

Certificate of Compliance

Certificate: 80022351 Master Contract: 151079

Project: 80203728 **Date Issued:** 2024-05-07

Issued To: Endress+Hauser SE+Co. KG

Hauptstrasse 1

Maulburg, Baden-Württemberg, 79689

Germany

Attention: Emil Remolana

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Anil Sodhi Anil Sodhi

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations—Certified to

U.S. Standards

Class I, Division 2, Groups A, B, C and D, T6...T1:

	Liquiphant, series FTL41-CCbbcdefghiijjkkk + mmnnooqqrrss
	where
	= A2, A4, A8
	c (display; operation) = A
Product	d (housing; material) = B
	e (electrical conn.) = B, F, I
	f (application) = A
	g (surface finish) = A
	h (probe version) $= 1, 2, 3$



	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety) jj (process conn.) = 2 alphanumeric characters (not relevant for safety) kkk (process conn. size)= 3 alphanumeric characters (not relevant for safety) + (additional options; any number of each of the following options may be chosen) mm (services) = 2 alphanumeric characters (not relevant for safety) nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety) oo (additional approvals) = 2 alphanumeric characters (not relevant for safety) qq (accessories mounted) = 2 alphanumeric characters (not relevant for safety) rr (accessories enclosed) = PB; or 2 alphanumeric characters (not relevant for safety) ss (marking) = 2 alphanumeric characters (not relevant for safety)		
	Note: Some option codes may be restricted for certain model types. Dependent on Output option, bb:		
	A2 (FEL42): 1055Vdc, 350 mA;		
Electrical Rating (bb)	A4 (FEL44): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated		
8(11)	253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A		
	A8 (FEL48): 8.2Vdc, NAMUR		
Enclosure Rating	Type 4X/6P, IP66/68		
Temp. code and	T6T3 with standard Ta of -40°C to + 70°C and process temperature -40°C to		
ambient/process	+150°C; refer to installation drawing for specific T-code and limitations of		
temperature	temperature ranges		
MWP/Process Seal	580 psi (40 bar)		
	Single Seal		
Installation Drawing	XA01804F		

	Liquiphant, series FTL51B-aabbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	Liquiphant, series FTL63-aabbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
Product	where aa (approval) = CC, CD bb (output) = A1, A2, A3, A4, A7, A8, BA, GA, 9Y c (display; operation) = A, B, E, F d (housing; material) = B, C, M, N e (electrical conn.) = B, C, and F (aa=CC only), H and I (aa=CC and CD) f (application) = A, B, C g (surface finish) = A, Y (FTL51B) = A, B, C, D, E, F, Y (FTL63) h (probe version) = 1, 2, 3 ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety) jj (process conn.) = 2 alphanumeric characters (not relevant for safety) kkk (seal) = 3 alphanumeric characters (not relevant for safety)		



	+ (additional options; any number of each of the following options may be			
	chosen)			
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)			
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety) mm (services) = 2 alphanumeric characters (not relevant for safety)			
		nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant		
	for safety)	umaria aharaatara	(not relevant for cofety)	
	pp (sensor design) = MR, MS, MS	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)		
	qq (accessories mounted) = NA, NF			
	rr (accessories enclosed) = PA, PB,			
		•	relevant for safety)	
			relevant for safety)	
		`	• *	
	Note: Some option codes may be restricted	ed for certain mod	el types.	
	Dependent on option bb (output):			
	A1 (FEL61): 19253 Vac, 2VA, 50/	60Hz		
	A2 (FEL62): 1055Vdc, 350 mA	105077 /0	5 00 1 14 (0 1) (0 5 0 1 14	
	A3 (FEL64DC): 920Vdc, 1W; contact		A, 500VA (pt=1) / 250VA	
	(pf = 0.7), or 125Vdc/0.		V.J. 1 2W	
Electrical Rating	A4 (FEL64): 19253 Vac, 25VA, 50 rated 253Vac/2A, 500V			
_	125Vdc/0.2A	A (pi=1) / 230 v A	(pr = 0.7), or	
	A7 (FEL67): 9.512.5 Vdc, 100mW			
	A8 (FEL68): 8.2Vdc, NAMUR			
	BA (FEL60H): 10.535Vdc, 420mA			
	GA (FEL60D): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6P, IP66/68			
	Temperature Code and	Extensions/L	imitations based on	
	Ambient Temperature Range	options:		
	T6T3	nn=JL	min. temp = -50° C	
Temp. code and	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52°C	
ambient/process temperature		nn=JT	min. temp = -60°C	
temperature	Process temperature -50°C to +150°C;		1	
	refer to installation drawing for specific T-code and additional derating of temperature ranges.			
	Dependent on option f (application):			
	A: 928 psi (64 bar)			
MWP/Process seal	B: 1450 psi (100 bar)			
	C: 362 psi (25 bar)			
	Single Seal			
Installation Drawing $XA01814F$ (aa = CC; bb \neq BA) or $XA01815F$ (aa = CD; bb \neq BA)				
mstanation Drawing	XA03124F (aa = CC; bb = BA) or $XA03$	125F (aa = CD; bl	b = BA)	



	T		
Liquiphant, series FTL62 -aabbcdefghiijjkkk + yyllmmnnooppqqrrzzss			
	where		
	aa (approval) = CC, CD		
	bb (output) = A1, A2, A3, A4, A7, A8, BA, GA		
	c (display; operation) = A, B, E, F		
	d (housing; material) = B, C, M, N		
	e (electrical conn.) = B, C and F (aa=CC only), H and I (aa=CC and CD)		
	f (application) = C , N , P , T		
	g (surface refinement) = N, P, Q, R, T, Y		
	h (probe version) = 2, 3		
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)		
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)		
	kkk (seal) = 3 alphanumeric characters (not relevant for safety)		
Product	+ (additional options; any number of each of the following options may be		
Troduct	chosen)		
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)		
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)		
	mm (services) = 2 alphanumeric characters (not relevant for safety)		
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant		
	for safety)		
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)		
	pp (sensor design) = MR, MS, M9		
	qq (accessories mounted) = NA, NF, NG, O9		
	rr (accessories enclosed) = PA, PB, R6, R9		
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)		
	ss (marking) = 2 alphanumeric characters (not relevant for safety)		
	Note: Some option codes may be restricted for certain model types.		
	Dependent on option bb (output):		
	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz		
	A2 (FEL62): 1055Vdc, 350 mA		
	A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA		
	(pf = 0.7), or $125 Vdc/0.2A$		
F1 1 D	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts		
Electrical Rating	rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or		
	125Vdc/0.2A		
	A7 (FEL67): 9.512.5 Vdc, 100mW		
	A8 (FEL68): 8.2Vdc, NAMUR		
	BA (FEL60H): 10.535Vdc, 420mA		
	GA (FEL60D): 2126Vdc, 150mW		
Enclosure Rating	Type 4X/6P, IP66/68		



