

**Hazardous Area:**

Zone 0, Group IIC

Zone 20, Group IIIC

Class I, Zone 0, Group IIC

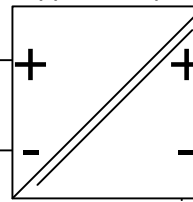
Class I,II,III, Division 1, Groups A-G

REVISIONS

ZONE/SYM.	REV	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
	A	First release	2019-06-05	J. Marcotte	A. Strauch	A. Strauch
D6,p1; B1-3,p2	B	Added Hazardous area description on p1 and notes 9+10 on p2	2019-07-05	J. Marcotte	J-F Ferland	J-F Ferland
B-C:4-6,p2	C	Removed C1, H1 and H2 in table 2, page 2. Max process H3 modified from 450 to 400 in table 2, page 2	2020-07-24	J. Marcotte	J-F Ferland	J-F Ferland

LWT Series
Transmitter
HART versionTransmitter Connected to
Local or Remote Probe
(Simple Apparatus – Note 9)

4-20mA + HART

Cable Shield Connected
to Grounding Screw in
Terminal Box
CompartmentMax Voltage 30VDC
Max Current and Power
per Tables in table 1Cable Shield
Unconnected
at This EndCertified associated
Apparatus (See note 1)

+V Power Source

Voltage Output

Common

If associated apparatus is to be grounded,
I.S. Ground Resistance Between GND
And Earth Must be Less Than 1.0 ohm.Hazardous
AreaNon Hazardous
Area**ATEX/IECEX Protection method****Probe Mounting**

II 1 G Ex ia IIC T4...T1 Ga Tambient -50°C to 43°C...75°C	Local
II 1 G Ex ia IIC T6...T4 Ga Tambient -50°C to 40°C...85°C	Remote
II 1 D Ex ia IIIC T88°C...T368°C Da Tambient -50°C to 43°C...75°C	Local
II 1 D Ex ia IIIC T52°C...T93°C Da Tambient -50°C to 40°C...85°C	Remote

US/Canada Protection method**Probe Mounting**

CI I, Zone 0, AEx/Ex ia IIC T4...T1 Ga Tambient -50°C to 43°C...75°C	Local
CI I, Zone 0, AEx/Ex ia IIC T6...T4 Ga Tambient -50°C to 40°C...85°C	Remote
Zone 20, AEx/Ex ia IIIC T88°C...T368°C Da Tambient -50°C to 43°C...75°C	Local
Zone 20, AEx/Ex ia IIIC T52°C...T93°C Da Tambient -50°C to 40°C...85°C	Remote
Intrinsically safe, Class I, II, III, Division 1, Groups A-G, T4...T1 Tambient -50°C to 43°C...75°C	Local
Intrinsically safe, Class I, II, III, Division 1, Groups A-G, T6...T4 Tambient -50°C to 40°C...85°C	Remote

**Important: Refer to page 2
for specific notes****CRITICAL / SCHEDULE DOCUMENT**
NO MODIFICATION PERMITTED WITHOUT
APPROVAL FROM AGENCY / NOTIFIED BODY

Product LWT series		ABB inc. 3400, rue Pierre-Arduin, Québec, Qc, Canada, G1P 0B2 Tel (418) 877-2944 Fax (418) 877-2834		ABB
APPROVALS	DATE YYYY/MM/DD	TITLE LWT Intrinsic Safety ia Interconnect Diagram Hart Version		
Drawn J. Marcotte	2019-06-05	SIZE A	DRAWING NO. 3KXL001177U0109	REV. C
Checked A. Strauch	2019-06-05			
Checked				
Approved A. Strauch	2019-06-05	SCALE N/A	FILE NAME 3KXL001177U0109_rev_C.vsd	SHEET 1 of 2

