

# INTRINSICALLY SAFE LOW PROFILE LOAD CELLS FOR HAZARDOUS LOCATIONS

## STANDARD AND METRIC MODELS

**Tension or Compression**  
**50 to 750,000 lb Capacities**  
**25 to 10,000 kgf Metric Models**

**Please Note:**  
**Not for export,**  
**USA and Canada only**

### LC412/LCM412-IS Series



Standard

- ✓ FM Intrinsically Safe Rating Standard
- ✓ 4 to 20 mA Output
- ✓ 5-Point NIST Traceable Calibration Included
- ✓ 0.25% Interchangeability
- ✓ All Stainless Steel Construction for Harsh Industrial Environments
- ✓ Heavy-Duty Industrial Design
- ✓ Low Profile for Easy Installations



LC412-IS, twist-lock termination shown.



The LC412-IS Series intrinsically safe load cells are FM rated intrinsically safe for use in hazardous locations. They are available with 5 different electrical terminations. Three connector options and 2 cable options, one of which is a submersible waterproof cable. Standard models have an amplified 4 to 20 mA output for uni-directional applications and a 4-12-20 mA output for bi-directional applications.

### SPECIFICATIONS

**Excitation mV/V Output:** 10-28 Vdc  
**Output (One Direction C2):**  
 4 to 20 mA,  $\pm 10\%$  adjustable  
**Output (Two Directions BC2):**  
 4-12-20 mA,  $\pm 10\%$  adjustable  
**Nonlinearity (%F.S.O.):** 0.10  
**Hysteresis (%F.S.O.):** 0.10  
**Repeatability (%F.S.O.):** 0.05  
**Zero Balance:** 4 mA, 10%, -2% adjustable

**Operating Temperature:**  
-40 to 75°C (-40 to 167°F)

**Compensated Temperature:**  
16 to 71°C (60 to 160°F)

#### Temperature Effects:

**Zero (%FSO/°F):**  
 $\pm 0.005 (\pm 0.009\% \text{FSO}/^\circ\text{C})$   
**Span (%Reading/°F):**  
 $\pm 0.005 (\pm 0.009\% \text{Reading}/^\circ\text{C})$

**Safe Overload (% of Capacity):** 150

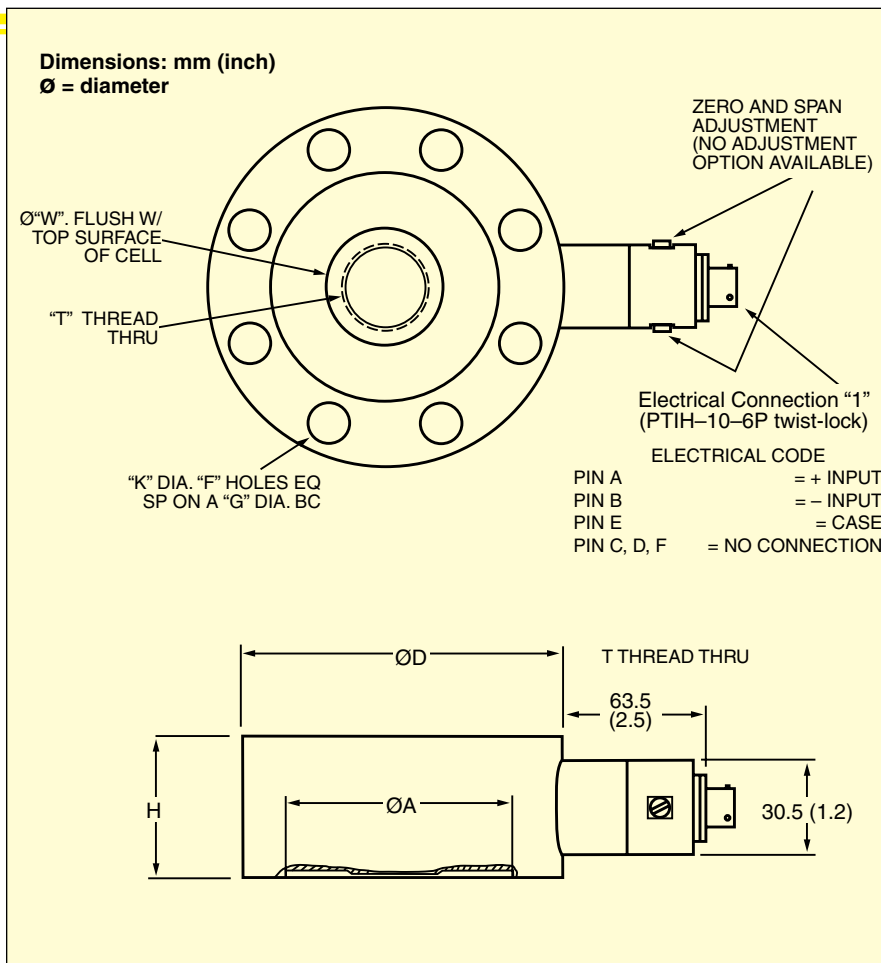
**Ultimate Overload (% of Capacity):** 300

