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Erklärung zum Thema zulässige Anschlußkapazitäten an TLS Steuergeräte im Zusammenhang mit den Baumusterprüfbescheinigungen DEMKO 02 ATEX 0225421, DEMKO 02 ATEX 130952 sowie DEMKO 02 ATEX 130953 Ausstellungsdatum der zugehörigen Anlagen 17.09.2003.

Auf den Steuergeräten der Baureihen TLS-350, TLS-300 und TLS 2/ -IB / -50 werden die, in der unten stehenden Tabelle aufgeführten Systemparameter aufgeführt. Die hier aufgeführte Kapazität bzw. Induktivität stellt jedoch nicht die maximal an das Gerät anschließbaren Werte, sondern die internen Kennwerte des Gerätes auf dessen eigensicherer Seite dar. Diese Werte dienen zur Festlegung der Gesamtkapazität bzw. Gesamtinduktivität des eigensicheren Stromkreises durch die Addition mit den daran angeschlossenen Bauteile. Die daran anzuschließenden Sonden beinhalten außerdem eine interne Blockdiode, so daß bei der Berechnung der Gesamtkapazität maximal der Wert von zwei Sonden parallel berücksichtigt werden muß (Doppelfehler).

Wert	TLS-350	TLS-300	TLS 2 / -IB / -50
^{A)} [V]	12,6	12,6	12,6
^{B)} [mA]	196	194	189
^{C)} [W]	0,62	0,62	0,60
^{D)} [µF]	0,23	0,46	1,87
^{E)} [µH]	93	187	750

Systemparameter Steuergeräte

Die maximal zulässige Kapazität bzw. Induktivität sind auf Seite 3 der, in der EG-Baumusterprüfbescheinigung aufgeführten, Safety Certification ausgewiesen (siehe Anhang). Nachstehend befindet sich eine sinngemäße Übersetzung der entsprechenden Textstelle.

Die Konsole bildet den Bestandteil eines eigensicheren Systems sofern sie an ein zugelassenes und kompatibles eigensicheres Bauteil angeschlossen wird. Die damit verbundenen Geräteparameter sind:

$$\begin{aligned}
 U_o &= \text{A) VDC} \\
 I_o &= \text{B) mA} \\
 P_o &= \text{C) W} \\
 C_o &= \text{D) } \mu\text{F} \\
 L_o &= \text{E) mH}
 \end{aligned}$$

Die maximal zulässige Kapazität und Induktivität für die Gruppe IIA, unter der Berücksichtigung eines Sicherheitsfaktors von 1,5, auf die angegeben Parameter von ^{A)} VDC und ^{B)} mA beträgt $27^1 \mu\text{F}$ beziehungsweise $7,4^2 \text{ mH}$. Die maximale Spannung von nicht spezifizierten Stromkreisen sollte 250 Volt effektiv (maximal) nicht überschreiten. Die festgelegte Betriebstemperatur der Konsole beträgt 0°C bis +40°C.

¹⁾ EN 50020, Diagramm A.3

²⁾ EN 50020, Diagramm A.4

Veeder-Root GmbH



i.A. Andreas Kauffmann
Technischer Leiter Füllstandsmeßsysteme

PRODUCT CLASSIFICATION:

THE CONSOLE FORMS PART OF AN INTRINSICALLY SAFE SYSTEM WHEN CONNECTED TO AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE RATED EExia. ASSOCIATED APPARATUS PARAMETERS ARE:

U_o = 12.6 VDC
 I_o = 196 mA
 P_o = 0.62 W
 C_o = 0.23 μ F
 L_o = 93 μ H

THE MAXIMUM PERMISSIBLE CAPACITANCE AND INDUCTANCE FOR GROUP I IIA, TAKING² A 1.5 FACTOR ON SAFETY AT THE STATED PARAMETERS OF 12.6 VDC AND 196 mA IS 27.0 μ F AND 7.4 mH RESPECTIVELY. THE MAXIMUM VOLTAGE FROM UNSPECIFIED CIRCUITS SHALL NOT EXCEED 250 VOLTS RMS (MAXIMUM). THE SPECIFIED OPERATING TEMPERATURE OF THE CONSOLE IS 0°C TO +40°C.