	Temperature Code and Extensions/Limitations based of Ambient Temperature Range options:		/Limitations based on
	T6T3	nn=JL	min. temp = -50° C
Temp. code and ambient/process	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52 °C
temperature		nn=JT	min. temp = -60° C
	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.		
MWP/Process seal	Dependent on option f (application): C: 362 psi (25 bar) N: 580 psi (40 bar) P: 580 psi (40 bar) T: 362 psi (25 bar) Single Seal		
Installation Drawing	$XA02038F$ (aa = CC; bb \neq BA) or $XA02039F$ (aa = CD; bb \neq BA) $XA03127F$ (aa = CC; bb = BA) or $XA03128F$ (aa = CD; bb = BA)		

Liquiphant, series FTL64 -aabbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	where	
	aa (approval) = CC, CD	
	bb (output) = A1, A2, A3, A4, A7, A8, BA, GA	
	c (display; operation) = A, B, E, F	
	d (housing; material) = B, C, M, N	
	e (electrical conn.) = B, C and F (aa=CC only), H and I (aa=CC and CD)	
	f (application) = $D, E, R, 9$	
	g (surface finish) $= A, R, Y$	
	h (probe version) $= 1, 2$	
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)	
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)	
Product	kkk (seal) = 3 alphanumeric characters (not relevant for safety)	
Tioduct	+ (additional options; any number of each of the following options may be	
	chosen)	
	yy (operating lang.) $= 2$ alphanumeric characters (not relevant for safety)	
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)	
	mm (services) = 2 alphanumeric characters (not relevant for safety)	
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant	
	for safety)	
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)	
	pp (sensor design) = no options available	
	qq (accessories mounted) = NA, NF, NG, O9	
	rr (accessories enclosed) = PA, PB, R6, R9	
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)	
	ss (marking) = 2 alphanumeric characters (not relevant for safety)	



	Note: Some option codes may be restricted for certain model types.		
Electrical Rating	Note: Some option codes may be restricted for certain model types. Dependent on option bb (output): A1 (FEL61): 19253 Vac, 2VA, 50/60Hz A2 (FEL62): 1055Vdc, 350 mA A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A A7 (FEL67): 9.512.5 Vdc, 100mW A8 (FEL68): 8.2Vdc, NAMUR BA (FEL60H): 10.535Vdc, 420mA GA (FEL60D): 2126Vdc, 150mW		
Enclosure Rating	Type 4X/6P, IP66/68		
Temp. code and ambient/process temperature	Temperature Code and Ambient Temperature Range T6T1 -40°C to + 70°C Process temperature -60°C to +300°C; refer to installation drawing for specific T-code and additional derating of temperature ranges. Extensions/Limitations based on options: nn=JL min. temp = -50°C nn=JT min. temp = -60°C		
MWP/Process seal	Dependent on option f (application): D: 1450 psi (100 bar) E: 1450 psi (100 bar) R: 580 psi (40 bar) 9: 1450 psi (100 bar) Single Seal		
Installation Drawing	$XA02041F$ (aa = CC; bb \neq BA) or $XA02042F$ (aa = CD; bb \neq BA) $XA03130F$ (aa = CC; bb = BA) or $XA03131F$ (aa = CD; bb = BA)		

Class I, Division 1, Groups A, B, C, D T6...T3 Ex db IIC T6...T3 Ga/Gb Class I, Zone 0/1, AEx db IIC T6...T3 Ga/Gb

	Liquiphant, series FTL4 2 where	I-CIbbcdefghiijjkkk + mmnnooqqrrss
Droduat	1 2	= A2, A4, A8
Product	c (display; operation) d (housing; material)	
	e (electrical conn.)	= I
	f (application)	= A



	g (surface finish) = A, Y h (probe version) = 1, 2, 3 ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety) jj (process conn.) = 2 alphanumeric characters (not relevant for safety) kkk (process conn. size)= 3 alphanumeric characters (not relevant for safety) + (additional options; any number of each of the following options may be chosen) mm (services) = 2 alphanumeric characters (not relevant for safety) nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety) oo (additional approvals) = 2 alphanumeric characters (not relevant for safety) qq (accessories mounted) = 2 alphanumeric characters (not relevant for safety) rr (accessories enclosed) = PB; or 2 alphanumeric characters (not relevant for safety) ss (marking) = 2 alphanumeric characters (not relevant for safety) Note: Some option codes may be restricted for certain model types.		
Electrical Rating	Dependent on Output option, bb: A2 (FEL42): 1055Vdc, 350 mA; A4 (FEL44): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A A8 (FEL48): 8.2Vdc, NAMUR		
Enclosure Rating	Type 4X/6P, IP66/68		
Temp. code and	T6T3 with standard Ta of -40°C to + 70°C and process temperature -40°C to		
ambient/process	+150°C; refer to installation drawing for specific T-code and limitations of		
temperature	temperature ranges		
MWP/Process Seal	580 psi (40 bar) Single Seal		
Installation Drawing	XA01805F		

Class I, Division 1, Groups A,B,C,D; Class II, Division 1, Groups E,F,G: Class III T6...T1 Ex db IIC T6...T1 Ga/Gb Class I, Zone 0/1, AEx db IIC T6...T1 Ga/Gb

	Liquiphant, series FTL51B-CDbbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	Liquiphant, series FTL63-CD bbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	where		
	bb (output) = $A1, A2, A4, A7, A8, BA, GA, 9Y$		
Dwaduat	c (display; operation) = A, B, E, F		
Product	d (housing; material) = B, C, M, N		
	e (electrical conn.) = H, I		
	f (application) = A, B, C		
	g (surface finish) = $A, Y (FTL51B)$		
	= A, B, C, D, E, F, Y (FTL63)		