**Material:** Stainless steel

### AGENCY APPROVALS

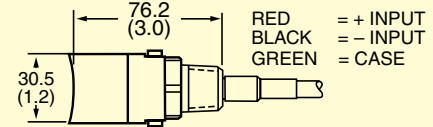
TYPE	AGENCY	APPROVAL LISTINGS
Intrinsically Safe (US and Canada)	FM	Hazardous (Classified) Location, Rated Intrinsically Safe, Securite Intrinsique Class I, II, III, Division 1 Gr A, B, C, D, E, F, G Class I, Zone 0 Aex ia IIc (US), Class I, Zone 0 Ex ia IIC (Canada), T4, Ta = -40 to 75°C
Non-Incendive	FM	FM Hazardous (Classified) Location, Rated Non-Incendive Class I Division 2 Groups A, B, C, D (US and Canada) T4, Ta = -40 to 75°C, Conduit electrical connections only

# INTRINSICALLY SAFE LOAD CELLS

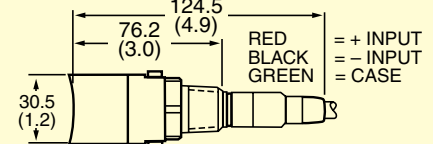


## ELECTRICAL CONNECTION WITH WIRE/PIN CODE

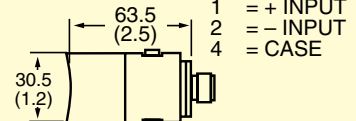
### 0 (CABLE/CONDUIT)



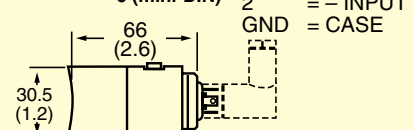
### GW (CABLE BACKEND WITH 1/2 CONDUIT WATERPROOF)



