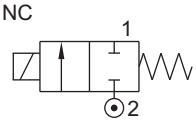
2/2 DIRECT ACTING NORMALLY CLOSED SOLENOID VALVE

TYPE	PRESSURE

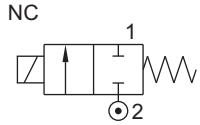
TYPE	PRESSURE
20126V01	0 - 225 bar

NC



TYPE	PRESSURE
20101	0 - 63 bar
20126	0 - 110 bar

NC

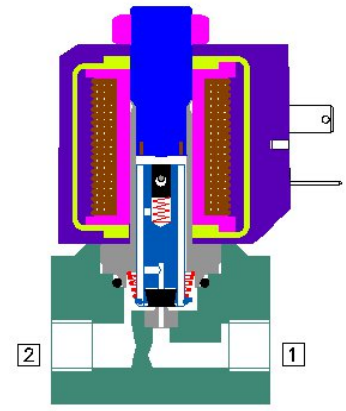


FEATURES

- Bubble tight shut off
- Suitable for vacuum up to 10^{-6} torr
- Vibration resistance up to 9g
- Mounts in any position
- Suitable for high speed cycling up to 1000 cycles/ min.
- Life >10 million cycles
- Manual override optionally provided

WETTED PARTS

Code	※	B2	B5
Body	Anodized Aluminium	Brass	SS 316
Internals	Aluminium	Brass	SS 316
Guide Assembly	SS 304		
Shadow-Ring	Copper/ Silver/ None		
Plunger, Insert	SS 430		
Spring	SS 302		
Seat, Seals	NBR, Viton, EPDM, PTFE		



※ Do not specify code if opted for. Refer Page # 22 for Value of ※

AMBIENT AND FLUID TEMPERATURE

-30 °C to 75 °C

SPECIAL VERSION AND SUFFIX

Suffix : (Valve) OX, AM
Special version : (Solenoid) CO, FR, SS, LC, III, TM

MEDIA

Air, Inert Gases, Water, Vacuum, Free Flowing Liquid, Oil, Diesel, Kerosene, LPG, Furnace Oil

APPLICATION

Dispensing, Analyzer, Drain

PORT CONNECTION

INLET	OUTLET
2	1

SPARES

(Refer page 25 for ordering code)

SPARE KIT	CODE
Seal Kit : Oring Set and Plunger Assembly	98
Repair Kit : Oring Set, Plunger Assembly, Springs, Manual Override, Guide assembly	99
Solenoid Kit : Solenoid, Gasket and Nut	34

APPROVAL

(* applied for)

Approval	Nema 4X	IP67	Ex d IIC T4 or T5 or T6 IP66	Ex ia IIC T6 IP67	DGMS	CCOE
ISI		✓	✓	✓	✓	✓
CE		✓	✓	✓		
UL	✓		*			
CCVCEPEL			✓	✓		
EAC			✓	✓		
IECEx			✓	✓		

Contact Rotex for
- Any other ambient, fluid temperature, media and application
- UL listed, cULus Listed general purpose Valve

20123 & 20124 Model is discontinued Offer Alterenate Model 20172V02LP
Contact Rotex if must to Offer Specific Model

2/2 DIRECT ACTING NORMALLY CLOSED SOLENOID VALVE

SPECIFICATION

PORT CONNECTION			PRE-SSURE bar		NW ORIFICE (mm)	FLOW FACTOR kv (LPM OF WATER @ 1 bar ΔP)	VALVE TYPE	PILOT PRESSURE	BODY MATERIAL AND INTERNALS				SEALS					MANUAL OVERRIDE			SOLENOID ENCLOSURE						SUFFIX		POWER VA			CONSTRUCTION REFERENCE NUMBER
																					WEATHER PROOF				EXPLOSION PROOF								
SIZE	BSP(F)	NPT(F)	MINIMUM	MAXIMUM					ALUMINIUM	ALUMINIUM + SS	BRASS (STD. PORT NPT)	SS 316/ CF8 (STD. PORT NPT)	NBR	Viton	EPDM	HYTREL	PTFE	NIL	STAYPUT CUM MOMENTARY	MOMENTARY	FLYING LEAD	PLUG IN, IP67	SQ. PLUG IN, IP67	TERMINAL BOX IP67	EXPLOSION PROOF IIC, IP67	LARGE ENCLOSURE	SOLENOID SIZE	OXYGEN	AMONIA	AC INRUSH	AC HOLDING	DC	
2/2 NORMALLY CLOSED																																
1/2”	4G	4R	0	2.5	5	9	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	4	4	7	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	6	3.5	5	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	6	5	9	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F		25	T	E	III	18	✓	✓	13	13	13	C
			0	8	3	4	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	10	4	7	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F		25	T	E		18	✓	✓	13	13	13	C
3/8”	3G	3R	0	12	2.5	3.5	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	15	2.2	2.5	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	15	3.5	5	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F		25	T	E		18	✓	✓	13	13	13	C
1/4”	2G	2R	0	20	1.8	1.8	20101		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	25	1.6	1.4	20101		※		B2	B5	※	S2	S1		S8	※	M12	M5	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	25	3	4	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F		25	T	E		18	✓	✓	13	13	13	C
1/8”	1G	1R	0	32	2.5	3.5	20126		※		B2	B5	※	S2	S1		S8	※	M12	M5	F		25	T	E		18	✓	✓	13	13	13	C
			0	40	2.2	2.5	20126		※		B2	B5	※	S2	S1		S8	※	M12	M5	F		25	T	E		18	✓	✓	13	13	13	C
			0	50	1.8	1.8	20126		※		B2	B5	※	S2	S1		S8	※	M11	M4	F		25	T	E		18	✓	✓	13	13	13	C
			0	60	1.2	0.7	20101		※		B2	B5					※	※	M11	M4	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	63	1.6	1.4	20126		※		B2	B5					※	※	M11	M4	F		25	T	E		18	✓	✓	13	13	13	C
			0	100	1.2	0.7	3352V01		※		B2	B5					S4	※	M11	M4	F		25	T	E		18	✓	✓	13	13	13	C
			0	150	0.8	0.5	20101		※		B2	B5					※	※	M11	M4	F	22	25	T	E	III	14	✓	✓	18	12	8	A
			0	225	0.8	0.5	20126V01				B2	B5					※	※	M11	M4	F		25	T	E		18	✓	✓	13	13	13	C
3/8”	3G	3R	0	4	6	12	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F		25	T	E		18	✓	✓	13	13	13	D
1/2”	4G	4R																														
			0	6	5	9	20126		※		B2	B5	※	S2	S1		S8	※	M6	M8	F	22	25	T	E		18	✓	✓	13	13	13	D

SOLENOID 14							
Cable Entry	T	E					
		Ex d			Ex ia	Ex emb	
M20 x 1.5	19	17MS	39	87MS	66MS	58MS	58LTMS
M25 x 1.5		17		87	66	58	58LT
1/2” NPT	16	17NS	37	87NS	66NS	58NS	58LTNS

SOLENOID 18						
Cable Entry	T	E				
		Ex d			Ex emb	
M20 x 1.5	19	17MS	39	87MS	58MS	58LTMS
M25 x 1.5		17		87	58	58LT
1/2” NPT	16	17NS	37	87NS	58NS	58LTNS

	F
Flying lead IP54	※
Flying lead IP67	01

Code	Construction Reference
A	1, 3, 5, 7
B	2, 4, 6, 8
C	9, 13
D	10, 14

※ = Do not specify when opted for. Refer Page # 22 for Value of ※
✓= Options available

20123 & 20124 Model is discontinued Offer Alterenate Model 20172V02LP
Contact Rotex if must to Offer Specific Model

ORDERING CODE AND EXAMPLE

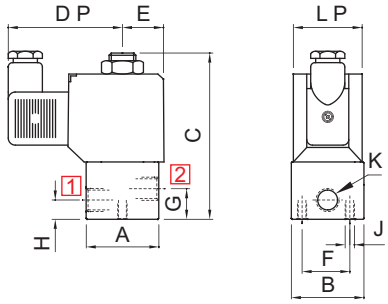
VALVE + SOLENOID

TYPE – SUFFIX – ORIFICE – PORT CONNECTION – BODY AND INTERNALS – MANUAL OVERRIDE – SEAL + SIZE – VOLTAGE – CURRENT – SOLENOID ENCLOSURE – APPROVAL – INSULATION – SPECIAL VERSION

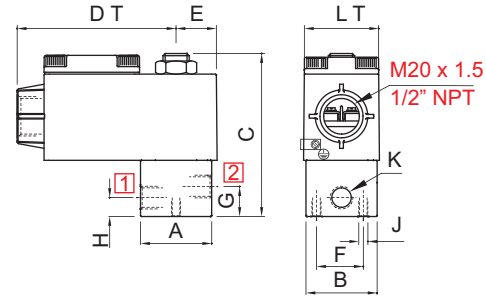
eg.: 20126-4-2G+220V 50Hz-25; 20101-2.2-2R-B5-M6-S2+24V DC-37-01-H-CO-III

DIMENSIONS

All Dimensions are in mm

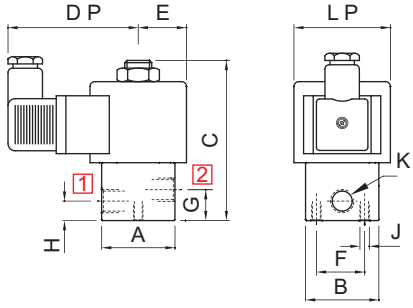


PLUG IN SOLENOID TYPE 22

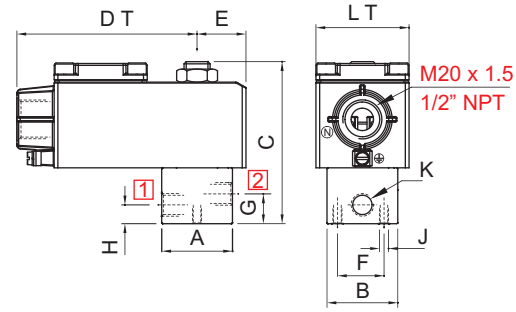


TERMINAL BOX/ Ex d TYPE 16, 19, 37, 39, 58, 58LT

K (PORT SIZE)	A	B	C	D P	D T	E	F	G	H	J	L P	L T	BODY MATL.	CONST. REF.
VALVE TYPE : 20101														
1/8", 1/4"	38	38	87	60	85	22	25	16	10	M6	36	40	AL, BR	1
3/8", 1/2"	60	38	95	60	85	22	25	20.5	20.5	M6	36	40	AL, BR	2
1/8", 1/4"	44	Ø48	91	60	85	22	25	17	10.5	M6	36	40	SS	3
3/8", 1/2"	58	Ø62	111	60	60	22	25	14	14	M6	36	40	SS	4