Electrical Rating	kkk (seal) = 3 alphanumer + (additional options; any number of chosen) yy (operating lang.) = 2 alphanumer Il (Applic. Package) = 2 alphanumer mm (services) = 2 alphanumer nn (test; Certificate) = JL, JN, JT; of for safety) oo (additional approvals) = 2 alphan pp (sensor design) = MR, MS, MS qq (accessories mounted) = NA, NF, rr (accessories enclosed) = PA, PB, zz (firmware vers.) = 2 alphanumer ss (marking) = 2 alphanumer ss (marking) = 2 alphanumer Note: Some option codes may be restricted Dependent on option bb (output): A1 (FEL61): 19253 Vac, 2VA, 50/A2 (FEL62): 1055Vdc, 350 mA A3 (FEL64DC): 920Vdc, 1W; contacts 250VA (pf = 0.7), or 12 A4 (FEL64): 19253 Vac, 25VA, 50/A2 (FEL65): 9.512.5 Vdc, 100mW A8 (FEL67): 9.512.5 Vdc, 100mW A8 (FEL68): 8.2Vdc, NAMUR	ric characters (no ric characters (no each of the followard characters) (no ric characters (no ric characters (no r 2 alphanumeric umeric characters) (no no characters) (no character	at relevant for safety) at relevant for safety) wing options may be at relevant for safety) at relevant for safety) at relevant for safety) characters (not relevant as (not relevant for safety) at relevant for safety)
	BA (FEL60H): 10.535Vdc, 420mA	A	
Enclosure Rating	GA (FEL60D): 2126Vdc, 150mW Type 4X/6P, IP66/68		
Temp. code and ambient/process	Temperature Code and Ambient Temperature Range T6T3 -40°C to + 70°C	Extensions/I options: nn=JL nn=JN nn=JT	Limitations based on min. temp = -50°C min. temp = -52°C min. temp = -60°C
temperature	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.		
MWP/Process seal	Dependent on option f (application): A: 928 psi (64 bar) B: 1450 psi (100 bar) C: 362 psi (25 bar)		



	Single Seal
Installation Drawing	$XA01815F$ (bb \neq BA) or $XA03125F$ (bb $=$ BA)

	Liquiphant, series FTL62-CDbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) = $A1, A2, A3, A4, A7, A8, BA, GA$
	c (display; operation) = A, B, E, F
	d (housing; material) = B, C, M, N
	e (electrical conn.) = H, I
	f (application) = C , N , P , T
	g (surface refinement) = N, P, Q, R, T, Y
	h (probe version) $= 2, 3$
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)
	kkk (seal) = 3 alphanumeric characters (not relevant for safety)
	+ (additional options; any number of each of the following options may be
Product	chosen)
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant
	for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = MR, MS, M9
	qq (accessories mounted) = NA, NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)
	ss (marking) = 2 alphanumeric characters (not relevant for safety)
	Note: Some option codes may be restricted for certain model types.
	Dependent on option bb (output):
	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz
	A2 (FEL62): 1055Vdc, 350 mA
	A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA
	(pf = 0.7), or $125Vdc/0.2A$
Electrical Dating	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts
Electrical Rating	rated 253 Vac/2A, 500 VA (pf=1) / 250 VA (pf = 0.7), or
	125Vdc/0.2A
	A7 (FEL67): 9.512.5 Vdc, 100mW
	A8 (FEL68): 8.2Vdc, NAMUR
	BA (FEL60H): 10.535Vdc, 420mA
	GA (FEL60D): 2126Vdc, 150mW
Enclosure Rating	Type 4X/6P, IP66/68



	Temperature Code and Ambient Temperature Range	Extensions/Limitations based on options:		
m 1 1	T6T3	nn=JL	min. temp = -50°C	
Temp. code and ambient/process	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52°C	
temperature		nn=JT	min. temp = -60° C	
	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.			
MWP/Process seal	Dependent on option f (application): C: 362 psi (25 bar) N: 580 psi (40 bar) P: 580 psi (40 bar) T: 362 psi (25 bar) Single Seal			
Installation Drawing	$XA02039F (bb \neq BA) \text{ or } XA03128F (bb = BA)$			

	Liquiphant, series FTL64-CD bbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) = $A1, A2, A3, A4, A7, A8, BA, GA$
	c (display; operation) = A, B, E, F
	d (housing; material) = B, C, M, N
	e (electrical conn.) = H, I
	f (application) = $D, E, R, 9$
	g (surface finish) = A, R, Y
	h (probe version) = 1, 2
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)
	kkk (seal) = 3 alphanumeric characters (not relevant for safety)
	+ (additional options; any number of each of the following options may be
Product	chosen)
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant
	for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = no options available
	qq (accessories mounted) = NA, NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)
	ss (marking) = 2 alphanumeric characters (not relevant for safety)
	Note: Some option codes may be restricted for certain model types.



	Dependent on option bb (output):				
	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz				
	A2 (FEL62): 1055Vdc, 350 mA				
	A3 (FEL64DC): 920Vdc, 1W; contacts	rated 253Vac/2A	A, 500VA (pf=1) / 250VA		
	(pf = 0.7), or $125 Vdc/0.2$	(pf = 0.7), or $125Vdc/0.2A$			
Electrical Rating	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts				
Electrical Rating	rated 253Vac/2A, 500VA	rated 253 Vac/2A, 500 VA (pf=1) / 250 VA (pf = 0.7), or			
	125Vdc/0.2A				
	A7 (FEL67): 9.512.5 Vdc, 100mW				
	A8 (FEL68): 8.2Vdc, NAMUR				
	BA (FEL60H): 10.535Vdc, 420mA				
	· · · · · · · · · · · · · · · · · · ·	GA (FEL60D): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6P, IP66/68				
	Temperature Code and	Extensions/L	Extensions/Limitations based on		
	Ambient Temperature Range	options:	options:		
	T6T1	nn=JL	min. temp = -50 °C		
Temp. code and ambient/process	$-40^{\circ}\text{C to} + 70^{\circ}\text{C}$	nn=JN	min. temp = -52 °C		
temperature		nn=JT	min. temp = -60°C		
r r m	Process temperature -60°C to +300°C;				
	refer to installation drawing for specific T-code and additional derating of				
	temperature ranges.				
	Dependent on option f (application):				
MWP/Process seal	D: 1450 psi (100 bar)				
	E: 1450 psi (100 bar)				
1v1 vv 1 / 1 10ccss scal	R: 580 psi (40 bar)				
	9: 1450 psi (100 bar)				
	Single Seal				
Installation Drawing	$XA02042F (bb \neq BA) \text{ or } XA03131F (bb = BA)$				

Conditions of Acceptability:

- The flameproof joints are not intended to be repaired.
- The Liquid Level Switches Liquiphant shall be installed and maintained such that hazards caused by electrostatic discharge are excluded.
- Limit switches with the following modules, to be supplied by a Class 2 or Limited Energy Source in accordance with CSA 61010-1-12: FEL42, FEL48, FEL62, FEL64DC, FEL67, FEL68, FEL60D and FEL60H.

