

Flame Proof Worm Limit Switch (IIA,IIB)



Introduction

Flame-proof Worm Drive Limit Switch FLP-FG2 is used to trip motor supply when the moving loads reach the extreme end positions of working zone. These are suitable for use in explosive gases, as specified zone 1 Gas group IIA, IIB, as per IS/IEC 60079-0-2007 & IS/IEC 60079-1-2007.

Operation:

A two (or more) Contact elements are operated by respective rotating cams, suitably adjusted on a cam-shaft. Which rotates with fixed speed ratio of the drive motor shaft. The cams can be step lessly positioned so that they trip motor supply and stop the motion at the set point of travel.

The FLP-FG2 limit switch with IP-54 degree of protection are available in desired NO/NC contacts combinations as specified gear ratio.

Mechanical Data

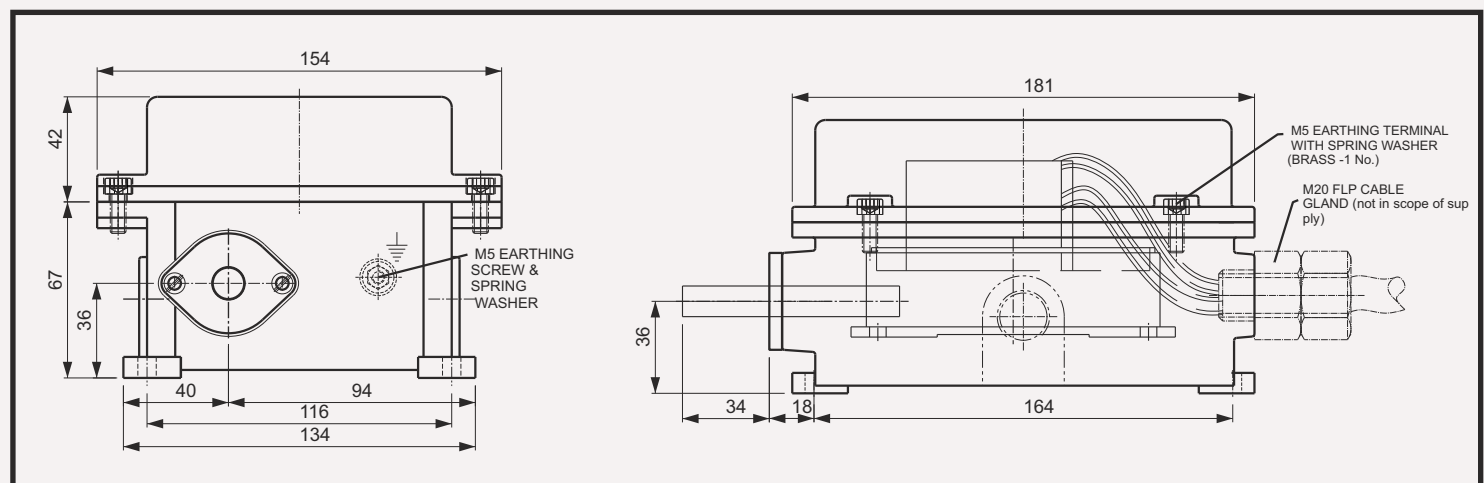
Ratios	Effective Rotations	Useful Rotations	2 Contacts Model	4 Contacts Model
25:1	25	20	FLP-FG-25P2	FLP-FG-25P4
50:1	50	40	FLP-FG-50P2	FLP-FG-50P4
100:1	100	80	FLP-FG-100P2	FLP-FG-100P4
200:1	200	160	FLP-FG-200P2	FLP-FG-200P4
400:1	400	320	FLP-FG-400P2	FLP-FG-400P4

Flame Proof enclosure constructed in accordance with provisions as specified in IS/IEC 60079-0-2007 & IS/IEC 60079-1-2007