PLUG IN SOLENOID TYPE 25

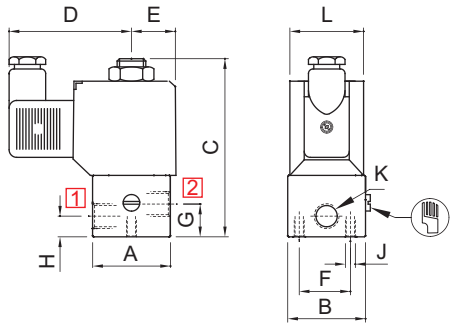


TERMINAL BOX/ Ex d LARGE ENCLOSURE TYPE 16, 19, 37, 39, 58, 58LT, LC

K (PORT SIZE)	A	B	C	D P	D T	E	F	G	H	J	L P	L T	BODY MATL.	CONST. REF.
VALVE TYPE : 20101														
1/8", 1/4"	38	38	87	66	97	26	25	16	10	M6	Ø50	50	AL, BR	5
3/8", 1/2"	60	38	95	66	97	26	25	20.5	20.5	M6	Ø50	50	AL, BR	6
1/8", 1/4"	44	Ø48	91	66	97	26	25	17	10.5	M6	Ø50	50	SS	7
3/8", 1/2"	58	Ø62	111	68	103	28	25	14	14	M6	Ø50	50	SS	8
VALVE TYPE : 20126														
1/8", 1/4"	50	50	102	68	103	28	25	17	10.5	M6	Ø50	50	AL, BR	9
3/8", 1/2"	65	50	108	68	103	28	25	14	14	M6	Ø50	50	AL, BR	10
1/8"	44	Ø48	91	66	103	28	25	17	10.5	M6	Ø50	50	SS	13
3/8"	58	Ø62	111	68	103	29	25	14	14	M6	Ø50	50	SS	14
VALVE TYPE : 20123, 20124														
3/8", 1/2"	65	50	108	68	103	28	25	15	21	M6	Ø50	50	AL, BR	11

DIMENSIONS

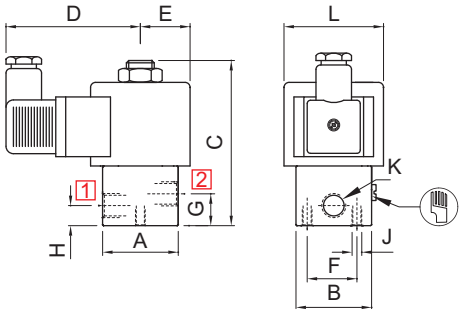
All Dimensions are in mm



MANUAL OVERRIDE OPTIONALLY PROVIDED

PLUG IN SOLENOID TYPE 22

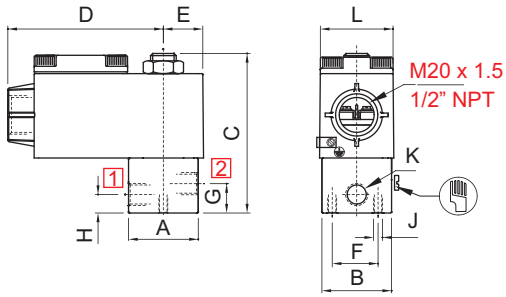
K (PORT SIZE)	A	B	C	D	E	F	G	H	J	L	BODY MATL.	CONST. REF.
VALVE TYPE : 20101 WITH MO												
1/8”, 1/4”	38	38	87	60	22	25	16	10	M6	36	AL, BR	1
3/8”, 1/2”	60	38	95	60	22	25	20.5	20.5	M6	36	AL, BR	2
1/8”, 1/4”	44	Ø48	91	60	22	25	17	10.5	M6	36	SS	3
3/8”, 1/2”	58	Ø62	111	60	22	25	14	14	M6	36	SS	4



MANUAL OVERRIDE OPTIONALLY PROVIDED

SQUARE PLUG IN SOLENOID TYPE 25

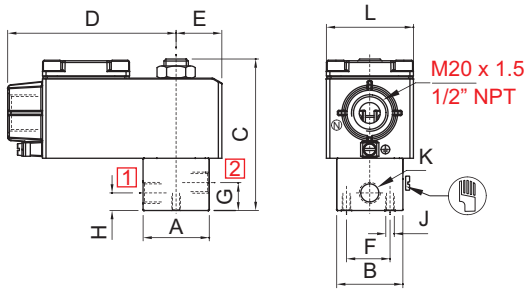
K (PORT SIZE)	A	B	C	D	E	F	G	H	J	L	BODY MATL.	CONST. REF.
VALVE TYPE : 20101 WITH MO												
1/8”, 1/4”	38	38	87	66	25	25	16	10	M6	Ø50	AL, BR	5
3/8”, 1/2”	60	38	95	66	25	25	20.5	20.5	M6	Ø50	AL, BR	6
1/8”, 1/4”	44	Ø48	91	66	25	25	17	10.5	M6	Ø50	SS	7
3/8”, 1/2”	58	Ø62	111	68	22	25	14	14	M6	Ø50	SS	8
VALVE TYPE : 20126 WITH MO												
1/8”, 1/4”	50	50	104	68	25	25	17	10.5	M6	Ø50	AL, BR	9
3/8”, 1/2”	65	50	104	68	25	25	14	14	M6	Ø50	AL, BR	10
1/4”	44	Ø48	91	66	25	25	17	10.5	M6	Ø50	SS	13
1/2”	58	Ø62	111	68	29	25	14	14	M6	Ø50	SS	14
VALVE TYPE : 20123, 20124 WITH MO												
1/2”	65	50	110	68	25	25	15	21	M6	Ø50	AL, BR	12



MANUAL OVERRIDE OPTIONALLY PROVIDED

TERMINAL BOX/ Ex d ENCLOSURE, TYPE 16, 19, 37, 39, 58, 58LT

K (PORT SIZE)	A	B	C	D	E	F	G	H	J	L	BODY MATL.	CONST. REF.
VALVE TYPE : 20101 WITH MO												
1/8”, 1/4”	38	38	87	85	22	25	16	10	M6	39	AL, BR	1
3/8”, 1/2”	60	38	95	85	22	25	20.5	20.5	M6	39	AL, BR	2
1/8”, 1/4”	44	Ø48	91	85	22	25	17	10.5	M6	39	SS	3
3/8”, 1/2”	58	Ø62	111	60	22	25	14	14	M6	39	SS	4



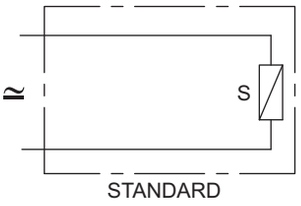
MANUAL OVERRIDE OPTIONALLY PROVIDED

TERMINAL BOX/ Ex d LARGE ENCLOSURE, TYPE 16, 19, 37, 39, 58, 58LT, LC

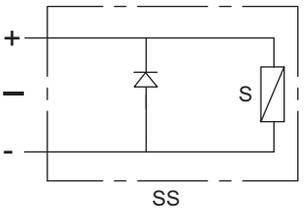
K (PORT SIZE)	A	B	C	D	E	F	G	H	J	L	BODY MATL.	CONST. REF.
VALVE TYPE : 20101 WITH MO												
1/8”, 1/4”	38	38	87	97	26	25	16	10	M6	50	AL, BR	5
3/8”, 1/2”	60	38	95	97	26	25	20.5	20.5	M6	50	AL, BR	6
1/8”, 1/4”	44	Ø48	91	97	26	25	17	10.5	M6	36	SS	7
3/8”, 1/2”	58	Ø62	111	103	28	25	14	14	M6	50	SS	8
VALVE TYPE : 20126 WITH MO												
1/8”, 1/4”	50	50	102	103	28	25	17	10.5	M6	50	AL, BR	9
3/8”, 1/2”	65	50	102	103	28	25	14	14	M6	50	AL, BR	10
1/4”	44	Ø48	91	103	28	25	17	10.5	M6	50	SS	13
1/2”	58	Ø62	111	103	29	25	14	14	M6	50	SS	14
VALVE TYPE : 20123, 20124 WITH MO												
3/8”, 1/2”	65	50	108	103	28	25	15	21	M6	50	AL, BR	11

DIN PLUG IN SOLENOID TYPE : 22, 25

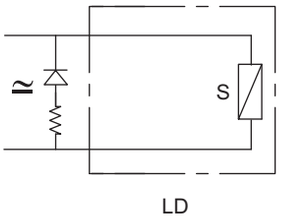
CIRCUIT DIAGRAM



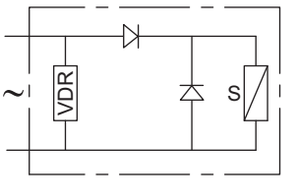
STANDARD



SS



LD



RC

FEATURES

- Designed for extreme environmental condition
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- DIN Plug supplied with Solenoid

SPECIFICATION

Size	I-14 mm, II-18 mm & III-14 mm, 13mm, IV-14mm
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 220 V
Current	50 Hz, 60 Hz, DC
Enclosure	**Cable Entry** Pg 9 : As per DIN 43650 Type A & Type B **Material** Moulded plastic, Steel Chrome plated
Options	Surge Suppressor (SS), LED (LD), Low Power (LW), Rectified (RC)
Power	Refer to table "Power" on page 425A
Insulation Class	Class F, Optionally Class H
Weather Protection	IP67, IP67 M
Approval	Indian, European, SIL
Voltage Variation	Refer to Voltage Variation Table (on page 425B)
Duty Cycle	100% (ED)
Ambient Temperature	Class F, Power ≤ 13W, -20 °C to 75 °C Class H, Power ≤ 13W, -20 °C to 100 °C, Power ≥ 13W, -20 °C to 75 °C

WEIGHT IN kg

Size	Moulded Plastic	Steel
I	0.2	0.250
II		0.450
III		0.370

APPLICATION

INDOOR OUTDOOR

DIN PLUG IN SOLENOID TYPE : 22, 25

POWER

Voltage	Solenoid		Power (VA)						
	Size	Core Dia	0.4②	1.8②	3.5	8	12	13	30②
6	I	14							
	II	18				✓		▲	
	III	13	✓						
	III	14		✓	✓	▲			
	IV	14		✓					
12	I	14				▲	▲		
	II	18				✓		▲	✓
	III	13	✓						
	III	14		✓	✓	▲			
	IV	14		✓					
24	I	14		✓		▲	▲		
	II	18				✓		▲	✓
	III	13	✓						
	III	14		✓	✓	▲			
	IV	14		✓					
48	I	14				▲	▲		
	II	18						▲	✓
	III	14		✓	✓	▲			
110-120	I①	14					▲		
	II	18				✓		▲	✓
	III	14				▲			
220-240	I①	14					▲		
	II	18				✓		▲	✓
	III	14				▲			
256②	II	18				✓		▲	✓
	III	14				▲			