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations
 CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous
 Locations - Certified to U.S. Standards

Class I, Division 1, Groups A, B, C and D T6...T1 Ex ia IIC T6...T1 Ga
Class I, Zone 0 AEx ia IIC T6...T1 Ga



Product	Liquiphant, series FTL41-CHbbcdefghiijjkkk + mmnnooqqrrss where bb (output) = A8 c (display; operation) = A d (housing; material) = A, B e (electrical conn.) = A, B, F, H, I, M f (application) = A g (surface finish) = A h (probe version) = 1, 2, 3 ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety) jj (process conn.) = 2 alphanumeric characters (not relevant for safety) kkk (process conn. size) = 3 alphanumeric characters (not relevant for safety) + (additional options; any number of each of the following options may be chosen) mm (services) = 2 alphanumeric characters (not relevant for safety) nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety) oo (additional approvals) = 2 alphanumeric characters (not relevant for safety) rr (accessories mounted) = 2 alphanumeric characters (not relevant for safety) rr (accessories enclosed) = PB; or 2 alphanumeric characters (not relevant for safety) ss (marking) = 2 alphanumeric characters (not relevant for safety) Note: Some option codes may be restricted for certain model types.			
Electrical Rating	Dependent on Output option, bb: I.S. connection parameters are defined in the below table A8 (FEL48): 8.2Vdc, NAMUR			
Enclosure Rating	Type 4X/6P, IP66/68			
Temp. code and	T6T3 with standard Ta of -40°C to + 70 °C; (0°C to + 70 °C, where option d = A)			
ambient/process	and process temperature -40°C to +150°C; refer to installation drawing for specific			
temperature	T-code and limitations of temperature ranges			
MWP/Process Seal	580 psi (40 bar) Single Seal			
Installation Drawing	Intrinsically safe when installed per XA01803F			

I.S. Connections Parameters for FTL41-CH:

Output code "bb"	A8 (FEL48)
	Ui = 16 V
Input V100	Ii = 52 mA
Input X100	Pi = 170 mW
(Power)	Ci = 30 nF
	$Li = N/A \mu H$



Product	Liquiphant, series FTL51B-CHbbcdefghiijjkkk + yyllmmnnooppqqrrzzss Liquiphant, series FTL63-CHbbcdefghiijjkkk + yyllmmnnooppqqrrzzss where bb (output) = A7, A8, BA, GA c (display; operation) = A, B, E, F d (housing; material) = A, B, C, M, N e (electrical conn.) = A, B, C, F, H, I, M f (application) = A, B, C g (surface finish) = A, Y (FTL51B)
Product	•
	· ·
	nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety)
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)
	ss (marking) = 2 alphanumeric characters (not relevant for safety)
	Note: Some option codes may be restricted for certain model types.
	Dependent on option bb (output): I.S. connection parameters are defined in the below table
	A7 (FEL67): 9.512.5 Vdc, 100mW
Electrical Rating	A8 (FEL68): 8.2Vdc, NAMUR
	BA (FEL60H): 10.530Vdc, 420mA
	GA (FEL60D): 2126Vdc, 150mW
Enclosure Rating	Type 4X/6P, IP66/68



	Order	Temperature Code and	Extensions/Limitations based on	
	code	Ambient Temperature Range	options:	
	d = A	T6T3	qq=NF, NG	max. temp = $+65$ °C
		0° C to + 70° C	qq=NG	T-code = $T4T3$
TD 1 1	d = B, C,	T6T3	nn=JL	min. temp = -50° C
Temp. code and ambient/process	M, N	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52 °C
temperature			bb=BA or	max. temp = $+65$ °C
temperature			qq=NF, NG	
			qq=NG	T-code = $T4T3$
	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.			
	Dependent	on option f (application):		
MWP/Process seal	A: 928 psi (64 bar)			
	B: 1450 psi (100 bar)			
	C: 362 psi (25 bar)			
	Single Seal			
Installation Drawing	Intrinsically safe when installed per XA01813F (bb \neq BA) or XA03123F (bb $=$ BA).			

	Liquiphant, series FTL62-CHbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) $= A7, A8, BA, GA$
	c (display; operation) = A, B, E, F
	d (housing; material) = A , B , C , M , N
	e (electrical conn.) = A, B, C, F, H, I, M
	f (application) = C, N, P, T g (surface finish) = N, P, Q, R, T, Y
	g (surface finish) = N, P, Q, R, T, Y
	h (probe version) $= 2, 3$
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (proc. conn. seal surf.) = 2 alphanumeric characters (not relevant for safety)
Product	kkk (proc. Conn. size) = 3 alphanumeric characters (not relevant for safety)
	+ (additional options; any number of each of the following options may be
	chosen)
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = MR, MS, M9
	qq (accessories mounted) = NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)



	1 (1:		1	1	
	ss (marking) = 2 alphanumeric characters (not relevant for safety)				
	Note: Some option codes may be restricted for certain model types.				
		on option bb (output): I.S. conne			
	below table		etion parameters	de defined in the	
TI (ID (A7 (FEL67)				
Electrical Rating	` .): 8.2Vdc, NAMUR			
	BA (FEL60	0H): 10.530Vdc, 420mA			
	GA (FEL60	DD): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6F	P, IP66/68			
	Order	Temperature Code and	Extensions/Li	Extensions/Limitations based on	
	code	Ambient Temperature Range	options:		
	d = A	T6T3	qq=NF, NG	max. temp = $+65$ °C	
		$0^{\circ}\text{C to} + 70^{\circ}\text{C}$	qq=NG	T-code = $T4T3$	
T1	d = B, C,	T6T3	nn=JL	min. temp = -50 °C	
Temp. code and ambient/process	M, N	$-40^{\circ}\text{C to} + 70^{\circ}\text{C}$	nn=JN	min. temp = -52 °C	
temperature			bb=BA or	max. temp = $+65$ °C	
temperature			qq=NF, NG		
			qq=NG	T-code = $T4T3$	
	Process temperature -50°C to +150°C;				
	refer to installation drawing for specific T-code and additional derating of				
	temperature ranges.				
	Dependent on option f (application):				
MWP/Process seal	C: 362 psi (25 bar)				
	N: 580 psi (40 bar)				
	P: 580 psi (40 bar)				
	T: 362 psi (25 bar)				
Installation Drawing	Single Seal	Intrinsically safe when installed per XA02037F (bb \neq BA) or XA03126F (bb = BA).			
mstanation Drawing	mumsically	saic when instance per AA020.	D/I (UU + DA)U	1 AA031201 (00 - BA).	