THE OPERATING TEMPERATURES, VOLTAGES AND INTRINSICALLY SAFE PARAMETERS SPECIFIED ARE THE LIMITING ASSUMPTIONS OF THIS CERTIFICATION AND MAY NOT BE INCREASED BY DESIGN CHANGES OR PART SUBSTITUTIONS.

PROCEDURES FOR SAFE INSTALLATION AND USE ARE DEFINED IN THE INSTALLATION MANUAL.

THE CONSOLE PROVIDES INTRINSICALLY SAFE OUTPUTS IN ACCORDANCE WITH THE FOLLOWING CLASSIFICATIONS WHEN EVALUATED AGAINST THE RELEVANT STANDARDS LISTED BELOW. WHERE CONFLICTS BETWEEN THE SPECIFIED STANDARDS EXIST, THE MOST STRINGENT REQUIREMENTS HAVE BEEN MET.

[EEx ia], GROUP IIA:

EN 50014:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-GENERAL REQUIREMENTS (1998)

EN 50020:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-INTRINSIC SAFETY "I" (1995)

OR ALTERNATIVELY, EVALUATED IN CONJUNCTION WITH APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICES AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D OR,
 [EEx ia], GROUP IIA:

CSA C22.0 No.0 (1991):

CANADIAN ELECTRICAL CODE, PART II

CSA C22.0 No.0.4M (1982):

BONDING AND GROUNDING OF ELECTRICAL EQUIPMENT
 (PROTECTIVE GROUNDING)

CSA C22.0 No.14 (1995):

INDUSTRIAL CONTROL EQUIPMENT

CSA C22.0 No.94 (1991):

SPECIAL PURPOSE ENCLOSURES 2,3,4 AND 5

CSA C22.0 No.142-M (1987):

PROCESS CONTROL EQUIPMENT

CSA C22.0 No.157 (1992):

INTRINSICALLY SAFE AND NONINCENDIVE EQUIPMENT FOR USE IN
 HAZARDOUS LOCATIONS, CONSUMER AND COMMERCIAL PRODUCTS

CSA C22.0 No.213-M (1987):

NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I,
 DIVISION 2 HAZARDOUS LOCATIONS

OR ALTERNATIVELY EVALUATED IN CONJUNCTION WITH AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D:

UL 1238 (1996):

CONTROL EQUIPMENT FOR USE WITH FLAMMABLE LIQUID

DISPENSING

DEVICES.

UL 913 (2002):

INTRINSICALLY SAFE APPARATUS AND ASSOCIATED APPARATUS

FOR

USE IN CLASS I, II AND III, DIVISION 1, HAZARDOUS

<CLASSIFIED>

LOCATIONS.

FOOTNOTES:

⁽¹⁾ EN 50020, FIGURE A.3

⁽²⁾ EN 50020, FIGURE A.4

VEEDER-ROOT 
 SIMSBURY, CONNECTICUT 06070 U.S.A.

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SAFETY CERTIFICATION
 TLS-350 SERIES CONSOLE

SIZE	DRAWING NUMBER	REV.	STATUS
D	331671-005	F	REL
SCALE	FULL	SHEET	3 OF 13

PRODUCT CLASSIFICATION:

THE CONSOLE FORMS PART OF AN INTRINSICALLY SAFE SYSTEM WHEN CONNECTED TO AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE RATED EExia. ASSOCIATED APPARATUS PARAMETERS ARE:

