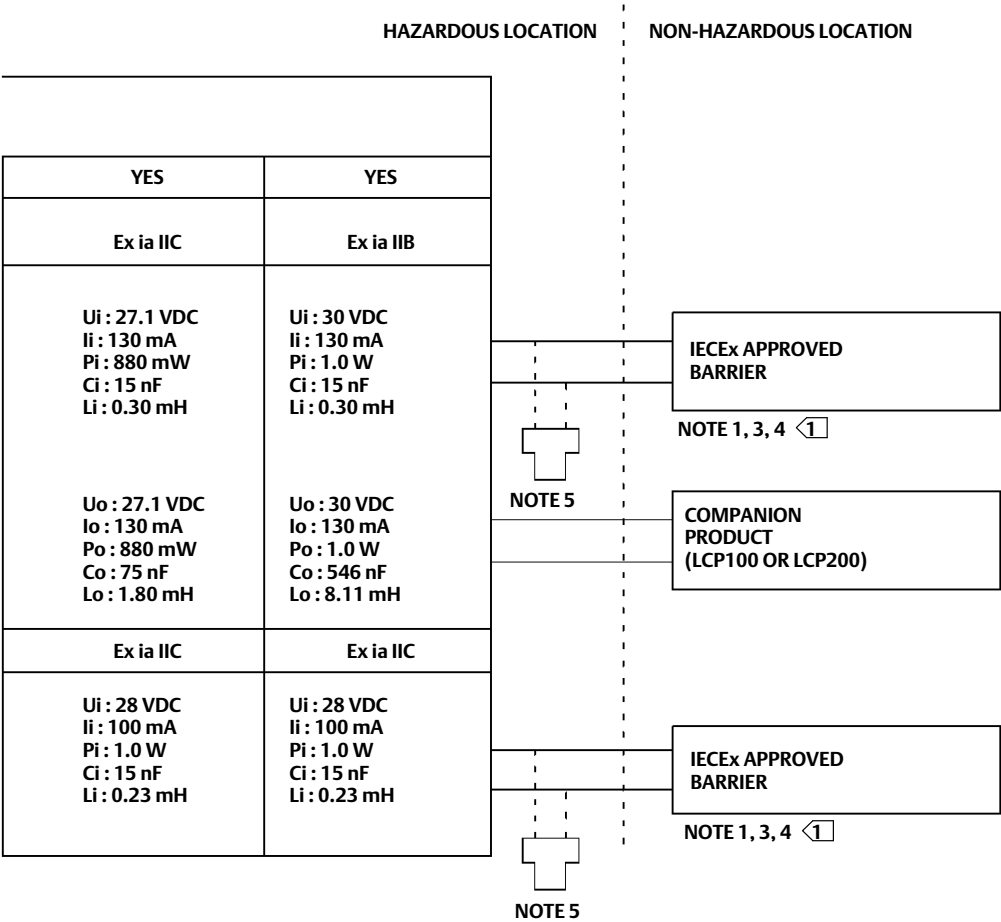
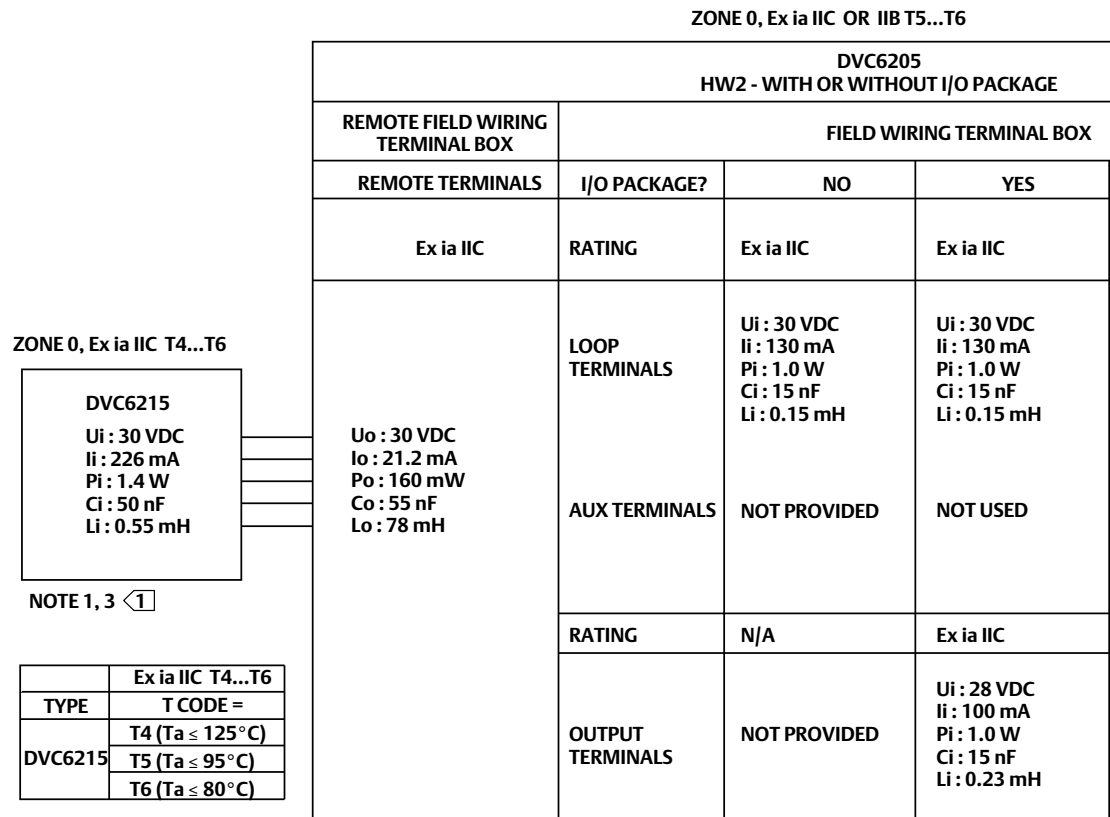