	Liquiphant, series FTL64-CHbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	= A7, A8, BA, GA
	c (display; operation) = A, B, E, F
	d (housing; material) = A, B, C, M, N
Product	e (electrical conn.) = A, B, C, F, H, I, M
Floduct	f (application) = $D, E, R, 9$
	g (surface finish) = A, R, Y
	h (probe version) = 1, 2
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (proc. conn. seal surf.) = 2 alphanumeric characters (not relevant for safety)
	kkk (proc. Conn. size) = 3 alphanumeric characters (not relevant for safety)



	Il (Applic. Package) = 2 alphanumeric mm (services) = 2 alphanumeric nn (test; Certificate) = 2 alphanumeric safety) oo (additional approvals) = 2 alphanum pp (sensor design) = no option avails qq (accessories mounted) = NF, NG, Orr (accessories enclosed) = PA, PB, Rezz (firmware vers.) = 2 alphanumeric	characters (not relevant characters (not relev	nt for safety) nt for safety) nt for safety) nt for llevant for safety) nt for safety)	
Electrical Rating	Dependent on option bb (output): I.S. connection below table A7 (FEL67): 9.512.5 Vdc, 100mW A8 (FEL68): 8.2Vdc, NAMUR BA (FEL60H): 10.530Vdc, 420mA GA (FEL60D): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6P, IP66/68			
Temp. code and ambient/process temperature	Order Code and Ambient Temperature Range d = A T6T1 0°C to + 70°C d = B, C, T6T1 M, N -40°C to + 70°C Process temperature -60°C to +300°C; refer to installation drawing for specific Temperature ranges.	qq=NG T-constant T-con	x. temp = +65 °C ode = T4T1 a. temp = -50°C a. temp = -52°C x. temp = +65 °C ode = T4T1	
MWP/Process seal	Dependent on option f (application): D: 1450 psi (100 bar) E: 1450 psi (100 bar) R: 580 psi (40 bar) 9: 1450 psi (100 bar) Single Seal			
Installation Drawing	Intrinsically safe when installed per XA020	Intrinsically safe when installed per XA02040F ($bb \neq BA$) or XA03129F ($bb = BA$).		



I.S. Connections Parameters for FTL51B-CH ..., FTL62-CH ..., FTL63-CH ... and FTL64-CH ...:

Output code "bb"	A7 (FEL67)	A8 (FEL68)	BA (FEL60H)	GA (FEL60D)
Input X100	Ui =14.6V	Ui = 16 V	Ui = 30 V	Ui = 27.6 V
(Power)	Ii =100mA	Ii = 52 mA	Ii = 300 mA	Ii = 93 mA
	Pi =633mW	Pi =170 mW	Pi = 1 W	Pi = 640 mW
	Ci =3nF	Ci = 30 nF	Ci = 10 nF	$Li = 3 \mu H$
	Li =0µH	$Li = N/A \mu H$	$Li = N/A \mu H$	Ci = 3 nF

Class I, Division 1, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III T6...T1 Ex ia IIC T6...T1 Ga
Class I, Zone 0, AEx ia IIC T6...T1 Ga

	Liquiphant, series FTL51B-CBbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	Liquiphant, series FTL63-CBbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) = A7, A8, BA, GA
	c (display; operation) = A, B, E, F
	d (housing; material) = B, C, M, N
	e (electrical conn.) = A, B, C, F, H, I
	f (application) = A, B, C
	g (surface finish) = A, Y (FTL51B)
	= A, B, C, D, E, F, Y (FTL63)
	h (probe version) $= 1, 2, 3$
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (proc. conn. seal surf.) = 2 alphanumeric characters (not relevant for safety)
Product	kkk (proc. Conn. size) = 3 alphanumeric characters (not relevant for safety)
Troduct	+ (additional options; any number of each of the following options may be
	chosen)
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = JL, JN; or 2 alphanumeric characters (not relevant for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = MR, MS, M9
	qq (accessories mounted) = NA, NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)
	ss (marking) = 2 alphanumeric characters (not relevant for safety)
	Note: Some option codes may be restricted for certain model types.
Electrical Rating	Dependent on option bb (output): I.S. connection parameters are defined in the
Bieculcai Kaulig	below table



	A7 (FEL67): 9.512.5 Vdc, 100mW			
	A8 (FEL68): 8.2Vdc, NAMUR			
	BA (FEL60H): 10.530Vdc, 420mA			
	GA (FEL60D): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6P, IP66/68			
	Temperature Code and Ambient Temperature Range	Extensions/Linoptions:	mitations based on	
	T6T3	nn=JL	min. temp = -50 °C	
Tomp and and	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52 °C	
Temp. code and ambient/process temperature		bb=BA or	max. temp = $+65$ °C	
		qq=NF, NG		
		qq=NG	T-code = $T4T3$	
	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.			
	Dependent on option f (application):			
MWP/Process seal	A: 928 psi (64 bar)			
	B: 1450 psi (100 bar)			
	C: 362 psi (25 bar)			
	Single Seal			
Installation Drawing	Intrinsically safe when installed per XA018	$813F \overline{(bb \neq BA)}$ or	$r XA0\overline{3123F (bb = BA)}$.	

	Liquiphant, series FTL62-CB bbcdefghiijjkkk + yyllmmnnooppqqrrzzss	
	where	
	bb (output) = A7, A8, BA, GA	
	c (display; operation) = A, B, E, F	
	d (housing; material) = B, C, M, N	
	e (electrical conn.) = A, B, C, F, H, I	
	f (application) = C , N , P , T	
	f (application) = C, N, P, T g (surface finish) = N, P, Q, R, T, Y h (probe version) = 2, 3	
	h (probe version) $= 2, 3$	
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)	
Product	jj (proc. conn. seal surf.) = 2 alphanumeric characters (not relevant for safety)	
	kkk (proc. Conn. size) = 3 alphanumeric characters (not relevant for safety)	
	+ (additional options; any number of each of the following options may be	
	chosen)	
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)	
	11 (Applic. Package) = 2 alphanumeric characters (not relevant for safety)	
	mm (services) = 2 alphanumeric characters (not relevant for safety)	
	nn (test; Certificate) = JL, JN; or 2 alphanumeric characters (not relevant for	
	safety)	
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)	
	pp (sensor design) = MR, MS, M9	