### 5 (M12)



### 6 (mini-DIN)



Mating DIN connector not included

CAPACITY (lbs)	D	H	F	G	K	T	W	A
<b>STANDARD MODEL (LC412)</b>								
50 to 300	76 (3.00)	38 (1.50)	8	57 (2.25)	6.7 (0.266)	$\frac{3}{8}$ -24UNF-2B	14.2 (0.56)	45.2 (1.78)
500 to 3000	89 (3.50)	38 (1.50)	8	73 (2.875)	6.7 (0.266)	$\frac{1}{2}$ -20UNF-2B	22.1 (0.87)	63.0 (2.48)
5000 to 10,000	95 (3.75)	38 (1.50)	8	83 (3.25)	6.7 (0.266)	$\frac{3}{4}$ -16UNF-2B	28.7 (1.13)	66.8 (2.63)
15,000 to 25,000	102 (4.00)	51 (2.00)	8	89 (3.50)	10.3 (0.406)	1-14UNF-2B	33 (1.30)	74.9 (2.95)
30,000 to 50,000	178 (7.00)	76 (3.00)	8	143 (5.625)	13.4 (0.531)	1 $\frac{1}{2}$ -12UN-2B	77.5 (3.05)	113.0 (4.45)
75,000	203 (8.00)	89 (3.50)	8	171 (6.75)	16.7 (0.656)	1 $\frac{3}{4}$ -12UN-2B	104.9 (4.13)	140.7 (5.54)
100,000	242 (9.50)	102 (4.00)	8	203 (8.00)	19.8 (0.781)	2-12UN-2B	110.2 (4.34)	169.2 (6.66)
150,000 to 200,000	279 (11.00)	102 (4.00)	12	235 (9.25)	26 (1.030)	2 $\frac{1}{2}$ -12UN-2B	124.5 (4.90)	183.4 (7.22)
300,000 to 400,000	279 (11.00)	102 (4.00)	12	235 (9.25)	26 (1.030)	3-12UN-2B	124.5 (4.90)	183.4 (7.22)
440,000 to 500,000	305 (12.00)	102 (4.00)	12	280 (10.25)	29 (1.156)	3 $\frac{1}{2}$ -8UN-2B	137.2 (5.4)	196.1 (7.72)
600,000 to 750,000	330 (13.00)	114 (4.50)	12	279 (11.00)	33 (1.281)	4-8UN-2B	149.9 (5.9)	208.8 (8.22)
<b>METRIC MODEL (LCM412)</b>								
25 to 100	76 (3.00)	38 (1.50)	8	57 (2.25)	6.7 (0.266)	M10 x 1.5-6G	14.2 (.56)	45.2 (1.78)
250 to 1500	89 (3.50)	38 (1.50)	8	73 (2.875)	6.7 (0.266)	M12 x 1.75-6G	22.1 (.87)	63 (2.48)
2500 to 5000	95 (3.75)	38 (1.50)	8	83 (3.25)	6.7 (0.266)	M20 x 1.5-6G	28.7 (1.13)	66.8 (2.63)
7500 to 10,000	102 (4.00)	50 (2.00)	8	89 (3.50)	10.3 (0.406)	M24 x 2.0-6G	33.0 (1.30)	74.9 (2.95)

# INTRINSICALLY SAFE – STANDARD AND METRIC MODELS

To Order				
CAPACITY		MODEL NO.	COMPATIBLE METERS	TENSION BASE PLATE
lb	kgf			MODEL NO.
INTRINSICALLY SAFE STANDARD MODELS				
50	23	LC412-50 [*] [**] [***]	DP41-E, 6-digit display	LC412-TP225
100	45	LC412-100 [*] [**] [***]	DP41-E, 6-digit display	LC412-TP225
250	114	LC412-250 [*] [**] [***]	DP41-E, 6-digit display	LC412-TP225
500	227	LC412-500 [*] [**] [***]	DP41-E, 6-digit display	LC412-TP288
1000	455	LC412-1K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP288
2000	909	LC412-2K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP288
3000	1361	LC412-3K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP288
5000	2269	LC412-5K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP325
10,000	4537	LC412-10K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP325
15,000	6806	LC412-15K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP350
20,000	9074	LC412-20K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP350
25,000	11,343	LC412-25K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP350
50,000	22,686	LC412-50K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP563
75,000	34,029	LC412-75K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP675
100,000	45,372	LC412-100K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP800
200,000	90,744	LC412-200K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP925
300,000	136,116	LC412-300K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP925-3
400,000	181,488	LC412-400K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP925-3
500,000	226,860	LC412-500K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP1025
750,000	340,290	LC412-750K [*] [**] [***]	DP41-E, 6-digit display	LC412-TP1100

All models come complete with 5-point NIST traceable calibration.