U_o = 12.6 VDC
 I_o = 194 mA
 P_o = 0.62 W
 C_o = 0.46 μF
 L_o = 187 μH

THE MAXIMUM PERMISSIBLE CAPACITANCE AND INDUCTANCE FOR GROUP¹ IIA, TAKING² A 1.5 FACTOR ON SAFETY AT THE STATED PARAMETERS OF 12.6 VDC AND 194 mA IS 27.0 μF AND 7.4 mH RESPECTIVELY. THE MAXIMUM VOLTAGE FROM UNSPECIFIED CIRCUITS SHALL NOT EXCEED 250 VOLTS RMS (MAXIMUM). THE SPECIFIED OPERATING TEMPERATURE OF THE CONSOLE IS 0°C TO +40°C.

THE OPERATING TEMPERATURES, VOLTAGES AND INTRINSICALLY SAFE PARAMETERS SPECIFIED ARE THE LIMITING ASSUMPTIONS OF THIS CERTIFICATION AND MAY NOT BE INCREASED BY DESIGN CHANGES OR PART SUBSTITUTIONS.

PROCEDURES FOR SAFE INSTALLATION AND USE ARE DEFINED IN THE INSTALLATION MANUAL.

THE CONSOLE IS ASSESSED AS HAVING INTRINSICALLY SAFE OUTPUTS IN ACCORDANCE WITH THE FOLLOWING CLASSIFICATIONS WHEN EVALUATED AGAINST THE RELEVANT STANDARDS LISTED BELOW. WHERE CONFLICTS BETWEEN THE SPECIFIED STANDARDS EXIST, THE MOST STRINGENT REQUIREMENTS HAVE BEEN MET.

[EEx ia], GROUP IIA:

EN 50014:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-GENERAL REQUIREMENTS (1998)

EN 50020:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-INTRINSIC SAFETY "I" (1995)

OR ALTERNATIVELY, EVALUATED IN CONJUNCTION WITH APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICES AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D OR,
 [EEx ia], GROUP IIA:

CSA C22.0 No.0 (1991):

CANADIAN ELECTRICAL CODE, PART II

CSA C22.0 No.0.4M (1982):

BONDING AND GROUNDING OF ELECTRICAL EQUIPMENT
 (PROTECTIVE GROUNDING)

CSA C22.0 No.14 (1995):

INDUSTRIAL CONTROL EQUIPMENT

CSA C22.0 No.94 (1991):

SPECIAL PURPOSE ENCLOSURES 2,3,4 AND 5

CSA C22.0 No.142-M (1987):

PROCESS CONTROL EQUIPMENT

CSA C22.0 No.157 (1992):

INTRINSICALLY SAFE AND NONINCENDIVE EQUIPMENT FOR USE IN
 HAZARDOUS LOCATIONS, CONSUMER AND COMMERCIAL PRODUCTS

CSA C22.0 No.213-M (1987):

NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS 1,
 DIVISION 2 HAZARDOUS LOCATIONS

OR ALTERNATIVELY EVALUATED IN CONJUNCTION WITH AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D:

UL 1238 (1996):

CONTROL EQUIPMENT FOR USE WITH FLAMMABLE LIQUID

DISPENSING

DEVICES.

UL 913 (2002):

INTRINSICALLY SAFE APPARATUS AND ASSOCIATED APPARATUS

FOR

USE IN CLASS I, II AND III, DIVISION 1, HAZARDOUS


(CLASSIFIED)

LOCATIONS.

FOOTNOTES:

⁽¹⁾EN 50020, FIGURE A.3

⁽²⁾EN 50020, FIGURE A.4

			
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SAFETY CERTIFICATION TLS-300 SERIES CONSOLE			
SIZE	DRAWING NUMBER	REV.	STATUS
D	331671-004	D	REL
SCALE	FULL	SHEET	3 OF 13

PRODUCT CLASSIFICATION:

THE CONSOLE FORMS PART OF AN INTRINSICALLY SAFE SYSTEM WHEN CONNECTED TO AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE. ASSOCIATED APPARATUS PARAMETERS ARE:

U_o = 12.6 VDC
I_o = 189 mA
P_o = 0.60 W
C_o = 1.87 μ F
L_o = 750 μ H

THE MAXIMUM PERMISSIBLE CAPACITANCE AND INDUCTANCE FOR GROUP IIA, TAKING A 1.5 FACTOR ON SAFETY AT THE STATED PARAMETERS OF 12.6 VDC AND 189 mA IS 27.0 μ F AND 9.4 mH RESPECTIVELY.