		R6, R9 ric characters (not a ric characters (not a	relevant for safety) relevant for safety)	
Electrical Rating Enclosure Rating	Dependent on option bb (output): I.S. conbelow table A7 (FEL67): 9.512.5 Vdc, 100mW A8 (FEL68): 8.2Vdc, NAMUR BA (FEL60H): 10.530Vdc, 420mA GA (FEL60D): 2126Vdc, 150mW Type 4X/6P, IP66/68	nnection parameter		
Eliciosure Ruting	Temperature Code and	Extensions/Limitations based on		
	Ambient Temperature Range options:			
	T6T3	nn=JL	min. temp = -50°C	
Temp. code and	-40° C to $+70^{\circ}$ C	nn=JN	min. temp = -52 °C	
ambient/process temperature		bb=BA or qq=NF, NG	max. temp = $+65$ °C	
temperature		qq=NG	T-code = $T4T3$	
	Process temperature -50°C to +150°C; refer to installation drawing for specific T-code and additional derating of temperature ranges.			
MWP/Process seal	Dependent on option f (application): C: 362 psi (25 bar) N: 580 psi (40 bar) P: 580 psi (40 bar) T: 362 psi (25 bar) Single Seal			
Installation Drawing	Intrinsically safe when installed per XA02037F (bb \neq BA) or XA03126F (bb = BA).			

	Liquiphant, series FTL64-CBbbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	= A7, A8, BA, GA
	c (display; operation) = A, B, E, F
	d (housing; material) = B, C, M, N
Product	e (electrical conn.) = A, B, C, F, H, I
Floduct	f (application) = $D, E, R, 9$
	g (surface finish) = A, R, Y
	h (probe version) = 1, 2
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (proc. conn. seal surf.) = 2 alphanumeric characters (not relevant for safety)
	kkk (proc. Conn. size) = 3 alphanumeric characters (not relevant for safety)



	Il (Applic. Package) = 2 alphanumer mm (services) = 2 alphanumer nn (test; Certificate) = JL, JN; or 2 a safety) oo (additional approvals) = 2 alphan pp (sensor design) = no option ava qq (accessories mounted) = NA, NF, rr (accessories enclosed) = PA, PB, zz (firmware vers.) = 2 alphanumer	ric characters (not a ric characters (not a ric characters (not a alphanumeric charac umeric characters (ailable NG, O9 R6, R9 ric characters (not a ric characters (not a	relevant for safety)
Electrical Rating	Dependent on option bb (output): I.S. combelow table A7 (FEL67): 9.512.5 Vdc, 100mW A8 (FEL68): 8.2Vdc, NAMUR BA (FEL60H): 10.530Vdc, 420mA GA (FEL60D): 2126Vdc, 150mW	nection parameters	
Enclosure Rating	Type 4X/6P, IP66/68		
Temp. code and ambient/process	Temperature Code and Ambient Temperature Range T6T1 -40°C to + 70°C	options: nn=JL nn=JN qq=NF, NG	min. temp = -50°C min. temp = -52°C max. temp = +65 °C
temperature		qq=NG	T-code = $T4T1$
	Process temperature -60°C to +300°C; refer to installation drawing for specific temperature ranges.		onal derating of
MWP/Process seal	Dependent on option f (application): D: 1450 psi (100 bar) E: 1450 psi (100 bar) R: 580 psi (40 bar) 9: 1450 psi (100 bar) Single Seal		
Installation Drawing	Intrinsically safe when installed per XA0	ՀՍ4ՍԲ (bb ≠ BA) o	or $XAU3129F$ (bb = BA).



I.S. Connections Parameters for FTL51B-CB..., FTL62-CB..., FTL63-CB... and FTL64-CB...:

Output code "bb"	A7 (FEL67)	A8 (FEL68)	BA (FEL60H)	GA (FEL60D)
Input X100	Ui =14.6V	Ui = 16 V	Ui = 30 V	Ui = 27.6 V
(Power)	Ii =100mA	Ii = 52 mA	Ii = 300 mA	Ii = 93 mA
	Pi =633mW	Pi =170 mW	Pi = 1 W	Pi = 640 mW
	Ci = 3nF	Ci = 30 nF	Ci = 10 nF	$Li = 3 \mu H$
	Li=0µH	$Li = N/A \mu H$	$Li = N/A \mu H$	Ci = 3 nF

Conditions of Acceptability:

- The Liquid Level Switches Liquiphant shall be installed and maintained such that hazards caused by electrostatic discharge are excluded.
- For Liquid Level Switches Liquiphant with an aluminium enclosure, when used as EPL Ga equipment, shall be installed in such a way that, even in the event of rare incidents, ignition sources due to impact and friction between the enclosure and iron or steel are excluded.

CLASS 2252 06 - PROCESS CONTROL EQUIPMENT
CLASS 2252 86 - PROCESS CONTROL EQUIPMENT (Certified to U.S. Standards)

	Liquiphant, series FTL41 -CAbbcdefghiijjkkk + mmnnooqqrrss		
	where		
	bb (output) = A2, A4, A8		
	c (display; operation) = A		
	d (housing; material) = A, B		
	e (electrical conn.) = A, B, F, G, H, I, M		
	f (application) = A		
	g (surface finish) = A		
	f (application) = A g (surface finish) = A h (probe version) = 1, 2, 3		
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)		
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)		
Product	kkk (process conn. size)= 3 alphanumeric characters (not relevant for safety)		
	+ (additional options; any number of each of the following options may be		
	chosen)		
	mm (services) = 2 alphanumeric characters (not relevant for safety)		
	nn (test; Certificate) = 2 alphanumeric characters (not relevant for safety)		
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)		
	qq (accessories mounted) = 2 alphanumeric characters (not relevant for safety)		
	rr (accessories enclosed) = PB; or 2 alphanumeric characters (not relevant for		
	safety)		
	ss (marking) = 2 alphanumeric characters (not relevant for safety)		
	Note: Some option codes may be restricted for certain model types.		
Electrical Rating	Dependent on Output option, bb:		



	A2 (FEL42): 1055Vdc, 350 mA; A4 (FEL44): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A A8 (FEL48): 8.2Vdc, NAMUR
Enclosure Rating	Type 4X/6P, IP66/68
Ambient/process	Standard Ta of -40° C to $+70^{\circ}$ C.; (0°C to $+70^{\circ}$ C, where option d = A)
temperature	Process temperature -40°C to +150°C;
MWP	580 psi (40 bar)