**Note:** Ranges over 300,000 lb are calibrated at 300,000 lb. Full calibration is available by adding a "ZXX" at the end of the part number.

**Ordering Example:** LC412-100K0BC2IS, 100,000 lb capacity, bidirectional, with PVC cable and FMIS approvals.

CAPACITY		MODEL NO.	COMPATIBLE METERS	TENSION BASE PLATE
kgf	lb			MODEL NO.
INTRINSICALLY SAFE METRIC MODELS				
25	55	LCM412-25 [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP225
50	110	LCM412-50 [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP225
100	220	LCM412-100 [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP225
250	551	LCM412-250 [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP288
500	1102	LCM412-500 [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP288
1000	2205	LCM412-1K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP288
1500	3307	LCM412-1.5K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP288
2500	5512	LCM412-2.5K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP325
5000	11,023	LCM412-5K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP325
7500	16,535	LCM412-7.5K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP350
10,000	22,046	LCM412-10K [*] [**] [***]	DP41-E, 6-digit display	LCM412-TP350

All models come complete with 5-point NIST traceable calibration.

**Ordering Example:** LCM412-5K1C2IS, 5000 kg capacity load cell.

## [\*] ELECTRICAL TERMINATIONS

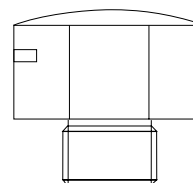
TERMINATIONS	SUFFIX
2 m (6.6') PVC cable with ½ NPT conduit†	0
PTIH-10-6P twist-lock mating connector PT06F10-6S (sold separately)	1
M12 4-pin	5
mini-DIN (mating DIN connector not included)	6
3 m (10') submersible cable with ½ NPT conduit	GW

† Other cable lengths are available; please contact Factors for price and availability

Any cable or connector must meet the requirements of the environment where it is being installed. The safety engineer should specify the cables and connectors.

## [\*\*] OUTPUT OPTIONS

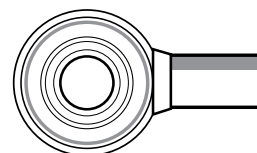
INTRINSICALLY SAFE AMPLIFIERS	SUFFIX
FM Intrinsically Safe 4 to 20 mA Output (calibrated 0 to full scale in compression)	C2IS
FM Intrinsically Safe 4-12-20 mA Output [calibrated (-)full scale to (+)full scale]	BC2IS



Load Buttons  
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## [\*\*\*] FINAL SUFFIX OPTIONS

DESCRIPTION	SUFFIX
Potentiometers Standard (No Suffix)	
No Potentiometers	NP



Rod Ends  
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### STANDARD LOAD BUTTONS

MODEL	THREAD
LBC-038	⅜-24
LBC-012	½-20
LBC-034	¾-16
LBC-100	1-14
LBC-112	1½-12
LBC-200-12	2-12

### STANDARD MALE ROD ENDS

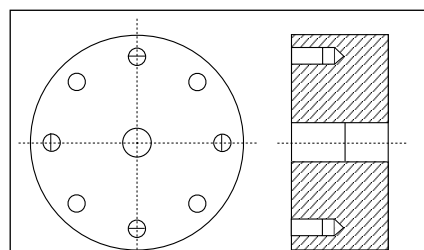
MODEL NO.	THREAD
REC-038M	⅜-24
REC-012M	½-20
REC-034M	¾-16
REC-100M	1-14
REC-112M	1½-12

### METRIC LOAD BUTTONS

MODEL NO.	THREAD
MLBC-M10	M10 x 1.5
MLBC-M12	M12 x 1.75
MLBC-M20	M20 x 1.5
MLBC-M24	M24 x 2.0

### METRIC MALE ROD ENDS

MODEL NO.	THREAD
MREC-M10M	M10 x 1.5
MREC-M12M	M12 x 1.75
MREC-M20M	M20 x 1.5
MREC-M24M	M24 x 2.0



Tension Plates  
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Visit us online for load button and rod end dimensions