▲ Standard
✓ Optional Available

① Select Current 50 Hz or 60 Hz
② Select Current DC

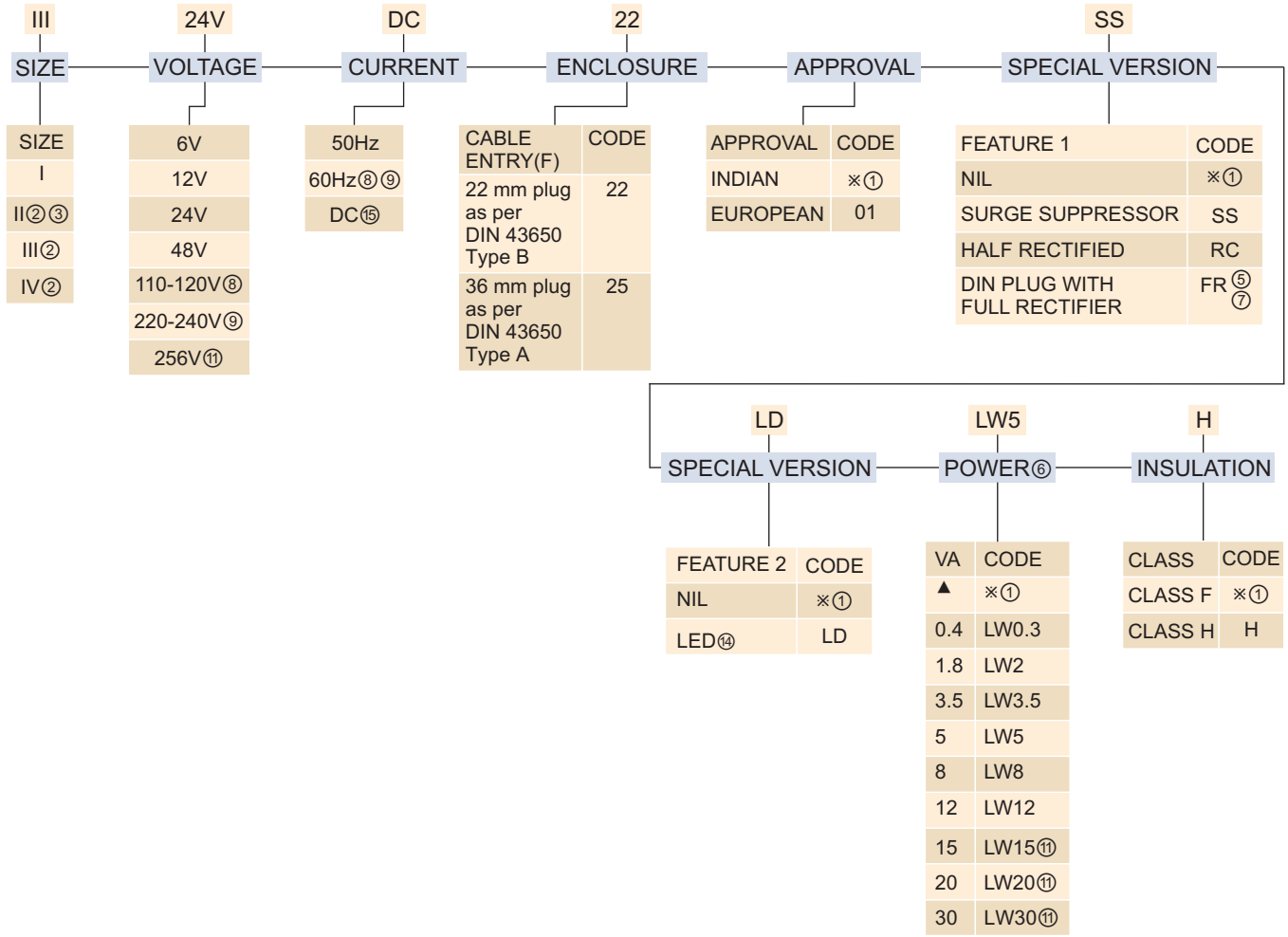
STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

DIN PLUG IN SOLENOID TYPE : 22, 25

SOLENOID ORDERING CODE

III-24V-DC-22-SS-LD-LW5-H



NOTE :
① Do not specify
② Select enclosure code 25
③ Current 50 Hz, 60 Hz, Select Special version RC
⑤ Select DC current coil to operate for 50 Hz or 60 Hz e.g. 110V DC-25-PR can be use for 110V 50 Hz or 120V, 60 Hz or DC
⑥ Refer Power table on page 425A
⑦ FR option will be available with coil type 25 only
⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz
⑨ 220-240V 50 Hz Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz
⑪ Select Special version PR for current 50 Hz or 60 Hz
⑭ Voltage 24, 110, 220V current 50 Hz, 60 Hz, DC, LED provided in DIN plug
⑮ 110-120V, 220-240V, current DC, size II, III

VOLTAGE VARIATION (For Continuous Duty only)

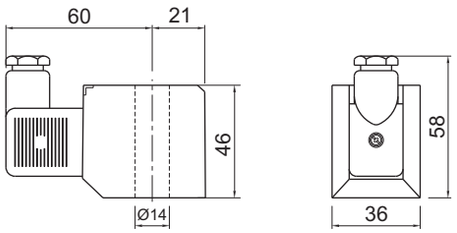
Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V

DIN PLUG IN SOLENOID TYPE : 22, 25

DIMENSION

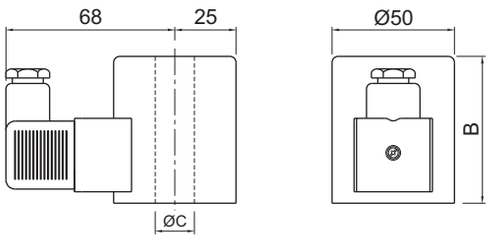
SOLENOID TYPE : 22

Plug as per DIN 43650 Type B



SOLENOID TYPE : 25

Plug as per DIN 43650 Type A



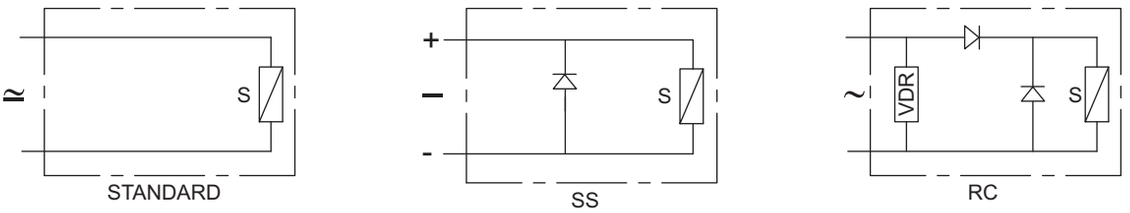
SIZE	ØC	B
III	13	43
II	18	60
IV	14	60
III	14	43

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

 Replace with Solenoid code 22 or 25 along with Guide & Plunger Assembly	 Replace with Solenoid coil code 22			

FLYING LEAD SOLENOID TYPE : 01, 04, 06

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation

SPECIFICATION

Size	I-14 mm, II-18 mm, III-14 mm
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 220 V
Current	50 Hz, 60 Hz, DC
Enclosure	**Cable Entry** Flying Leads **Material** Steel, Chrome Plated
Options	Surge Suppressor(SS)
Power	Refer to table "Power" on page 426A
Insulation Class	Class F optionally Class H
Weather Protection	IP54, Optionally IP67
Approval	Indian
Voltage Variation	Refer to Voltage Variation table (on page 426B)
Duty Cycle	100% (ED)
Ambient Temperature	-20 °C to 60 °C

WEIGHT IN kg

Size		Steel
I		0.2 kg
II		0.4 kg
III		0.3 kg

APPLICATION

INDOOR

FLYING LEAD SOLENOID TYPE : 01, 04, 06

POWER

Voltage	Solenoid		Power (VA)						
	Size	Core Dia					8	12	13
6	I	14					▲		
	II	18							▲
12	I	14					▲	▲	
	II	18							▲
24	I	14					▲	▲	
	II	18							▲
48	I	14					▲	▲	
	II	18							▲
110-120	I①	14						▲	
	II	18							▲
	III	14					▲		
220-240	I①	14						▲	
	II	18							▲
	III	14					▲		

▲ Standard

✓ Optional Available

① Select Current 50 Hz or 60 Hz

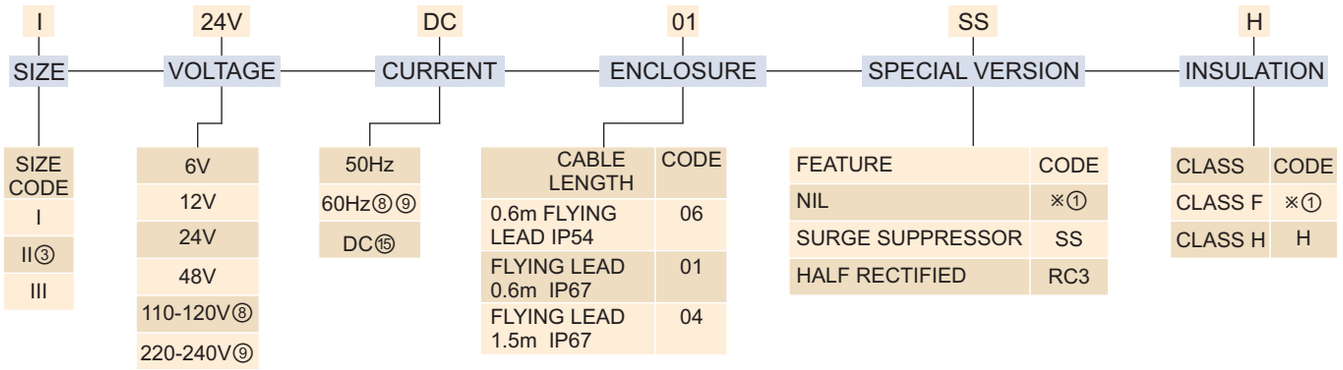
STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

FLYING LEAD SOLENOID TYPE : 01, 04, 06

SOLENOID ORDERING CODE

III-24V-DC-01-SS-H



NOTE : ① Do not specify

③ Current 50 Hz, 60 Hz, Select Special version RC

⑥ Refer Power table on page 426A

⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz

⑨ 220-240V 50 Hz Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz

⑮ 110-120V, 220-240V, DC can be supplied in Solenoid size II, III

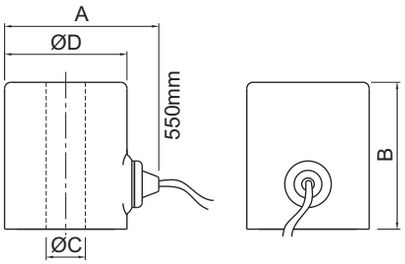
VOLTAGE VARIATION (For Continuous Duty only)

Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V

FLYING LEAD SOLENOID TYPE : 01, 04, 06

DIMENSION

SOLENOID TYPE : 01, 04, 06

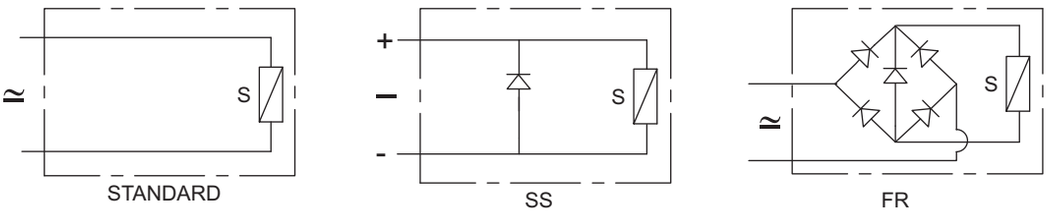


SIZE	A	B	ØC	ØD
I	56	42	14	42
II	64	60	18	50
III	63	43	14	50

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

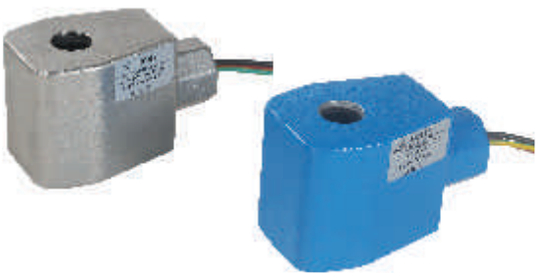
FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 08

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- UL Listed file number (applied for)



SPECIFICATION

Size	II- 18 mm, III- 13 mm, III & IV - 14 mm
Voltage	6 V, 12 V, 24 V, 110 V, 220 V, 256 V, 110-120V, 220-240V
Current	DC, 50/ 60 Hz/ DC
Enclosure	**Cable Entry** 1/2" NPT (F) **Material** Aluminum Cast, Polyster Powder coat, Colour Black/ Blue Stainless Steel casting
Options	Surge Suppressor(SS), Fully Rectified (FR), Low Power (LW) Manual Reset ON (MR)
Power	Refer to table "Power" on Page 427A
Insulation Class	Class H
Weather Protection	Type 3, 3S, 3R, 4, 4X, 6, 6P
Approval	UL Listed
Voltage Variation	Refer to Voltage Variation Table (on page 427B)
Duty Cycle	100% (ED)
Ambient Temprature	Power ≤ 20W, -60 °C to 100 °C, Power >20W, ≤30W, -60 °C to 70 °C

WEIGHT IN kg

Size	Al/ kg	SS/ kg
II	0.7	0.9
III	0.6	

APPLICATION

FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 08

POWER

Voltage	Solenoid		Power (VA)					
	Size	Core Dia	0.4②	1.8②	3.5	8	13	30
6	II	18				✓	▲	
	III	13	✓					
	III	14		✓	✓	▲		
	IV	14		✓				
12	II	18				✓	▲	✓
	III	13	✓					
	III	14		✓	✓	▲		
	IV	14		✓				
24	II	18				✓	▲	✓
	III	13	✓					
	III	14		✓	✓	▲		
	IV	14		✓				
110-120	II	18				✓	▲	✓
	III	14			✓	▲		
220-240	II	18				✓	▲	✓
	III	14				▲		
256②	II	18				✓	▲	✓
	III	14				▲		

▲ Standard
✓ Optional Available

② Select Current DC

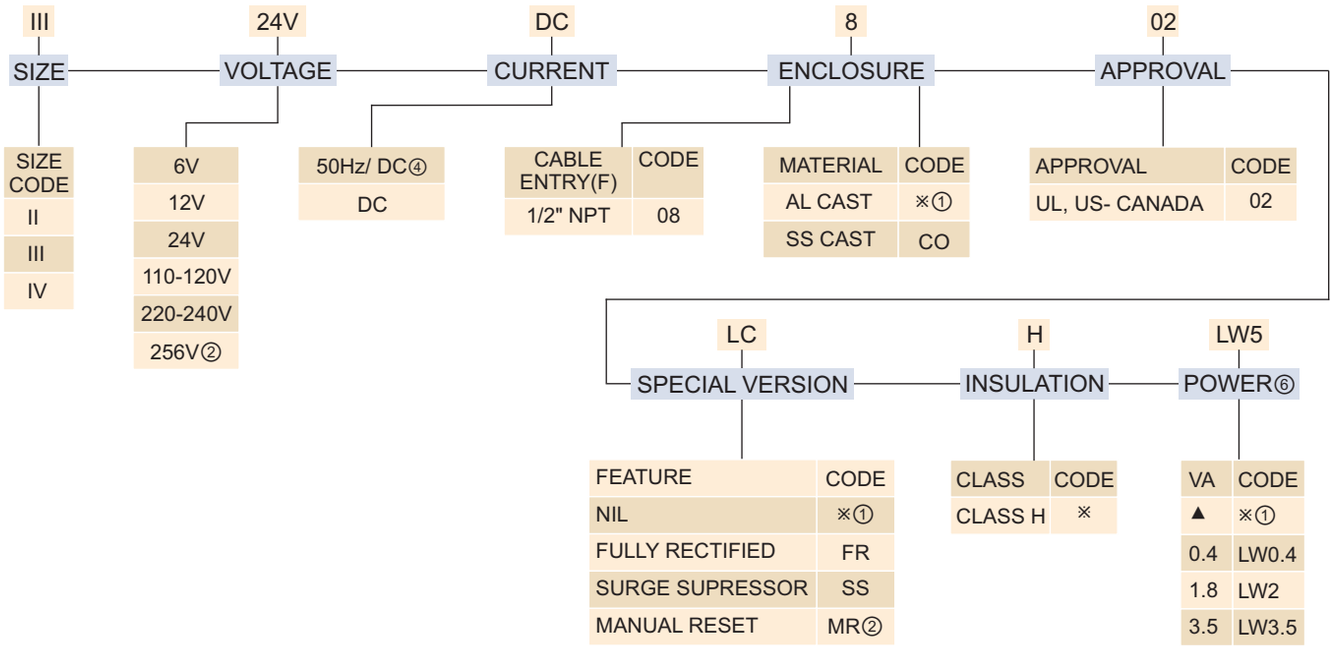
STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 08

SOLENOID ORDERING CODE

III-24V-DC-08-H-02



SIZE CODE
II
III
IV

6V
12V
24V
110-120V
220-240V
256V②

50Hz/ DC④
DC

CABLE ENTRY(F)	CODE
1/2" NPT	08

MATERIAL	CODE
AL CAST	※①
SS CAST	CO

APPROVAL	CODE
UL, US- CANADA	02

FEATURE	CODE
NIL	※①
FULLY RECTIFIED	FR
SURGE SUPRESSOR	SS
MANUAL RESET	MR②

CLASS	CODE
CLASS H	※

VA	CODE
▲	※①
0.4	LW0.4
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

NOTE :

① Do not Specify

② Select current DC

④ Select special version 'FR'

⑥ Refer Power table on page 427A

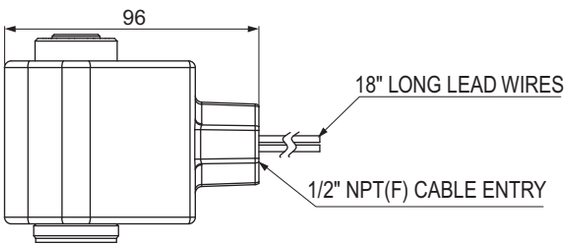
VOLTAGE VARIATION (For Continuous Duty only)

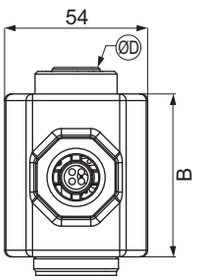
Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V

FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 08

DIMENSION

SOLENOID TYPE : 08



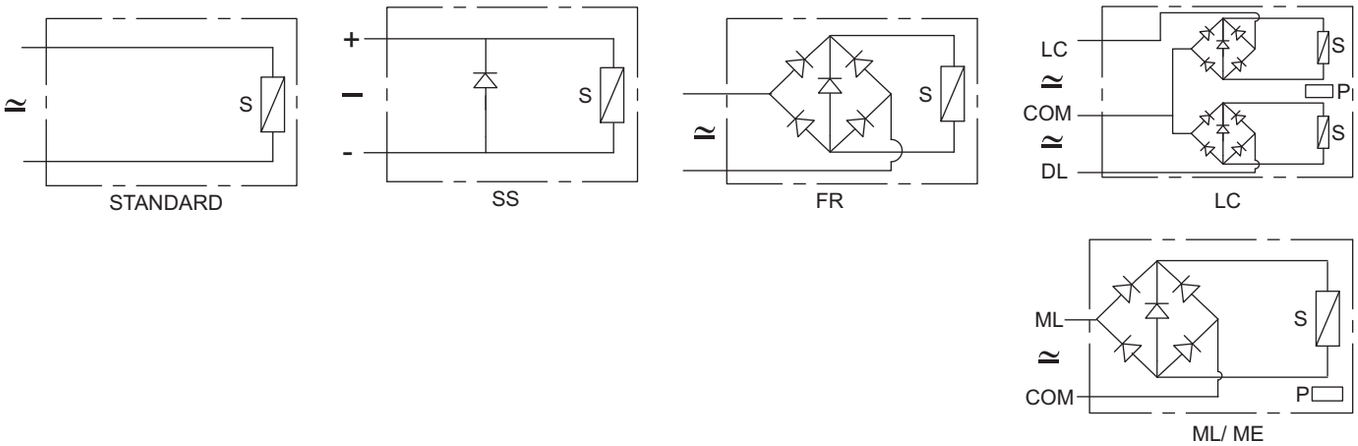


SIZE	B	ØD*
II	61	18
III	47	14
IV	61	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

TERMINAL BOX SOLENOID TYPE : 16, 19

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- With Integrated terminal box and Horizontal cable entry
- Wider voltage & frequency variation
- 'O' energiser for higher magnetic linkage
- Large terminals for easy connections
- Internal as well as external earth terminal
- Constructed for lowest temperature rise thus longer life