Technical Data

Explosive Atmosphere Part I Equipment Protection by Flameproof Enclosures "d"	
Product	Worm Drive Limit Switch
Zone	Zone 1, Gas Groups I, IIA & IIB
Model	FLP-FG2
Voltage	Upto 500 VAC
Phase/Frequency	10 A AC max
Ambient Temperature	-20°C + 40°C
Enclosure	Aluminium Alloy LM 4
Ingress Protection	IP-54 (IS/IEC 60529:2001)
Cable Entry	M 20 Single
IS -	IS/IEC 60079-0-2007 IS/IEC 60079-1-2007 IS/IEC 60529 : 2001
BIS License No.	CM/L-7200042490 as per IS/IEC 60079-1-2007
Certificate No.	KLPL/Ex/15-112 Date: 27-11-2015 Karandikar Laboratories Pvt.Ltd



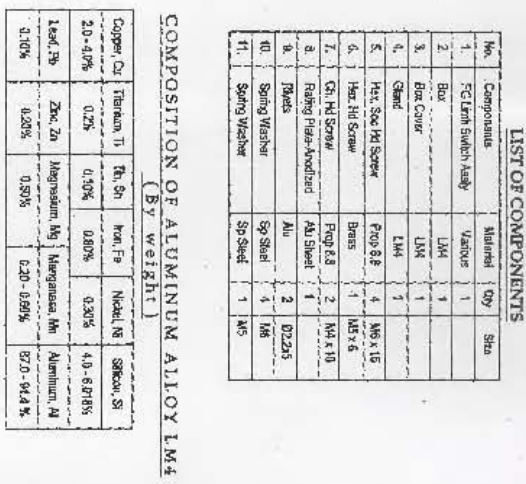
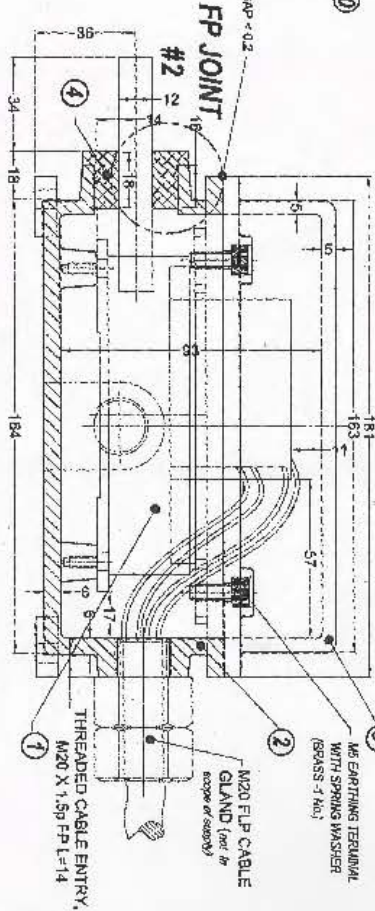
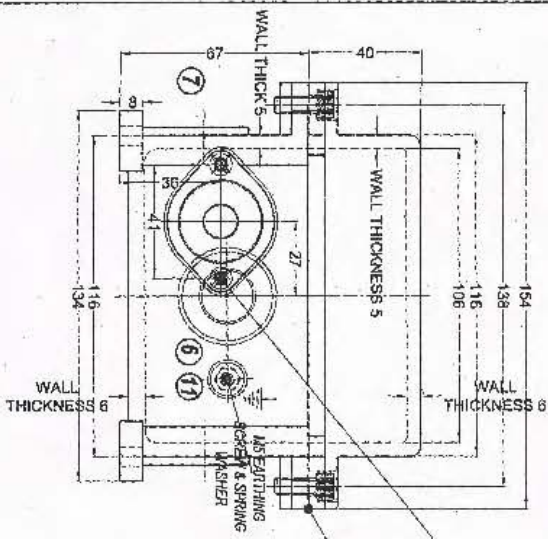
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Oct, 2017