	Liquiphant, series FTL51B-CAbbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	Liquiphant, series FTL63-CA bbcdefghiijjkkk + yyllmmnnooppqqrrzzss		
	where		
	= A1, A2, A3, A4, A7, A8, BA, GA		
	c (display; operation) = A, B, E, F		
	d (housing; material) = A, B, C, M, N		
	e (electrical conn.) = A, B, C, F, G, H, I, M		
	f (application) = A, B, C		
	g (surface finish) = A, Y (FTL51B)		
	= A, B, C, D, E, F, Y (FTL63)		
	h (probe version) $= 1, 2, 3$		
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)		
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)		
	kkk (seal) = 3 alphanumeric characters (not relevant for safety)		
Product	+ (additional options; any number of each of the following options may be		
	chosen)		
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)		
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)		
	mm (services) = 2 alphanumeric characters (not relevant for safety)		
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant		
	for safety)		
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)		
	pp (sensor design) = MR, MS, M9		
	qq (accessories mounted) = NA, NF, NG, O9		
	rr (accessories enclosed) = PA, PB, R6, R9		
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)		
	ss (marking) = 2 alphanumeric characters (not relevant for safety)		
	2 infinitely contract (not total value for surety)		
	Note: Some option codes may be restricted for certain model types.		
	Dependent on option bb (output):		
	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz		
Electrical Rating	A2 (FEL62): 1055Vdc, 350 mA		
	A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) /		
	250VA (pf = 0.7), or 125Vdc/0.2A		
	200,11 (pr 0.77), 01 120 1 40, 0.211		



	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated	
	253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A	
	A7 (FEL67): 9.512.5 Vdc, 100mW	
	A8 (FEL68): 8.2Vdc, NAMUR	
	BA (FEL60H): 10.535Vdc, 420mA	
	GA (FEL60D): 2126Vdc, 150mW	
Enclosure Rating	Type 4X/6P, IP66/68	
	Standard Ta of -40° C to $+70^{\circ}$ C; -50° C to $+70^{\circ}$ C, where option nn=JL; -52° C to $+$	
Ambient/process	70° C, where option nn=JN; -60°C to + 70° C, where option nn=JT; 0°C to + 70° C,	
temperature	where option $d = A$	
_	Process temperature -50°C to +150°C.	
	Dependent on option f (application):	
MWD	A: 928 psi (64 bar)	
MWP	B: 1450 psi (100 bar)	
	C: 362 psi (25 bar)	

	Liquiphant, series FTL62-CA bbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) = A1, A2, A3, A4, A7, A8, BA, GA
	c (display; operation) = A , B , E , F
	d (housing; material) = A, B, C, M, N
	e (electrical conn.) = A, B, C, F, G, H, I, M
	f (application) $= C, N, P, T$
	$\begin{array}{ccc} g & \text{(surface finish)} & = \emptyset, Y, Y, Y \\ & & & & & & & & \\ \end{array}$
	h (probe version) $= 2, 3$
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)
	kkk (seal) = 3 alphanumeric characters (not relevant for safety)
	+ (additional options; any number of each of the following options may be
Product	chosen)
Troduct	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	11 (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant
	for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = MR, MS, M9
	qq (accessories mounted) = NA, NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9
	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)
	ss (marking) = 2 alphanumeric characters (not relevant for safety)
	Note: Some ontion codes may be restricted for cartain model types
Electrical Dating	Note: Some option codes may be restricted for certain model types.
Electrical Rating	Dependent on option bb (output):



	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz	
	A2 (FEL62): 1055Vdc, 350 mA	
	A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) /	
	250VA (pf = 0.7), or 125Vdc/0.2A	
	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated	
	253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A	
	A7 (FEL67): 9.512.5 Vdc, 100mW	
	A8 (FEL68): 8.2Vdc, NAMUR	
	BA (FEL60H): 10.535Vdc, 420mA	
	GA (FEL60D): 2126Vdc, 150mW	
Enclosure Rating	Type 4X/6P, IP66/68	
	Standard Ta of -40°C to + 70°C; -50°C to + 70°C, where option nn=JL; -52°C to +	
Ambient/process	70°C, where option nn=JN; -60 °C to $+70$ °C, where option nn=JT; 0 °C to $+70$ °C,	
temperature	where option $d = A$	
	Process temperature -50°C to +150°C.	
	Dependent on option f (application):	
	C: 362 psi (25 bar)	
MWP	N: 580 psi (40 bar)	
	P: 580 psi (40 bar)	
	T: 362 psi (25 bar)	

	Liquiphant, series FTL64-CA bbcdefghiijjkkk + yyllmmnnooppqqrrzzss
	where
	bb (output) = A1, A2, A3, A4, A7, A8, BA, GA
	c (display; operation) = A, B, E, F
	d (housing; material) = A, B, C, M, N
	e (electrical conn.) = A, B, C, F, G, H, I, M
	f (application) = D, E, R, 9
	g (surface finish) = A, R, Y h (probe version) = 1, 2
	h (probe version) = 1, 2
	ii (probe length; mat.) = 2 alphanumeric characters (not relevant for safety)
	jj (process conn.) = 2 alphanumeric characters (not relevant for safety)
Product	kkk (seal) = 3 alphanumeric characters (not relevant for safety)
	+ (additional options; any number of each of the following options may be
	chosen)
	yy (operating lang.) = 2 alphanumeric characters (not relevant for safety)
	ll (Applic. Package) = 2 alphanumeric characters (not relevant for safety)
	mm (services) = 2 alphanumeric characters (not relevant for safety)
	nn (test; Certificate) = JL, JN, JT; or 2 alphanumeric characters (not relevant
	for safety)
	oo (additional approvals) = 2 alphanumeric characters (not relevant for safety)
	pp (sensor design) = no options available
	qq (accessories mounted) = NA, NF, NG, O9
	rr (accessories enclosed) = PA, PB, R6, R9



	zz (firmware vers.) = 2 alphanumeric characters (not relevant for safety)			
	ss (marking) = 2 alphanumeric characters (not relevant for safety)			
	Note: Some option codes may be restricted for certain model types.			
	Dependent on option bb (output):			
	A1 (FEL61): 19253 Vac, 2VA, 50/60Hz			
	A2 (FEL62): 1055Vdc, 350 mA			
Electrical Rating	A3 (FEL64DC): 920Vdc, 1W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A			
	A4 (FEL64): 19253 Vac, 25VA, 50/60Hz or 1955Vdc, 1.3W; contacts rated 253Vac/2A, 500VA (pf=1) / 250VA (pf = 0.7), or 125Vdc/0.2A			
	A7 (FEL67): 9.512.5 Vdc, 100mW			
	A8 (FEL68): 8.2Vdc, NAMUR			
	BA (FEL60H): 10.535Vdc, 420mA			
	GA (FEL60D): 2126Vdc, 150mW			
Enclosure Rating	Type 4X/6P, IP66/68			
Ambient/process temperature	Standard Ta of -40°C to + 70°C; -50°C to + 70°C, where option nn=JL; -52°C to +			
	70°C, where option nn=JN; -60°C to + 70°C, where option nn=JT; 0°C to + 70°C,			
	where option $\hat{d} = A$. Process temperature -60°C to +300°C.			
MWP	Dependent on option f (application):			
	D: 1450 psi (100 bar)			
	E: 1450 psi (100 bar)			
	R: 580 psi (40 bar)			
	9: 1450 psi (100 bar)			