SPECIFICATION

Size	I- 14 mm, II- 18 mm, III- 13 mm, III & IV - 14 mm
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 220 V, 256 V
Current	50 Hz, 60 Hz, DC, 50/ 60 Hz/ DC
Enclosure	**Cable Entry** M25X1.5, Adopted to M20 X 1.5 or 1/2" NPT **Material** Aluminum Cast Painting : Polyster Powder coated Stainless Steel Cast, Optionally Polyster Powder coated Painted
Options	Surge Suppressor(SS), Fully Rectified (FR), Latch (LC), Latch, Manual Reset OFF (ML), Manual Reset ON (MR), LED (LD)
Power	Refer to table "Power" on Page 428A
Insulation Class	Class F, Optionally Class H
Weather Protection	IP67, Optionally IP67M, IP68
Approval	Indian, European, SIL
Voltage Variation	Refer to Voltage Variation Table (on page 428B)
Duty Cycle	100% (ED)
Ambient Temprature	Class F, Power ≤ 13W, -40 °C to 75 °C Class H, Power ≤ 13W, -40 °C to 100 °C, Power ≥ 13W, -40 °C to 75 °C

WEIGHT IN kg

Size	Al	SS
I	0.5	1.2
II	0.8	1.7
III	0.6	1.4
IV	0.8	1.6

APPLICATION

TERMINAL BOX SOLENOID TYPE : 16, 19

POWER

Voltage	Solenoid		Power (VA)							
	Size	Core Dia	0.4②	1.8②	3.5	5	8	12	13	30
6	I	14					▲			
	II	18					✓		▲	
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
12	I	14		✓			▲	▲		
	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
24	I	14		✓			▲	▲		
	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓	✓	▲			
	IV	14		✓						
48	I	14					▲	▲		
	II	18							▲	✓
	III	14		✓	✓		▲			
	IV	14		✓						
110-120	I①	14				✓	▲	▲		
	II	18					✓		▲	✓
	III	14			✓		▲			
220-240	I①	14				✓	▲	▲		
	II	18					✓		▲	✓
	III	14					▲			
256②	II	18					✓		▲	✓
	III	14				✓	▲			
440④	III	14						▲		

▲ Standard
✓ Optional Available

① Select Current 50 Hz or 60 Hz
② Select Current DC
④ Select Current 50 Hz

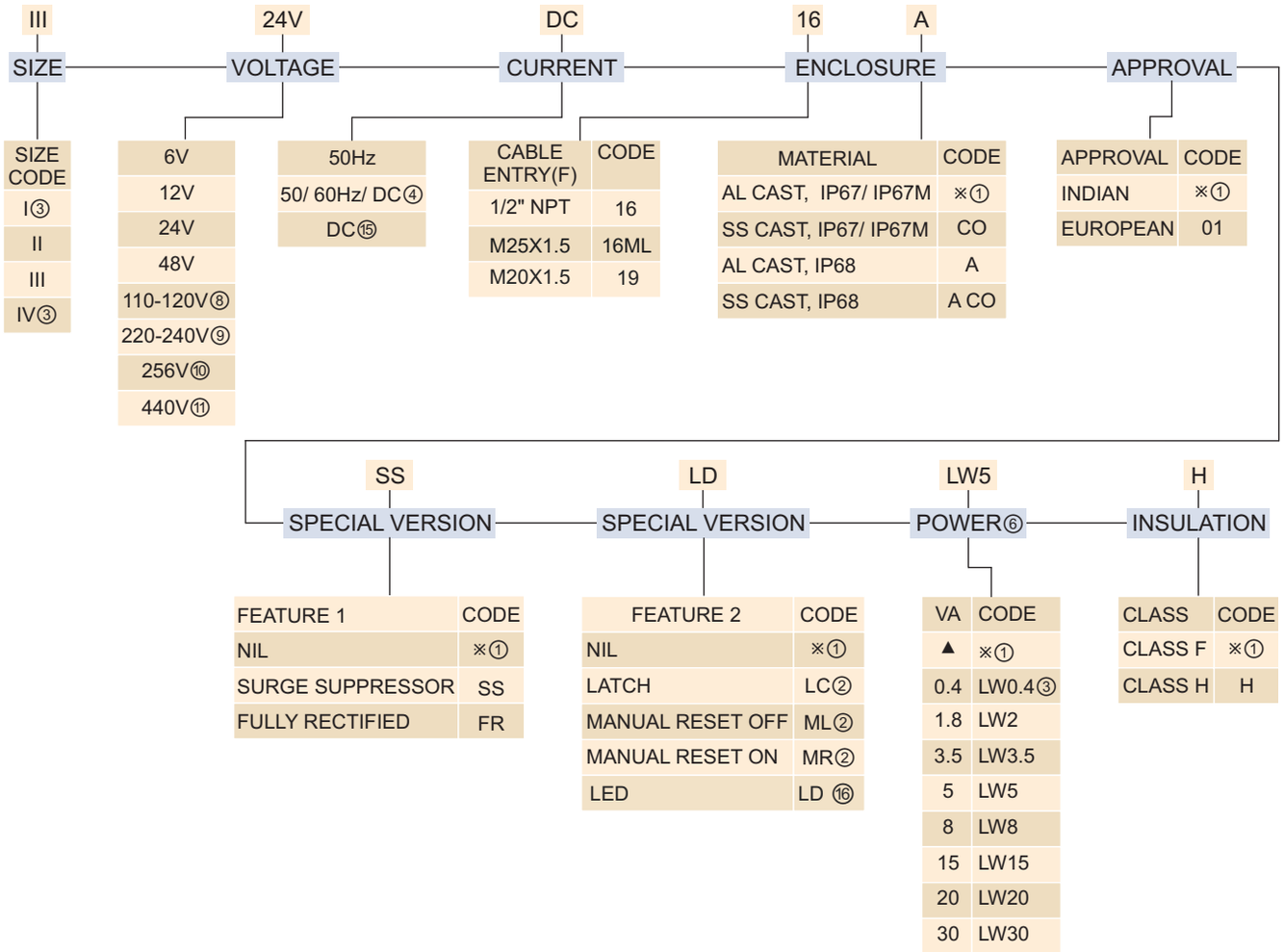
STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

TERMINAL BOX SOLENOID TYPE : 16, 19

SOLENOID ORDERING CODE

III - 24DC - 16 - A - SS - LD - LW5 - H



SIZE CODE
I③
II
III
IV③

6V
12V
24V
48V
110-120V⑧
220-240V⑨
256V⑩
440V⑪

50Hz
50/ 60Hz/ DC④
DC⑮

CABLE ENTRY(F)	CODE
1/2" NPT	16
M25X1.5	16ML
M20X1.5	19

MATERIAL	CODE
AL CAST, IP67/ IP67M	※①
SS CAST, IP67/ IP67M	CO
AL CAST, IP68	A
SS CAST, IP68	A CO

APPROVAL	CODE
INDIAN	※①
EUROPEAN	01

FEATURE 1	CODE
NIL	※①
SURGE SUPPRESSOR	SS
FULLY RECTIFIED	FR

FEATURE 2	CODE
NIL	※①
LATCH	LC②
MANUAL RESET OFF	ML②
MANUAL RESET ON	MR②
LED	LD ⑯

VA	CODE
▲	※①
0.4	LW0.4③
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

CLASS	CODE
CLASS F	※①
CLASS H	H

NOTE :
① Do not specify
② Voltage 24V, 110-120V, 220-240V current 50/ 60 Hz/ DC power standard size II/ III
③ Current 50/ 60 Hz/ DC Special version FR can not be opted
④ Select Option FR for 50/ 60 Hz/ DC current
⑥ Refer Power table on page 428A
⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz
⑨ 220-240V Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz
⑩ Only for DC current
⑪ Current 50 Hz, Size III
⑮ 110-120V, 220-240V, DC can be supplied in Solenoid size II, III
⑯ Size II & III Only

VOLTAGE VARIATION (For Continuous Duty only)

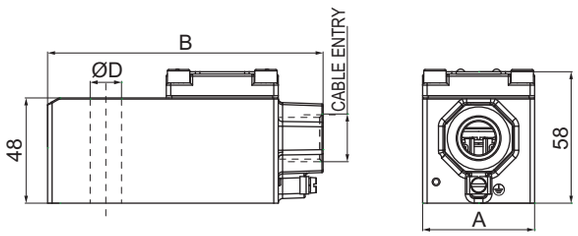
Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V
440	350V to 480V

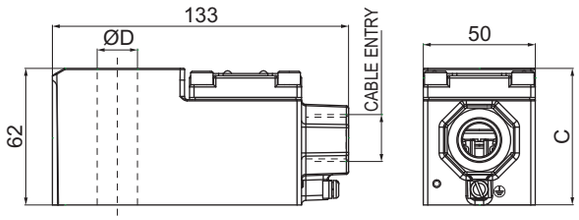
TERMINAL BOX SOLENOID TYPE : 16, 19

DIMENSION SOLENOID TYPE : 16

CABLE ENTRY
Include drwg. with adopter
16 MS
16

CABLE ENTRY M20X1.5

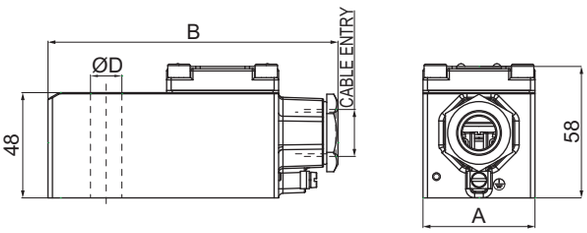


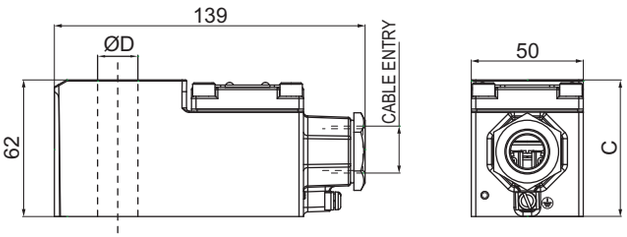


SIZE	A	B	ØD
I	42	116	14
III	50	124	14
III	50	124	13

SIZE	C	ØD
II	61	18
IV	51	14

CABLE ENTRY M20X1.5 & 1/2" NPT (With Adopter)





SIZE	A	B	ØE
I	42	122	14
III	50	130	14
III	50	130	13

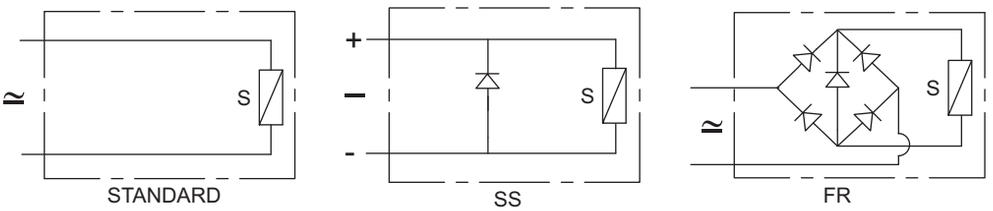
SIZE	C	ØD
II	61	18
IV	51	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

 Replace with Solenoid code 16 or 16MS along with Guide and Plunger assembly	 Solenoid Type 19 Replace with coil code 16MS			