Figure 2. Loop Schematics—FIELDVUE DVC6205, DVC6205 SIS, and DVC6215



1 SEE NOTES IN FIGURE 5

**** NOTE - POWER MAY BE APPLIED TO EITHER THE LOOP TERMINALS OR OUTPUT TERMINALS OR TO BOTH SETS OF TERMINALS AT THE SAME TIME.**

**** NOTE - THE AUX TERMINAL PARAMETERS ARE NOT FULLY INDEPENDENT FROM THE LOOP TERMINAL PARAMETERS AND IS THEREFORE DEEMED AS A SOURCE WITH OUTPUTS.**

**** NOTE - WHEN THE AUX TERMINALS ARE USED, THE MAXIMUM OUTPUT (U, I, & P) WILL BE IDENTICAL TO THE ASSOCIATED APPARATUS FEEDING THE LOOP TERMINALS.**

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Ex ia IIC or IIB T5...T6		
	WITHOUT I/O PACKAGE	WITH I/O PACKAGE
TYPE	T CODE =	T CODE =
DVC6205	T5 (Ta ≤ 80°C)	T5 (Ta ≤ 80°C)
	T6 (Ta ≤ 74°C)	T6 (Ta ≤ 61°C)





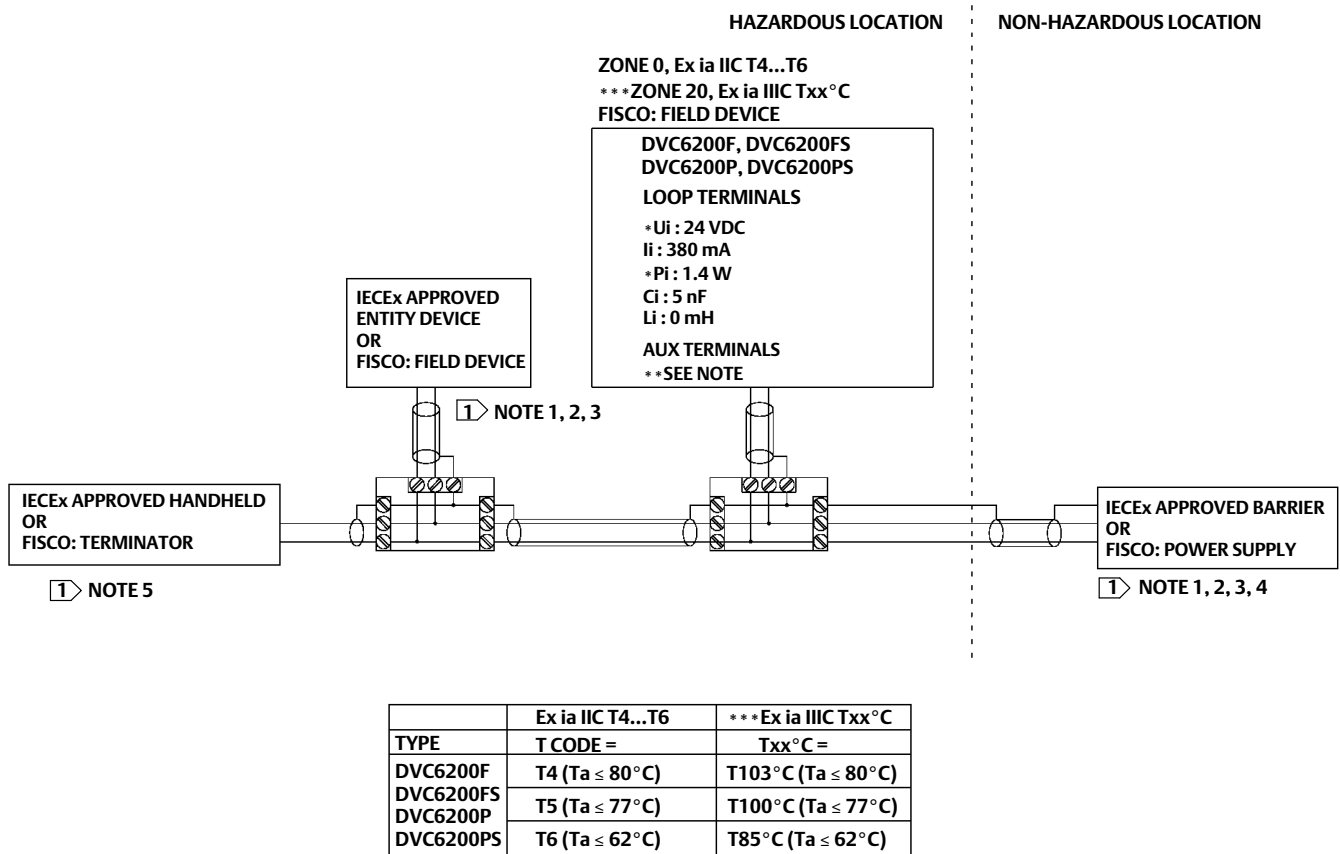