THE MAXIMUM VOLTAGE FROM UNSPECIFIED CIRCUITS SHALL NOT EXCEED 250 VOLTS RMS (MAXIMUM).

THE SPECIFIED OPERATING TEMPERATURE OF THE CONSOLE IS 0°C TO +40°C.

THE OPERATING TEMPERATURES, VOLTAGES AND INTRINSICALLY SAFE PARAMETERS SPECIFIED ARE THE LIMITING ASSUMPTIONS OF THIS CERTIFICATION AND MAY NOT BE INCREASED BY DESIGN CHANGES OR PART SUBSTITUTIONS.

PROCEDURES FOR SAFE INSTALLATION AND USE ARE DEFINED IN THE INSTALLATION MANUAL.

THE CONSOLE IS ASSESSED AS HAVING INTRINSICALLY SAFE OUTPUTS IN ACCORDANCE WITH THE FOLLOWING CLASSIFICATIONS WHEN EVALUATED AGAINST THE RELEVANT STANDARDS LISTED BELOW. WHERE CONFLICTS BETWEEN THE SPECIFIED STANDARDS EXIST, THE MOST STRINGENT REQUIREMENTS HAVE BEEN MET.

[EEEx ia], GROUP IIA:

EN 50014:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-GENERAL REQUIREMENTS (1998)

EN 50020:

ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-INTRINSIC SAFETY "I" (1995)

OR ALTERNATIVELY, EVALUATED IN CONJUNCTION WITH APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICES AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D OR,

[EEEx ia], GROUP IIA:

CSA C22.0 No.0 (1991):

CANADIAN ELECTRICAL CODE, PART II

CSA C22.0 No.0.4M (1982):

BONDING AND GROUNDING OF ELECTRICAL EQUIPMENT
(PROTECTIVE GROUNDING)

CSA C22.0 No.14 (1995):

INDUSTRIAL CONTROL EQUIPMENT

CSA C22.0 No.94 (1991):

SPECIAL PURPOSE ENCLOSURES 2,3,4 AND 5

CSA C22.0 No.142-M (1987):

PROCESS CONTROL EQUIPMENT

CSA C22.0 No.157 (1992):

INTRINSICALLY SAFE AND NONINCENDIVE EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS, CONSUMER AND COMMERCIAL PRODUCTS

CSA C22.0 No.213-M (1987):

NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS 1, DIVISION 2 HAZARDOUS LOCATIONS

OR ALTERNATIVELY EVALUATED IN CONJUNCTION WITH AN APPROVED AND COMPATIBLE INTRINSICALLY SAFE DEVICE AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION I, GROUP D:

UL 1238 (1996):

CONTROL EQUIPMENT FOR USE WITH FLAMMABLE LIQUID

DISPENSING

DEVICES.

UL 913 (2002):

INTRINSICALLY SAFE APPARATUS AND ASSOCIATED APPARATUS

FOR

USE IN CLASS I, II AND III, DIVISION 1, HAZARDOUS


(CLASSIFIED)

LOCATIONS.

FOOTNOTES:

(1) EN 50020, FIGURE A.3

(2) EN 50020, FIGURE A.4

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SAFETY CERTIFICATION TLS2, TLS-IB, TLS-50 CNSL			
SIZE	DRAWING NUMBER	REV.	STATUS
D	331671-002	E	REL
SCALE	FULL	SHEET	3 OF 10