TERMINAL BOX (BCE) TYPE : 17

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Large terminals for easy connection
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- Bottom Cable entry to avoid rain or process fluid entering into the termination area.
- For ease of operation and maintenance LED can be provided to confirm avalibility of voltage to the coil terminals
- UL Listed, file number E342217
- Dual gasket for better weather proof protection

UL

SPECIFICATION

Size	II - 18 mm, III - 13 mm, III & IV - 14 mm	
Voltage	6 V, 12 V, 24 V, 110 V, 120 V, 220 V, 256 V	
Current	50 Hz, 60 Hz, DC, 50/ 60 Hz/ DC	
Enclosure	**Cable Entry**	M25 X 1.5, Adopted to M20 X 1.5 or 1/2" NPT
	Material	Aluminum Cast colour Blue polyester powder coat, Stainless Steel Cast
Options	Surge Suppressor (SS), Fully Rectified (FR), Low Power (LW), Manual Reset (MR)	
Power	Refer to table "Power" on page 428E	
Insulation Class	Class H	
Weather Protection	Type 3, 35, 4, 4X, 6, 6P	
Approval	UL Listed	
Voltage Variation	Refer to Voltage Variation table on page 428F	
Duty Cycle	100% (ED)	
Ambient Temprature	Power ≤ 20W, -60 °C to 100 °C, Power ≥ 20W, -60 °C to 75 °C	

WEIGHT IN kg

Size	Al/ kg	SS/ kg
II	0.9	1.6
III	0.8	1.4

APPLICATION

TERMINAL BOX (BCE) TYPE : 17

POWER

Voltage	Solenoid		Power (VA)							
	Size	Core Dia	0.4②	1.8②	3.5	5	8	12	13	30
6	II	18					✓		▲	
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
12	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
24	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
48	II	18							▲	
	III	13					▲			
110-120	II	18					✓		▲	✓
	III	13								
	III	14				✓	▲	▲		
	IV	14								
220-240	II	18					✓		▲	✓
	III	14			✓		▲	▲		
	IV	14								
256②	II	18					✓		▲	✓
	III	14					▲			
	IV	14								

▲ Standard
✓ Optional Available
② Only for DC Current

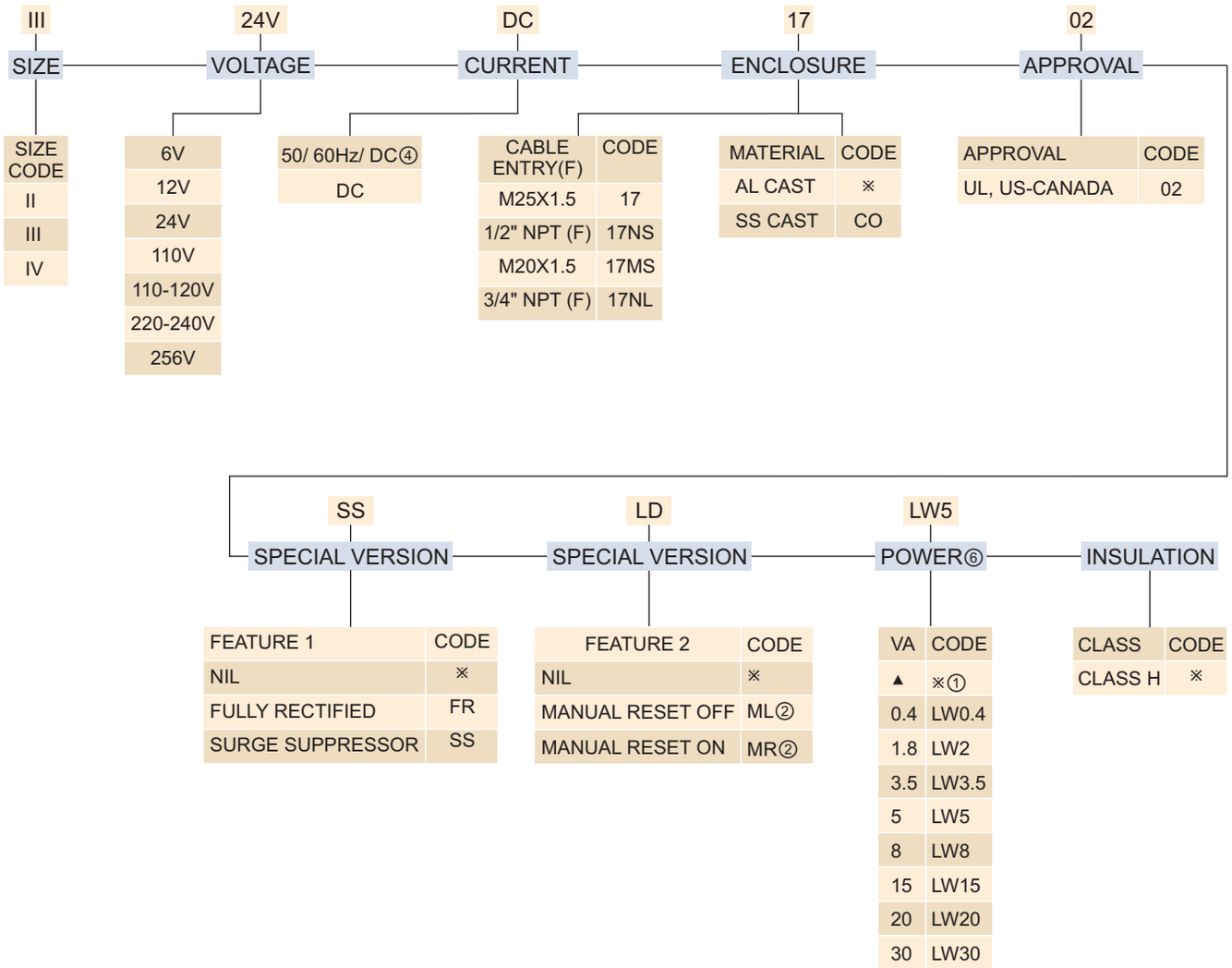
STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

TERMINAL BOX (BCE) TYPE : 17

SOLENOID ORDERING CODE

III-24V-DC-17-CO-SS-LD-LW5-H-02



SIZE CODE
II
III
IV

6V
12V
24V
110V
110-120V
220-240V
256V

50/ 60Hz/ DC④
DC

CABLE ENTRY(F)	CODE
M25X1.5	17
1/2" NPT (F)	17NS
M20X1.5	17MS
3/4" NPT (F)	17NL

MATERIAL	CODE
AL CAST	※
SS CAST	CO

APPROVAL	CODE
UL, US-CANADA	02

FEATURE 1	CODE
NIL	※
FULLY RECTIFIED	FR
SURGE SUPPRESSOR	SS

FEATURE 2	CODE
NIL	※
MANUAL RESET OFF	ML②
MANUAL RESET ON	MR②

VA	CODE
▲	※①
0.4	LW0.4
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

CLASS	CODE
CLASS H	※

NOTE : ① Do not specify

② Available in size II and III select power standard voltage 24V, 110-120V, 220-240V

④ Select special version FR

⑥ Refer Power table on page 428E for size, Voltage and Power

⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz

⑨ 220-240V Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz

VOLTAGE VARIATION (For Continuous Duty only)

Rated Volatge	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V

TERMINAL BOX (BCE) TYPE : 17

MARKING

ROTEX AUTOMATION LIMITED
www.rotexautomation.com

c UL us TYPE
3, 3R, 3S, 4, 4X, 6 & 6P

MODEL : III-110-120V-50Hz-60Hz/DC-7-02-FR-LW5

SR. NO. : 15100100 - 07/14-081

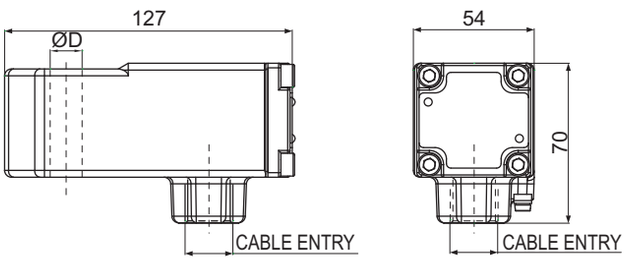
Ambient Temperature
-60 °C to 100 °C POWER ≤ 20W
-60 °C to 70 °C > 20W POWER ≤ 30W

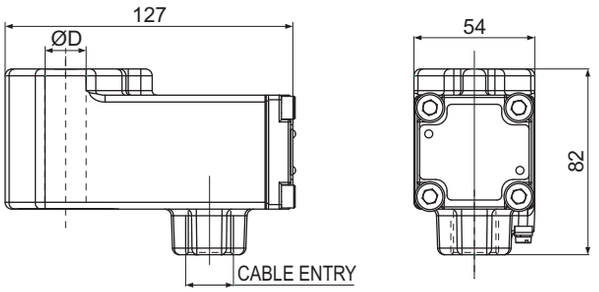
DUTY CYCLE : CONTINUOUS

DIMENSION

SOLENOID TYPE : 17

WITH CABLE ENTRY M25X1.5

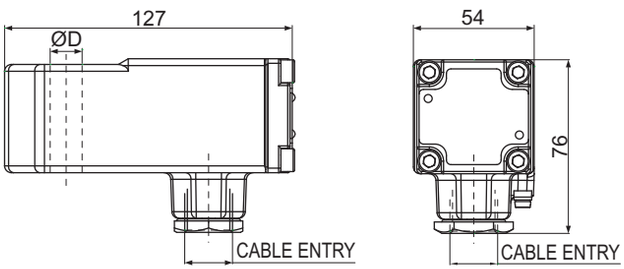


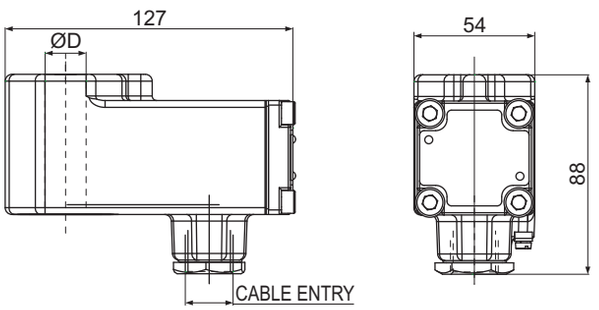


	ØD
III	13
III	14

	ØD
II	18
IV	14

CABLE ENTRY M20X1.5, 1/2" NPT(F) (With Adopter)