	6	5	4	3	2	1																																																																								
D	Table 1: Input parameters for intrinsic safety, Ex ia <table><tr><th>LWT Display Type</th><th>Paremeter Set #</th><th>Ui (V)</th><th>Ii (mA)</th><th>Pi (W)</th><th>Ci (nF)</th><th>Li (uH)</th></tr><tr><td rowspan="4">L1 (Push Buttons HMI) L0 (no display)</td><td>1</td><td>30</td><td>100</td><td>0.75</td><td>19</td><td>20</td></tr><tr><td>2</td><td>Not Used</td><td>Not Used</td><td>Not Used</td><td>Not Used</td><td>Not Used</td></tr><tr><td>3</td><td>30</td><td>100</td><td>1.4</td><td>19</td><td>20</td></tr><tr><td>4</td><td>30</td><td>50</td><td>0.4</td><td>19</td><td>20</td></tr><tr><td colspan="7"></td></tr><tr><th>LWT Display Type</th><th>Paremeter Set #</th><th>Ui (V)</th><th>Ii (mA)</th><th>Pi (W)</th><th>Ci (nF)</th><th>Li (uH)</th></tr><tr><td rowspan="4">L2 (Through the Glass HMI)</td><td>1</td><td>30</td><td>100</td><td>0.75</td><td>19</td><td>20</td></tr><tr><td>2</td><td>Not Used</td><td>Not Used</td><td>Not Used</td><td>Not Used</td><td>Not Used</td></tr><tr><td>3</td><td>30</td><td>100</td><td>1.4</td><td>19</td><td>20</td></tr><tr><td>4</td><td>30</td><td>50</td><td>0.4</td><td>19</td><td>20</td></tr></table>						LWT Display Type	Paremeter Set #	Ui (V)	Ii (mA)	Pi (W)	Ci (nF)	Li (uH)	L1 (Push Buttons HMI) L0 (no display)	1	30	100	0.75	19	20	2	Not Used	Not Used	Not Used	Not Used	Not Used	3	30	100	1.4	19	20	4	30	50	0.4	19	20								LWT Display Type	Paremeter Set #	Ui (V)	Ii (mA)	Pi (W)	Ci (nF)	Li (uH)	L2 (Through the Glass HMI)	1	30	100	0.75	19	20	2	Not Used	Not Used	Not Used	Not Used	Not Used	3	30	100	1.4	19	20	4	30	50	0.4	19	20	D
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C	Table 2: T-class by parameter set (IS), Local Probe Configuration <table><tr><th rowspan="2">Coupler Type</th><th rowspan="2">Max Tprocess (°C)</th><th rowspan="2">Max Ta (°C), L1 Display</th><th rowspan="2">Max Ta (°C), L2 Display</th><th rowspan="2">L0, L1 Display Parameter Set(s) (See Table 1)</th><th rowspan="2">L2 Display Parameter Set(s) (See Table 1)</th><th colspan="2">Temperature Class</th></tr><tr><th>Ex ia IIC Ga IS, Class I,II,III, Div 1, Groups A-G</th><th>Ex ia IIIC Da (T____°C)</th></tr><tr><td>S</td><td>130</td><td>70</td><td>54</td><td>1</td><td>1</td><td>T4</td><td>102</td></tr><tr><td>S</td><td>204</td><td>70</td><td>48</td><td>1</td><td>1</td><td>T4</td><td>135</td></tr><tr><td>H3</td><td>130</td><td>70</td><td>56</td><td>1</td><td>1</td><td>T4</td><td>120</td></tr><tr><td>H3</td><td>230</td><td>75</td><td>52</td><td>1</td><td>1</td><td>T3</td><td>197</td></tr><tr><td>H3</td><td>340</td><td>74</td><td>48</td><td>1</td><td>1</td><td>T2</td><td>286</td></tr><tr><td>H3</td><td>400</td><td>69</td><td>43</td><td>1</td><td>1</td><td>T1</td><td>368</td></tr></table>						Coupler Type	Max Tprocess (°C)	Max Ta (°C), L1 Display	Max Ta (°C), L2 Display	L0, L1 Display Parameter Set(s) (See Table 1)	L2 Display Parameter Set(s) (See Table 1)	Temperature Class		Ex ia IIC Ga IS, Class I,II,III, Div 1, Groups A-G	Ex ia IIIC Da (T____°C)	S	130	70	54	1	1	T4	102	S	204	70	48	1	1	T4	135	H3	130	70	56	1	1	T4	120	H3	230	75	52	1	1	T3	197	H3	340	74	48	1	1	T2	286	H3	400	69	43	1	1	T1	368	C													
