



Member of the FM Global Group

FM Approvals
1151 Boston Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: 781 762 4300 F: 781-762-9375 www.fmaprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

HI HBB01-b, HI SBHF14-a, HI BBH06-b, HI SBH04-a, HI RCH01-d, HI RCH03-d, HI RCH04-d, HI SB02-a, HI SB01-f, HI SB05-a, HI SP1-b, HI SPA42-b, HI SP6-b, HI SPB1-g, HI SPA22-b, HI SPA60-g, HI SP3-b, HI PB-e. Load Cells.

HI STH01-a, HI STH06-b, HI S01-i. Force Transducers.

IS/I,II,III/ABCDEFG/T4 — 0594-0005; Entity

Entity Parameters: Vmax = 29.9Vdc, Imax = 450mA, Ci = 0, Li = 0.

a = Capacity: between 100kg and 10T; 200lb and 20klb; 1kN and 100kN.

b = Capacity: between 5kg and 500kg; 10lb and 1klb; 50N and 5kN.

d = Capacity: between 5 klb and 500 klb; 2 ton and 250 ton; 20 kN and 2.5 MN.

e = Capacity: any between 0.5 kg and 2500 kg; 1 lb and 5 klb; 5 N and 25 kN.

f = Capacity: between 200lb and 20klb; 100kg and 10000kg; 1kN and 100kN.

g = Capacity: between 20kg and 1000kg; 50lb and 2000lb; 200N and 10kN.

h = Capacity between 100kg and 100T; 200lb and 200klb; 1kN and 1MN.

i = Capacity between 100lbs and 10klbs.

Equipment Ratings:

Intrinsically Safe (Entity) for use in Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; Temperature Class T4 Ta = 40°C; when installed per Control Drawing 0594-0005 Hazardous (Classified) Locations.

FM Approved for:

Hardy Process Instruments
San Diego, California, USA



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This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	2010
Class 3810	1989
Including Supplement #1	1995

Original Project ID: 3046167

Approval Granted: August 7th, 2012

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
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FM Approvals LLC

Timothy Adam
Technical Team Manager

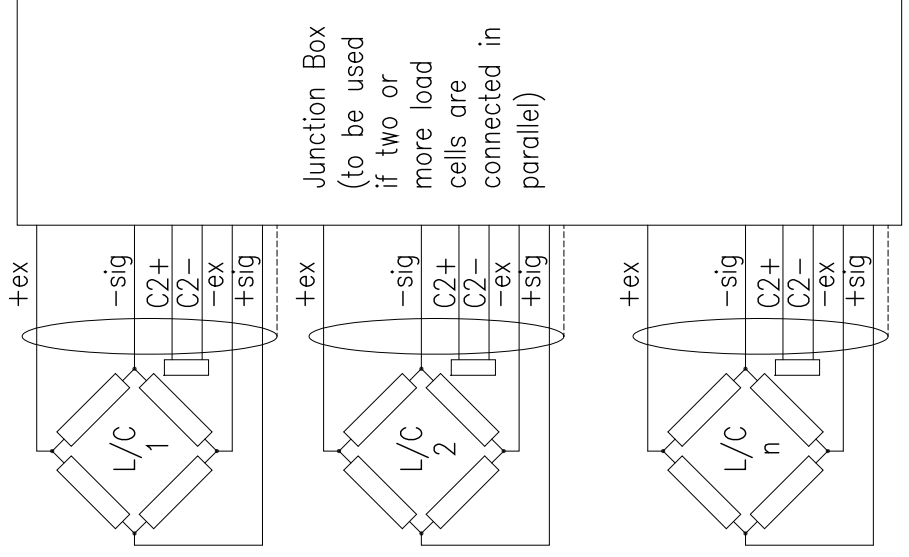
August 7th, 2012

Date

REV.	ECO/DDC	DESCRIPTION	DATE	DRAFT	CHECK	APV'D
A	----	RELEASED.	03-21-12	V.J.C.	L.E.G.	V.J.C.

HAZARDOUS AREA

APPROVED FOR CLASS I, II AND III, DIVISION 1,
GROUPS A, B, C, D, E, F AND G HAZARDOUS LOCATIONS.