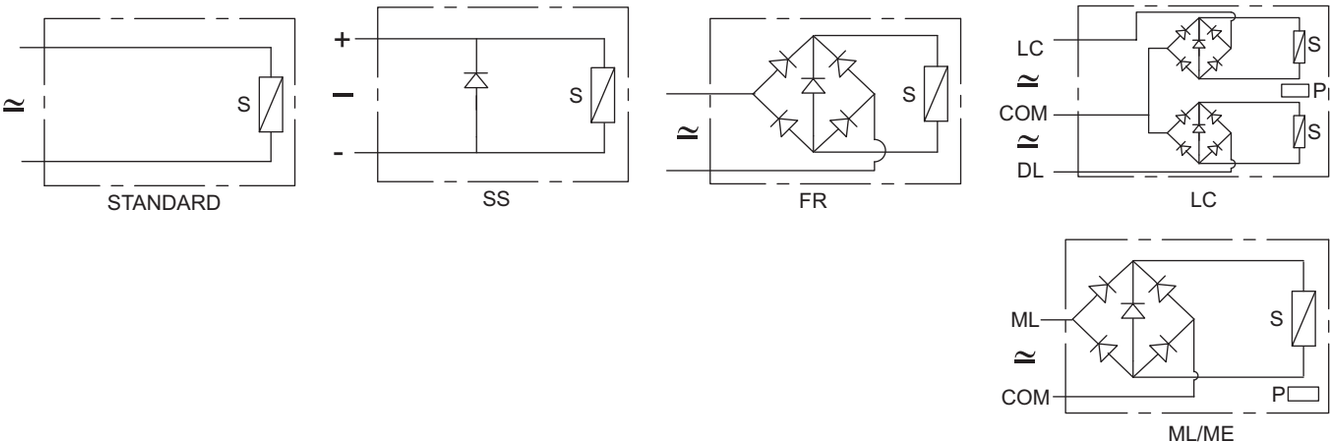
	ØD
III	13
III	14

	ØD
II	18
IV	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

EXPLOSION PROOF SOLENOID TYPE : 37, 39 Ex d

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- With Integrated terminal box and Horizontal cable entry
- Large terminals for easy connections
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- Surger Suppressor Provided
- Dual gasket

SPECIFICATION

Size	I- 14 mm, II- 18 mm, III- 13 mm, III & IV - 14 mm
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 220 V, 256 V
Current	50 Hz, 60 Hz, DC, 50/ 60/ DC
Enclosure	**Cable Entry** M25X1.5, Adopted to M20X1.5 or 1/2" NPT ((INDIAN Approval) M20X1.5, 1/2" NPT (37-01, 39-01) (Other than INDIAN Approval) **Material** Aluminum Cast, Polyster Powder coat, Colour Red Stainless Steel Cast, Painted Optionally Grey Polyster Powder coat
Options	Corrosive Enviornment (CO), Manual Reset ON (MR ON), Manual Reset OFF (MR OFF), Low Power (LW), Latch (LC), Surge Suppressor(SS), Fully Rectified (FR)
Power	Refer to table "Power" on page 429A
Insulation Class	Class F optionally Class H (INDIAN Approval) Class H (Other than INDIAN Approval)
Weather Protection	IP66, IP67, IP67M (Refer marking on page 429C)
Approval	INDIAN, ATEX, CU-TR, INMETRO, CCOE, DGMS, SIL
Voltage Variation	Refer to Voltage Variation table on page 429B
Duty Cycle	100% (ED)
Ambient Temprature	Refer to Ambient temperature table on page 429C

WEIGHT IN kg

Size	Al	SS
I	0.5	1.2
II	0.8	1.7
III	0.6	1.4
IV	0.8	1.6

APPLICATION

EXPLOSION PROOF SOLENOID TYPE : 37, 39 Ex d

POWER

Voltage	Solenoid		Power (VA)							
	Size	Core Dia	0.4②	1.8②	3.5	5	8	12	13	30
6	I	14					▲			
	II	18					✓		▲	
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
12	I	14		✓③			▲	▲		
	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓		▲			
	IV	14		✓						
24	I	14		✓③			▲	▲		
	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓	✓	▲			
	IV	14		✓						
48	I	14		✓③			▲	▲		
	II	18							▲	✓
	III	14		✓	✓		▲			
	IV	14		✓						
110-120	I①	14				✓③		▲		
	II	18					✓		▲	✓
	III	14			✓	✓	▲			
220-240	I ①	14						▲		
	II	18					✓		▲	✓
	III	14				✓	▲			
256②	II	18					✓		▲	✓
	III	14					▲			
440④	III	14						▲		

▲ Standard
✓ Optional Available

① Current 50 Hz or 60 Hz
② Only for DC Current
③ Should be Opted for 3/2 & 5/2 pilot operated valve
④ Current 50 Hz only

STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

SOLENOID ORDERING CODE

III-24V-DC-37-CO-SS-LD-LW5-H

III	24V	DC	37			SS	LD	LW5	H
SIZE	VOLTAGE	CURRENT	ENCLOSURE		APPROVAL⑱	SPECIAL VERSION	SPECIAL VERSION	POWER⑥	INSULATION

SIZE CODE
I③
II
III
IV

6V
12V
24V
48V
110-120V⑮
220-240V⑮
256V⑨
440V⑩

50Hz
60Hz⑧⑨
50/60Hz/DC④
DC⑮

CABLE ENTRY(F)	CODE
1/2" NPT	37 ⑯
M20X1.5	39 ⑯

MATERIAL	CODE
AL CAST, IP66	※①
SS CAST, IP66	CO

APPROVAL	CODE
INDIAN	※①
ATEX	01
INMETRO	03
CU-TR	04
DGMS+CCOE	MN
PETROLEUM & ENVIORNMENT (CCOE)	PE

FEATURE 1	CODE
NIL	※①
SURGE SUPPRESSOR	SS
FULLY RECTIFIED	FR

FEATURE 2	CODE
NIL	※①
MANUAL RESET OFF	ML②
MANUAL RESET ON	MR②
LED	LD ⑲
LATCH	LC ②

VA	CODE
▲	※①
0.4	LW0.4
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

CLASS	CODE
CLASS F	※①
CLASS H	H

NOTE : ① Do not specify

② Voltage 24, 110-120V, 220-240V current 50/ 60 Hz/ DC Power standard size II or III

③ Current 50/ 60 Hz/ DC & Special version FR can not be opted

④ Select special version FR

⑥ Refer Power table on page 429A

⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz

⑨ 220-240V 50 Hz Solenoid can be used for 240V 60 Hz, 220-240V 50 Hz

⑩ 50 Hz current, Size III only

⑮ Current DC size II, III

⑯ IP67 Certified by IS, CCOE/ PESO, D MS

⑱ Add SL for SIL capable certified coil

⑲ Size II & III Only

VOLTAGE VARIATION (For Continuous Duty only)

Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	205V to 280V
440	350V to 480V

APPROVAL

Approval	certifying Agencies	reference Number
INDIAN	CMRI	KLPL/Ex/R/12-007
	KLPL (Re-Validated)	CMRI/TC/P/H-1415
BIS INDIAN		7229976
CCOE/ PESO INDIAN		P-218046/1
DGMS INDIAN		230 of 2011
EUROPEAN/ ATEX	CESI, Italy	CESI 03 ATEX 344 Extension No. 01/12
INMETRO	CEPEL	CEPEL 08-1717X
CU-TR		RU C-IN.ГБ08.B.01100

EXPLOSION PROOF SOLENOID TYPE : 37, 39 Ex d

MARKING

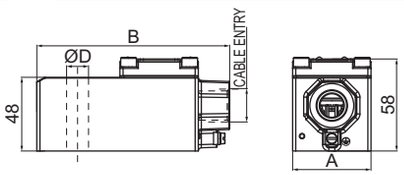
Marking	Ambient Temperature
ATEX	
II 2GD Ex d IIC T6 Gb Ex tb IIIC T80 °C Db IP66	- 40 °C ≤ Ta < 35 °C
II 2GD Ex d IIC T5 Gb Ex tb IIIC T95 °C Db IP66	- 40 °C ≤ Ta ≤ 50 °C
II 2GD Ex d IIC T4 Gb Ex tb IIIC T130 °C Db IP66	- 40 °C ≤ Ta ≤ 60 °C
INDIAN, CCOE/PESO, DGMS	Refer to Table for Ambient Temp.
Ex d IIC Tx IP67	- 20 °C ≤ Ta ≤ AA °C
INMETRO	
II 2GD Ex d IIC T6 Gb Ex tb IIIC T85 °C Db IP66	- 40 °C ≤ Ta < 35 °C
II 2GD Ex d IIC T5 Gb Ex tb IIIC T100 °C Db IP66	- 40 °C ≤ Ta ≤ 50 °C
II 2GD Ex d IIC T4 Gb Ex tb IIIC T135 °C Db IP66	- 40 °C ≤ Ta ≤ 60 °C
CU-TR	
1 Ex d IIC T6 Gb X/Ex tb IIIC T80 °C Db	- 40 °C to 35 °C
1 Ex d IIC T5 Gb X/Ex tb IIIC T95 °C Db	- 40 °C to 50 °C
1 Ex d IIC T4 Gb X/Ex tb IIIC T130 °C Db	- 40 °C to 60 °C

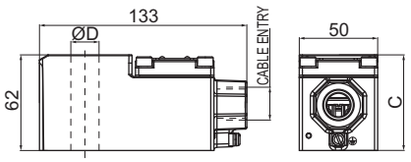
AMBIENT TEMPERATURE (INDIAN Approval)

SIZE	MAX. POWER	MAX. AMBIENT TEMP. °C		
		T6 (80)	T5 (95)	T4 (130)
I	5	65	70	-
	8	60	70	-
III	5	70	-	-
	8	60	70	-
	15	50	65	70
II	8	65	70	-
	10	60	70	-
	13	60	70	-
	20	55	70	-
	30	40	55	70
IV	5	70	-	-
	11	65	70	-

DIMENSION

SOLENOID TYPE : 37 & 39



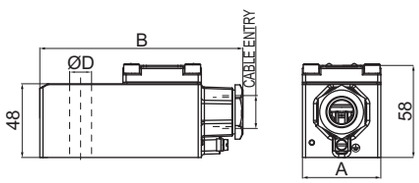


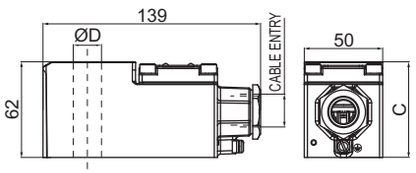
SIZE	A	B	ØD
I	42	116	14
III	50	124	14
III	50	124	13

COIL TYPE	CABLE ENTRY	APPROVAL INDIAN	OTHER THAN INDIAN
37	M25X1.5(F)	✓	
37	1/2"NPT(F)		✓
39	M20X1.5(F)		✓
37NS	1/2"NPT(F)	✓	
37MS	M20X1.5(F)	✓	

SIZE	C	ØD
II	61	18
IV	51	14

CABLE ENTRY M20X1.5, 1/2" NPT(F) (With Ex Adopter) (INDIAN Approval)