HAZARDOUS LOCATION			NON-HAZARDOUS LOCATION	
YES	YES	YES		
Ex ia IIC	Ex ia IIC	Ex ia IIB		
Ui : 30 VDC Ii : 101 mA Pi : 757 mW Ci : 15 nF Li : 0.30 mH	Ui : 27.1 VDC Ii : 130 mA Pi : 880 mW Ci : 15 nF Li : 0.30 mH	Ui : 30 VDC Ii : 130 mA Pi : 1.0 W Ci : 15 nF Li : 0.30 mH	IECEx APPROVED BARRIER NOTE 1, 3, 4 	
Uo : 30 VDC Io : 101 mA Po : 757 mW Co : 52.4 nF Lo : 3.18 mH	Uo : 27.1 VDC Io : 130 mA Po : 880 mW Co : 75 nF Lo : 1.80 mH	Uo : 30 VDC Io : 130 mA Po : 1.0 W Co : 546 nF Lo : 8.11 mH	 NOTE 5 COMPANION PRODUCT (LCP100 OR LCP200)	
Ex ia IIC	Ex ia IIC	Ex ia IIC		
Ui : 28 VDC Ii : 100 mA Pi : 1.0 W Ci : 15 nF Li : 0.23 mH	Ui : 28 VDC Ii : 100 mA Pi : 1.0 W Ci : 15 nF Li : 0.23 mH	Ui : 28 VDC Ii : 100 mA Pi : 1.0 W Ci : 15 nF Li : 0.23 mH	IECEx APPROVED BARRIER NOTE 1, 3, 4 	
			 NOTE 5	