$V_{max} = 29.9 \text{ V.}$
 $I_{max} = 0.450 \text{ A.}$
 $C_i = 0.$
 $L_i = 0.$

The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:

$$V_{max} \geq V_{oc}, V_t \text{ or } U_o;$$

$$I_{max} \geq I_{sc}, I_t \text{ or } I_o \text{ (Combined Isc, It or Io of ALL BARRIERS } \leq I_{max});$$

$$C_a \geq C_i + C_{cable};$$

$$L_a \geq L_i + L_{cable}.$$

NON-HAZARDOUS AREA

- NOTES:
1. MAX. CABLE LENGTH = 100 FT.
 2. n = MAX. NUMBER OF LOAD CELLS THAT CAN BE CONNECTED IN PARALLEL WITHOUT EXCEEDING MAX. TOTAL CAPACITANCE AND MAX. TOTAL INDUCTANCE.
 3. INSTALLATION SHOULD BE IN ACCORDANCE WITH ANSI/ISA RP12.06.01 "INSTALLATION OF INTRINSICALLY SAFE SYSTEM FOR HAZARDOUS (CLASSIFIED) LOCATIONS" AND THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70)
 4. APPARATUS CONNECTED TO THE SYSTEM SHALL NOT USE OR GENERATE VOLTAGE GREATER THAN 250 V.
 5. INSTALL INTRINSIC SAFE BARRIERS IN ACCORDANCE WITH BARRIER INSTRUCTIONS.
 6. SUBSTITUTION OF COMPONENTS MAY VOID FACTORY MUTUAL APPROVAL.
 7. THE ASSOCIATED APPARATUS MUST BE FM APPROVED
 8. NO REVISION TO DRAWING WITHOUT PRIOR FM APPROVAL

APPROVED LOAD CELLS:
 HI SBH04-a, HI SB05-a, HI BBH06-b, HI RCH01-d, HI RCH03-d, HI RCH04-d
 HI SP1-b, HI SPA60-g, HI SP6-b, HI SPA42-b, HI SPA22-b, HI SP3-b
 HI SB01-f, HI SB02-a, HI SBHF14-a, PBX-e, HI SPB1-g, HI HBB01-b
 HI SB07-f, HI SB08-f

APPROVED FORCE TRANSDUCERS:
 HI STH01-a, HI STH06-b, HI S01-f, HI S01-g

- a = Capacity any between 100 kg and 10 ton; 200 lb and 20 klb; 1 kN and 100 kN.
- b = Capacity any between 5 kg and 500 kg; 10 lb and 1 klb; 50 N and 5 kN.
- d = Capacity any between 5 klb and 500 klb; 2 ton and 250 ton, 20 kN and 2.5 MN.
- e = Capacity any between 0.5 kg and 2500 kg; 1 lb and 5 klb; 5 N and 25 kN.
- f = Capacity any between 200 lb and 20 klb; 100 kg and 10000 kg; 1kN and 100 kN.
- g = Capacity any between 20 kg and 1000 kg; 50 lb and 2000 lb; 200 N and 10 kN.
- h = Capacity any between 100 kg and 100 ton; 200 lb and 200 klb; 1 kN and 1 MN.



General Control Drawing, Entity Mode,
Hardy Load Sensors

ITEM	QTY	PART NUMBER	DESCRIPTION	COMMENTS
		0594-0005	General Control Drawing, Entity Mode, Hardy Load Sensors	
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN IN [MM]		CONTRACT NO.		
TOLERANCES ARE:		APPROVALS		
FRACTIONS: N/A		DRAWN	V. CHUIA	DATE
DECIMALS: .XX = N/A		CHECKED	L. GUIRIBA	01-31-12
ANGLES: ±0°, 30'		APPROVED	V. CHUIA	03-21-12
MATERIAL		ISSUED	V. CHUIA	03-21-12
FINISH		PRODUCTION	V. CHUIA	03-21-12
DO NOT SCALE DRAWING		DATE		
		SIZE	FSCM	DRAWING NO.
		D	21316	0594-0005
		FILE NAME:	594005A1.DWG	SCALE: NONE
				SHEET 1 OF 1