1. All dimensions in the drawing are in millimeters.
2. Flange-plate heights and gage are in accordance with IS : IEC 60079-(2)(2007).
3. General constructional details, selection of materials, processes, tolerances, finishes, etc., shall conform to the latest editions of the following standards:
 - a. Code of Practice, Ind. Eng. Mater. etc. in accordance with IS : IEC 60079-(2)(2007).
 - b. Flange hardware like Screws, bolts etc. are of Property Class ("C", 800 MPa) as per IS: 2063 - 1 & 2 (1983) and size of Metric size of medium bolt (ISO - 260) and clearance holes are as per ISO-273 and of Light & Fits are by / 241 ISO - 268 Part II.
 - c. All hardware components are Aluminium clad plated.
 - d. Name plate is made of Aluminium sheet and is Anodized.
4. It is fixed with nominal diameter flange.
5. U.L.M. fits and tolerances are as per IS 919 - 1955
6. Metal thickness of metal walls and blind holes is at least 3 mm.
7. Surface finish of casted surfaces of flange is given is better than $Ra = 1.6$.
8. Normal working range of temperature is $+20^{\circ}$ to $+40^{\circ}$ C.
9. The medium surface Temperature will not exceed $+105^{\circ}$ C. (Class 74)

VOLUME STATEMENT (COMPUTED)	
1 GROSS FREE VOLUME	1510 CC
2 MAX. FREE VOLUME	1000 C.C.

TYPE	FLP PG 2
GAS GROUP	IIA, IIB
MAX VOLTAGE INPUT 12	500 V AC Max
MAX CURRENT INPUT 11	10 Amps
OPERATING MECHANISM	WORM AND WORM GEAR
RATIO	25 / 50 / 100 / 200 / 400 : 1 (Any one)
HAZARDOUS AREAS	ZONE 1, GAS GROUPS, IIA, IIB
DEGREE OF PROTECTION	IP 54 A9 PER IEC-60529:2001
CABLE ENTRY	SINGLE, A4 per IEC-60439, M 20 x 1.5, P, 144 - ALL ALLOY
MATERIAL OF ENCLOSURE	Extruded
EARTHING TERMINALS	Earthing Size - M5 x 10 with spring washer
EARTHING CONDUCTOR SIZE	1) Akradent 2.5 sq. mm, Internal Earthing Strip - M5 x 10 with spring washer

MECHANICAL PROPERTIES	
TENSILE STRENGTH	140 MPa
ELONGATION	2 %

No.	Component	Material	Qty	Size
1.	SC Form Switch Assy	LM4	1	
2.	Box	LM4	1	
3.	Box Cover	LM4	1	
4.	Stand	LM4	1	
5.	Hot Seal Hot Sower	PFO-2E	4	M6 x 16
6.	Hot Seal Hot Sower	Boss	1	M6 x 6
7.	Oil Hot Sower	Pop-R-8	2	M4 x 10
8.	Rating Plate-wooded	Alu Sheet	1	
9.	Plates	Alu	3	D22x5
10.	Spring Washer	Sp Steel	4	M6
11.	Spring Washer	Sp Steel	1	M6

Copper, Cu	Vanadium, V	Tin, Sn	Iron, Fe	Nickel, Ni	Silicon, Si
2.0-4.0%	0.2%	0.50%	0.80%	0.30%	4.0-6.08%
Lead, Pb	Zinc, Zn	Magnesium, Mg	Manganese, Mn	Aluminum, Al	
0.10%	0.20%	0.50%	0.20-0.50%	92.0-94.4%	

COMPOSITION OF ALUMINUM ALLOY LM4
(By weight)

FOR AND ON BEHALF OF
SPEED-O-CONTROL P. LTD.
Mumbai - 400072

Dated: 11/1

APPROVED DRAWINGS
KARANDIKAR LABORATORIES PVT. LTD.
CERTIFICATE NO.: KLP/EX/15-162
DATE 07TH November 2015

Dated: 11/1

Issue Date	Material
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Reference: IS/IEC 60079-1:2007, IS/IEC 60079-0:2007

20 MAY 2013	VARIOUS
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Assembly No.:	Pattern No.
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Design	Karaka
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Customer:

Drawn	Red
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FLAME PROOF

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ROTARY LIMIT SWITCH

[illegible]

ANDREAS - KIDILAKOS, NIKOLAOS

FLP FG 2-01