Conditions of Acceptability:

- 1. Limit switches with the following modules, to be supplied by a Class 2 or Limited Energy Source in accordance with CSA 61010-1-12: FEL48, FEL64DC, FEL67, FEL68, FEL60D and FEL60H.
- 2. Rated: Pollution Degree 2, Overvoltage Category I (limited energy modules, FEL42, FEL48, FEL62, FEL64DC, FEL67, FEL68, FEL60D and FEL60H) or Overvoltage Category II
- 3. Environmental Conditions: 3000 m max
- 4. Ambient temperature: -40°C for FTL41, FTL51B, FTL62 and FTL64 (optional for FTL51B, FTL62 and FTL64 -50°C/ -52°C/-60°C, only when using metallic enclosure and voltage is <35Vdc) to + 70°C max. Minimum ambient temperature for models with polymeric enclosure (option d = A) is limited to 0 °C. For devices with a temperature spacer, the following ambient temperatures apply across the entire process temperature range: A: +70 °C; B: +60 °C.

Low-temperature electronic inserts are marked LT (-50°C/-52°C/-60°C).

- Bluetooth module (non-Ex): -40 to +70 °C
- Bluetooth module (Ex ia): -40 to +65 °C
- LED module: -40 to +60 °C
- 5. Complete device may have optional LED module in addition to FEL62, FEL64, or FEL64DC insert. LED module is supplied at the same voltage as the insert; 6VA max for ac, 0.7W max for dc.
- 6. Complete device may have optional Bluetooth module in addition to FEL61, FEL62, FEL64, FEL64DC, FEL67, or FEL68 inserts. Bluetooth module is supplied either by battery (only FEL68) or at 30Vdc max., by the insert; 0.1A max.



APPLICABLE REQUIREMENTS

C22.2 No. 25-17	Enclosures for use in Class II, Division 1, Groups E, F, and G
	hazardous locations
C22.2 No. 30-M1986 (r2016)	Explosion-proof enclosures for use in Class I hazardous locations
C22.2 No. 30-20 ¹⁾	Explosion-proof Equipment
CSA C22.2 No. 94.2-15	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
CAN/CSA-C22.2 No. 60079-0:19	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-1:16	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
CAN/CSA-C22.2 No. 60079-11:14	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-26:16	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
CAN/CSA C22.2 No. 213-17	Non-incendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations
UL 61010-1-Third Edition	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
FM3600-2022	Approval Standard for Electrical Equipment for Use in Hazardous (Classified) Locations - General Requirements
FM3610-2021	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous (Classified) Locations
FM3615-2018	Approval Standard for Explosionproof Electrical Equipment General Requirements
FM3616-2022	Approval Standard for Dust-Ignitionproof Electrical Equipment General Requirements
UL 50E-15, Second Edition	Enclosures for Electrical Equipment, Environmental Considerations
UL 60079-0-2019, Seventh Edition	Explosive atmospheres – Part 0: Equipment – General requirements
UL 60079-1-2015, Seventh Edition	Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures "d"
UL 60079-11-2014, Sixth Edition	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety "i"
UL-60079-26: Third Edition	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
UL 121201-2017, Ninth Edition	Non-incendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations
ANSI/UL 122701- 2017, Third Edition	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

¹⁾ This standard is applicable for the new XP model FTL64 probe only



Notes:

Products certified under Class C225803, C225883 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca





Supplement to Certificate of Compliance

Certificate: 80022351 Master Contract: 151079

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80203728	2024-05-07	Update cCSAus certification report 80022351 for Liquiphant ES and HART series FTLxx device for minor corrections to the temperature ranges of metallic enclosure housing order code option "d" for FTLxx-CH model.
80173643	2023-08-14	Update cCSAus certification report 80022351 for Liquiphant ES and HART series FTLxx device for the following scope: Addition of Liquiphant model FTL63 Hygienic Version; Addition of new approval code CH applicable for CID1/Ex "ia" only; Variations to Liquiphant ES electronic inserts applicable for Foam detection feature; Revised safety instructions for IS to include temperature tables; Addition of metallic coating for Liquiphant model FTL62; Addition of coatings for Liquiphant model FTL64; Alternative M12 connector for Liquiphant ES; New nameplate drawings created for Liquiphant HART (L+P) devices
80157302	2023-06-07	Update cCSAus report 80022351 for Liquiphant ES series FTLxx device for the following scope: 1. Addition of Liquiphant HART 4-20mA I/O option applicable for models FTL51B, FTL62 & FTL64. This option is based on MA10 main board which was previously been certified under CSA project 80126806 2. Addition of new module FEL60H using SA10 electronics for sensor in combination with MA10 component module 3. Addition of L&P platform housing applicable for the new combination of MA10 module and SA10 electronic. The L&P platform enclosure housing has been previously certified under CSA project 80141544.
80144776	2023-01-13	Update cCSAus certification report 80022351 (last project 80086222) for Liquiphant ES series FTLxx device to consider a minor design change to the internal PTFE filling material which resulted in revised reference pressure values for FTL64 probe.
80086222	2021-09-29	Update of CSA report 80022351 for Liquiphant series FTLxx for the following changes: • Introduction of two new models FTL62 and FTL64



- Introduction of optional Bluetooth variant module VA-013-02 type
 VU121
- Introduction of new potting material SEMICOSIL920LT for electronic modules
- Addition of applicable std. CSA No. 30:20 applicable for new Liquiphant model FTL64 Probe only
- Update of applicable std. FM3615 and ANSI UL 122701 to latest edition. Included std. 3610:2018
- Minor revision to the components of FEL61 electronic module
- Update of applicable documents to introduce the above changes and editorial corrections

80022351 2019-12-02

Prime certification to issue cCSAus report for Liquiphant, types FTL41 and FTL51B with electronic inserts FEL4x and FEL6x with various combination of housings. The electrical ratings are applicable depending upon various electronic inserts, BT module and LED module.