Figure 3. Loop Schematics—FIELDVUE DVC6200f and DVC6200p



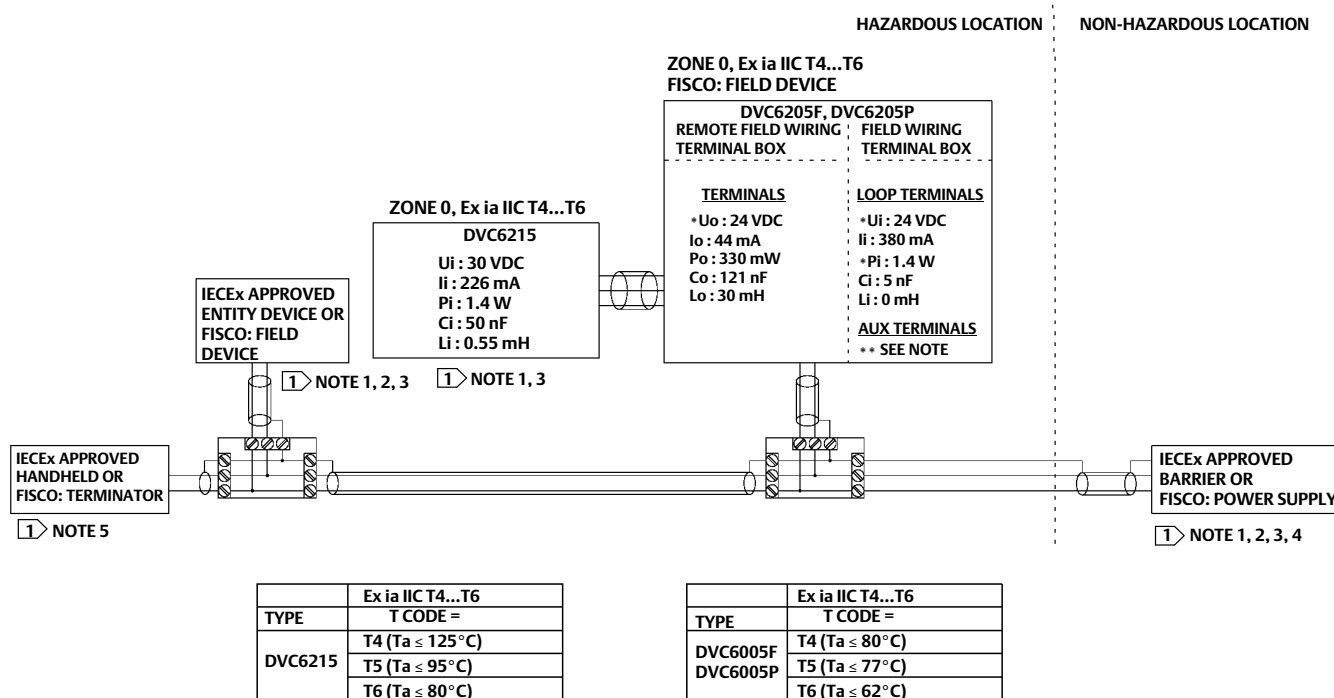
1 SEE NOTES IN FIGURE 5

***ONLY IF THE NAMEPLATE BEARS THIS MARKING.

**NOTE: THE AUX TERMINALS ALLOW FOR ADDITIONAL CONFIGURATIONS BY SHORTING THEM TOGETHER LOCALLY OR REMOTELY BY USE OF A SWITCH.

**NOTE: IF FISCO IS IMPLEMENTED,
 Ui : 17.5, VDC & Pi : 5.32 W

Figure 4. Loop Schematics—FIELDVUE DVC6205f, DVC6205p, and DVC6215



SEE NOTES IN FIGURE 5

**NOTE: THE AUX TERMINALS ALLOW FOR ADDITIONAL CONFIGURATIONS BY SHORTING THEM TOGETHER LOCALLY OR REMOTELY BY USE OF A SWITCH.

*NOTE: IF FISCO IS IMPLEMENTED,
Ui : 17.5 VDC & Pi : 5.32 W
Uo : 17.5 VDC

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Figure 5. Notes for Loop Schematics

SPECIAL CONDITIONS OF USE:

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

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 OR Ui), THE CURRENT (Imax OR Ii), AND THE POWER (Pmax OR Pi) OF THE INTRINSICALLY SAFE APPARATUS MUST BE EQUAL TO OR GREATER THAN THE VOLTAGE (Voc OR Uo), AND THE CURRENT (Isc OR Io), AND THE POWER (Po) DEFINED BY THE ASSOCIATED APPARATUS. IN ADDITION, THE SUM OF THE MAX UNPROTECTED CAPACITANCE (Ci) AND MAX UNPROTECTED INDUCTANCE (Li), INCLUDING THE INTERCONNECTING CABLING CAPACITANCE (Ccable) AND CABLING INDUCTANCE (Lcable) MUST BE LESS THAN THE ALLOWABLE CAPACITANCE (Ca) AND INDUCTANCE (La) DEFINED BY THE ASSOCIATED APPARATUS. IF THE ABOVE CRITERIA IS MET, THEN THE COMBINATION MAY BE CONNECTED.

$$V_{max} \text{ or } U_i \geq V_{oc} \text{ or } U_o \quad I_{max} \text{ or } I_i \geq I_{sc} \text{ or } I_o \quad P_{max} \text{ or } P_i \geq P_o \quad C_i + C_{cable} \leq C_a \quad L_i + L_{cable} \leq L_a$$

continued on next page

Figure 5. Notes for Loop Schematics (continued)