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B	Table 3: T-class by parameter set (IS), Remote Probe Configuration <table><tr><th rowspan="2">Coupler Type</th><th rowspan="2">Max Tprocess (°C)</th><th rowspan="2">Max Ta (°C), L1 Display</th><th rowspan="2">Max Ta (°C), L2 Display</th><th rowspan="2">L0, L1 Display Parameter Set(s) (see Table 1)</th><th rowspan="2">L2 Display Parameter Set(s) (See Table 1)</th><th colspan="2">Temperature Class</th></tr><tr><th>Ex ia IIC Ga IS, Class I,II,III, Div 1</th><th>Ex ia IIIC Da (T____°C)</th></tr><tr><td>All Versions</td><td>N/A*</td><td>40</td><td>44</td><td>4</td><td>4</td><td>T6</td><td>52</td></tr><tr><td>All Versions</td><td>N/A*</td><td>40</td><td>56</td><td>3, 4</td><td>3, 4</td><td>T5</td><td>64</td></tr><tr><td>All Versions</td><td>N/A*</td><td>70</td><td>60</td><td>1</td><td>1</td><td>T4</td><td>78</td></tr><tr><td>All Versions</td><td>N/A*</td><td>85</td><td>60</td><td>1</td><td>1</td><td>T4</td><td>93</td></tr></table> *Equipment is independant from the Process temperature and instrument coupler in the Remote version						Coupler Type	Max Tprocess (°C)	Max Ta (°C), L1 Display	Max Ta (°C), L2 Display	L0, L1 Display Parameter Set(s) (see Table 1)	L2 Display Parameter Set(s) (See Table 1)	Temperature Class		Ex ia IIC Ga IS, Class I,II,III, Div 1	Ex ia IIIC Da (T____°C)	All Versions	N/A*	40	44	4	4	T6	52	All Versions	N/A*	40	56	3, 4	3, 4	T5	64	All Versions	N/A*	70	60	1	1	T4	78	All Versions	N/A*	85	60	1	1	T4	93	B																													
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A	General Notes: 1. CERTIFIED ASSOCIATED APPARATUS PROVIDING GALVANIC ISOLATION FROM EARTH. SHUNT DIODE SAFETY BARRIERS DO NOT PROVIDE THE REQUIRED ISOLATION! THE INTRINSICALLY SAFE OUTPUT OF THE ASSOCIATED APPARATUS SHALL BE CERTIFIED FOR CONNECTION TO THE EXPLOSIVE ATMOSPHERE (ZONE & GROUP) IN WHICH THE LWT IS INSTALLED AS Ex ia . 2. TRANSMITTER DOES NOT PROVIDE GALVANIC ISOLATION FROM EARTH AT 500 V rms. 3. ASSOCIATED APPARATUS SHALL MEET THE FOLLOWING REQUIREMENTS: Uo ≤ LWT Ui, Io ≤ LWT Ii, Po ≤ LWT Pi, Co ≥ (Ccable + LWT Ci), Lo ≥ (Lcable + LWT Li). 4. SYSTEM CALCULATIONS: ADD CABLE CAPACITANCE & INDUCTANCE TO TRANSMITTER ENTITY PARAMETERS (I.E. ALL FIELD INSTALLED CAPACITANCE & INDUCTANCE MUST BE CONSIDERED). IF CABLE PARAMETERS ARE NOT KNOWN, 60pF/ft & 0.2uH/ft SHOULD BE USED. 5. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS. AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT POUR LES EMPLACEMENTS DANGEREUX RENDRE CE MATERIEL INACCEPTABLE. 6. CONTROL EQUIPMENT CONNECTED TO ASSOCIATED APPARATUS SHALL NOT USE OR GENERATE IN EXCESS OF THE SPECIFIED UM OF THE ASSOCIATED APPARATUS (TYPICALLY 250 V RMS). 7. INSTALL PER EN 60079-14, IEC 60079-14, ANSI/NFPA 70 (US NATIONAL ELECTRICAL CODE), CSA C22.1 (CANADIAN ELECTRICAL CODE)(AS APPLICABLE) AND APPLICABLE INSTALLATION CODES. 8. TO ENSURE INTRINSIC SAFETY, USE ONLY ABB-SUPPLIED CABLES (60 M, MAXIMUM) TO INTERCONNECT TRANSMITTER AND REMOTE PROBE. 9. PROBE IS SIMPLE APPARATUS IN ACCORDANCE WITH APPLICABLE INTRINSIC SAFETY STANDARDS AND INSTALLATION CODES. SEPARATE CERTIFICATION MARKING OF REMOTE PROBE IS NOT REQUIRED. 10. PROBE IS NOT SUBJECT TO SELF-HEATING AND WILL ASSUME THE TEMPERATURE OF ITS ENVIRONMENT. CRITICAL / SCHEDULE DOCUMENT NO MODIFICATION PERMITTED WITHOUT APPROVAL FROM AGENCY / NOTIFIED BODY ABB inc. 3400, rue Pierre-Arduin, Québec, Qc, Canada, G1P 0B2 Tel (418) 877-2944 Fax (418) 877-2834 TITLE LWT Intrinsic Safety ia Interconnect Diagram Notes SIZE A DRAWING NO. 3KXL001177U0109 REV. C SCALE N/A FILE NAME 3KXL001177U0109_rev_C.vsd SHEET 2 of 2 6 5 4 3 2 1																																																																													