② THE FISCO CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS TO ASSOCIATED APPARATUS NOT SPECIFICALLY EXAMINED IN SUCH COMBINATION. THE CRITERIA FOR THE INTERCONNECTION IS THAT THE VOLTAGE (V_{max} OR U_i), CURRENT (I_{max} OR I_i), AND POWER (P_{max} OR P_i), WHICH AN INTRINSICALLY SAFE APPARATUS CAN RECEIVE AND REMAIN INTRINSICALLY SAFE, CONSIDERING FAULTS, MUST BE EQUAL TO OR GREATER THAN THE VOLTAGE (V_{oc} OR U_o), CURRENT (I_{sc} OR I_o), AND POWER (P_o) LEVELS WHICH CAN BE DELIVERED BY THE ASSOCIATED APPARATUS, CONSIDERING FAULTS AND APPLICABLE FACTORS. IN ADDITION THE MAXIMUM UNPROTECTED CAPACITANCE (C_i) AND INDUCTANCE (L_i) OF EACH APPARATUS (OTHER THAN THE TERMINATION) CONNECTED TO THE FIELD BUS MUST BE LESS THAN OR EQUAL TO 5 nF AND 10 μ H RESPECTIVELY.

IN EACH SEGMENT ONLY ONE ACTIVE DEVICE, NORMALLY THE ASSOCIATED APPARATUS, IS ALLOWED TO PROVIDE THE NECESSARY ENERGY FOR THE FIELD BUS SYSTEM. THE VOLTAGE (U_o OR V_{oc} OR V_t) OF THE ASSOCIATED APPARATUS HAS TO BE LIMITED TO THE RANGE OF 9 TO 17.5 VDC. ALL OTHER EQUIPMENT CONNECTED TO THE BUS CABLE HAS TO BE PASSIVE, MEANING THAT THEY ARE NOT ALLOWED TO PROVIDE ENERGY TO THE SYSTEM, EXCEPT FOR A LEAKAGE CURRENT OF 50 μ A FOR EACH CONNECTED DEVICE. SEPARATELY POWERED EQUIPMENT NEEDS A GALVANIC ISOLATION TO ASSURE THAT THE INTRINSICALLY SAFE FIELD BUS CIRCUIT REMAINS PASSIVE.

THE CABLE USED TO INTERCONNECT THE DEVICES NEEDS TO HAVE THE PARAMETERS IN THE FOLLOWING RANGE:

LOOP RESISTANCE R' :	15 TO 150 ohms/km
INDUCTANCE PER UNIT LENGTH L :	0.4 TO 1 mH/km
CAPACITANCE PER UNIT LENGTH C' :	80 TO 200 nF/km
$C' = C' \text{ LINE/LINE} + 0.5' \text{ LINE/SCREEN}$, IF BOTH LINES ARE FLOATING OR	
$C' = C' \text{ LINE/LINE} + C' \text{ LINE/SCREEN}$, IF THE SCREEN IS CONNECTED TO ONE LINE.	
LENGTH OF SPLICE:	< 1 m (T-BOX MUST ONLY CONTAIN TERMINAL CONNECTIONS WITH NO ENERGY STORAGE CAPABILITY)
LENGTH OF SPUR CABLE:	< 30 m
LENGTH OF TRUNK CABLE:	< 1 km

AT EACH END OF THE TRUNK CABLE AN APPROVED INFALLIBLE TERMINATION WITH THE FOLLOWING PARAMETERS IS SUITABLE:

$R = 90$ TO 100 ohms AND $C = 0$ TO 2.2 μ F

NOTE, A BUILT-IN TERMINATOR IS INCLUDED ON THE FIELD SIDE AND A SELECTABLE TERMINATOR IS AVAILABLE ON THE HOST SIDE.

THE NUMBER OF PASSIVE DEVICES CONNECTED TO THE BUS SEGMENT IS NOT LIMITED IN THE FISCO CONCEPT FOR INTRINSICALLY SAFE REASONS. IF THE ABOVE RULES ARE RESPECTED, UP TO A TOTAL LENGTH OF 1000 m (SUM OF THE LENGTH OF THE TRUNK CABLE AND ALL SPUR CABLES), THE INDUCTANCE AND CAPACITANCE OF THE CABLE WILL NOT IMPAIR THE INTRINSIC SAFETY OF THE INSTALLATION.

③ INSTALLATION MUST BE IN ACCORDANCE WITH THE NATIONAL WIRING PRACTICES OF THE COUNTRY IN USE.

④ LOOPS MUST BE CONNECTED ACCORDING TO THE BARRIER MANUFACTURER'S INSTRUCTIONS.

⑤ IF HAND-HELD COMMUNICATOR OR MULTIPLEXER IS USED, IT MUST BE IECEx APPROVED WITH ENTITY PARAMETERS AND INSTALLED PER THE MANUFACTURER'S CONTROL DRAWINGS.

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