SIZE	A	B	ØD
I	42	122	14
III	50	130	14
III	50	130	13

COIL TYPE	CABLE ENTRY	APPROVAL INDIAN
37	1/2"NPT(F)	✓
39	M20X1.5(F)	✓
37MS	M20X1.5(F)	✓
37NS	1/2"NPT(F)	✓

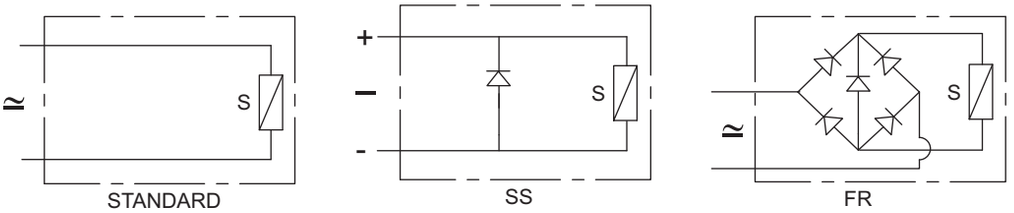
SIZE	C	ØD
II	61	18
IV	51	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

				
Replace Solenoid code 37 or 37MS along with Guide & Plunger assembly	Replace Solenoid code 37 or 37MS along with Guide & Plunger assembly	Solenoid code 39 replace with Solenoid code37MS		

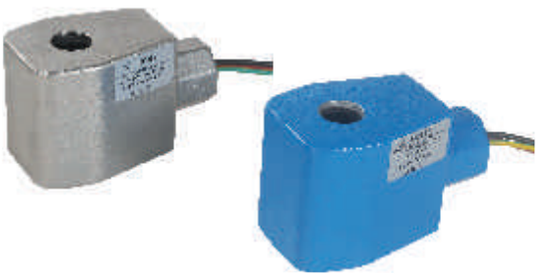
EXPLOSION PROOF FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 56 Ex d

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- UL Listed file number (applied for)



SPECIFICATION

Size	II- 18 mm, III- 13 mm, III & IV - 14 mm
Voltage	6 V, 12 V, 24 V, 110 V, 120 V, 220 V, 256 V
Current	50 Hz, 60 Hz, DC, 50/ 60 Hz/ DC
Enclosure	**Cable Entry** 1/2" NPT (F) **Material** Aluminum Cast, Polyster Powder coated, Colour Blue Stainless Steel casting
Options	Surge Suppressor(SS), Fully Rectified (FR), Manual Reset ON (MR)
Power	Refer to table "Power" on Page 431A
Insulation Class	Class H
Weather Protection	Type 3, 3S, 3R, 4, 4X, 6, 6P* 7 & 9
Approval	UL Listed
Voltage Variation	Refer to Voltage Variation Table (on page 431B)
Duty Cycle	100% (ED)
Ambient Temprature	Power ≤ 20W, -60 °C to 100 °C, Power ≥ 20W, -60 °C to 75 °C

* Applied for

WEIGHT IN kg

Size	Al/ kg	SS/ kg
II	0.7	0.9
III	0.5	

APPLICATION

EXPLOSION PROOF FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 56 Ex d

POWER

Voltage	Solenoid		Power (VA)						
	Size	Core Dia	0.4②	1.8②	3.5	5	8	13	30
6	II	18		✓			✓	▲	
	III	13	✓						
	III	14			✓		▲		
	IV	14		✓					
12	II	18		✓			✓	▲	✓
	III	13	✓						
	III	14			✓		▲		
	IV	14		✓					
24	II	18		✓			✓	▲	✓
	III	13	✓						
	III	14			✓	✓	▲		
	IV	14		✓					
110-120	II	18					✓	▲	✓
	III	13							
	III	14			✓	✓	▲		
220-240	II	18					✓	▲	✓
	III	14				✓	▲		
256②	II	18					✓	▲	✓
	III	14					▲		

▲ Standard
✓ Optional Available
② Only for DC Current

STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

EXPLOSION PROOF FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 56 Ex d

SOLENOID ORDERING CODE

III-24V-DC-56-H-01

III	24V	DC	56	02
SIZE	VOLTAGE	CURRENT	ENCLOSURE	APPROVAL

SIZE CODE
II
III
IV

6
12
24
110-120
220-240
256

50/60 Hz/DC⑤
DC

CABLE ENTRY(F)	CODE
1/2" NPT (F)	56

MATERIAL	CODE
AL CAST	※①
SS CAST	CO

APPROVAL	CODE
UL, US-CNANDA	02

LC	H	LW5
SPECIAL VERSION	INSULATION	POWER⑥

FEATURE	CODE
NIL	※①
FULLY RECTIFIED	FR⑤
SURGE SUPRESSOR	SS
MANUAL RESET	MR

CLASS	CODE
CLASS H	H①

VA	CODE
▲	※①
0.4	LW0.4
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

NOTE :

① Do not Specify

⑤ Solenoid suitable for 50 Hz/ 60 Hz/ DC current, select special version FR

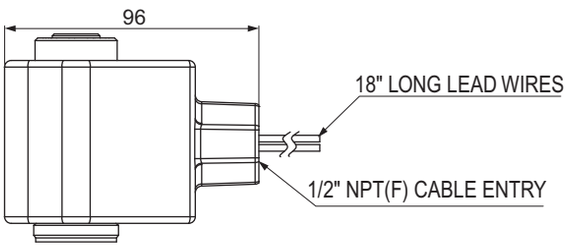
⑥ Refer Power table on page 430A

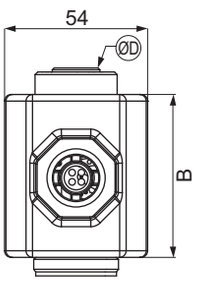
VOLTAGE VARIATION (For Continuous Duty only)

Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V

DIMENSION

SOLENOID TYPE : 56

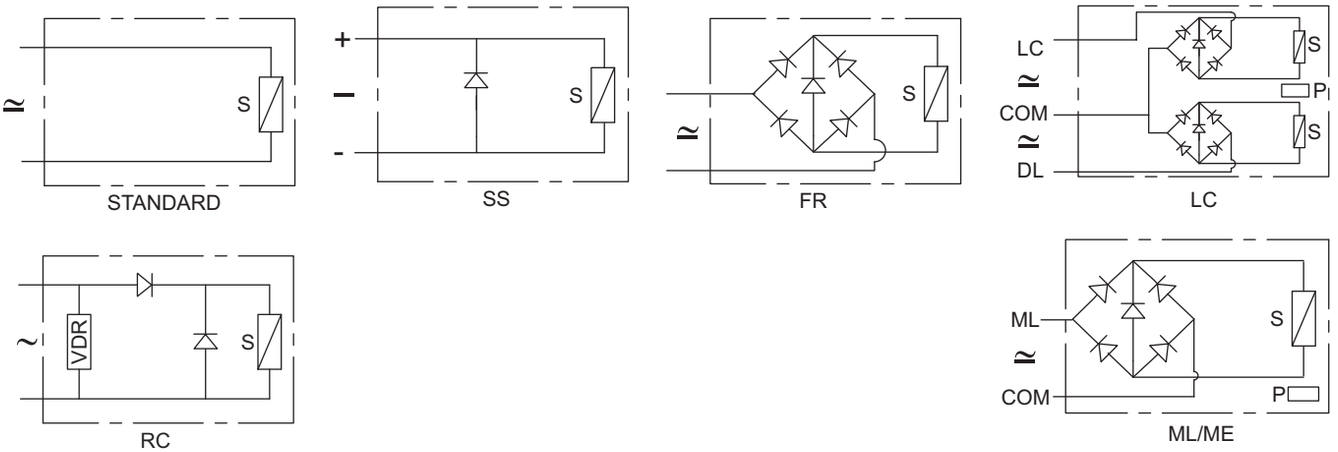




SIZE	B	ØD*
II	61	18
III	47	14
IV	61	14
III	47	13

EXPLOSION PROOF SOLENOID TYPE : 58 & 58-LT Ex emb

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Integrated terminal box having Horizontal cable entry
- Large terminals for easy connections
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- Can in be installed zone 1, 2, 21, 22

SPECIFICATION

Size	I- 14 mm, II- 18 mm, III- 13 mm, III & IV - 14 mm
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 230 V, 256 V
Current	50 Hz, 60 Hz, DC, 50-60Hz DC
Enclosure	**Cable Entry** M25X1.5, Adopted to M20X1.5 or 1/2" NPT **Material** Aluminum Cast, Polyster Powder coated, Colour Black Stainless Steel Cast
Options	Corrosive Enviornment (CO), Manual Reset ON (MR), Manual Reset, OFF (ML), Low Power (LW), Latch (LC), Surge Suppressor(SS), Fully Rectified (FR), Half Rectified (RC)
Power	Refer to table "Power" on page 430E
Insulation Class	Class H
Weather Protection	IP67
Approval	ATEX
Voltage Variation	Refer to Voltage Variation table on page 430F
Duty Cycle	100% (ED)
Ambient Temprature	-60 °C to 70 °C Refer to Marking table on page 430G

WEIGHT IN kg

Size	Al	SS
I	0.5	1.2
II	0.8	1.7
III	0.7	1.4
IV	0.8	1.6

APPLICATION

EXPLOSION PROOF SOLENOID TYPE : 58 & 58-LT Ex emb

POWER

Voltage	Solenoid		Power (VA)							
	Size	Core Dia	1.0②	1.8②	3.5	5	8	12	13	30
6 ②	I	14					▲			
	II	18							▲	
	III	13								
	III	14								
	IV	14								
12	I ⑤	14					▲			
	II	18							▲	
	III	13	✓③							
	III	14		✓③	✓					
	IV	14		✓						
24	I ⑤	14		✓③			▲	▲		
	II	18					✓		▲	✓
	III	13	✓③							
	III	14		✓③	✓	✓	▲			
	IV	14		✓						
48	I ⑤	14					▲			
	II	18							▲	
	III	14					▲			
	IV	14								
110-120	I①⑤	14						▲		
	II	18					✓		▲	✓
	III	14			✓	✓	▲			
220-240	I ①⑤	14						▲		
	II	18					✓		▲	✓
	III	13								
	III	14				✓	▲			
256②	II	18							▲	✓
	III	14					▲			

▲ Standard
✓ Optional Available

① Current 50 Hz or 60 Hz
② Only for DC Current
③ Should be Opted for 3/2 & 5/2 pilot operated valve
④ Current 50 Hz only
⑤ Current 50 Hz, 60Hz or DC

STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

EXPLOSION PROOF SOLENOID TYPE : 58 Ex emb

SOLENOID ORDERING CODE

III-24V-DC-58-CO-SS-LD-LW5

III — SIZE

SIZE CODE
I③
II
III
IV

24V — VOLTAGE

6V
12V
24V
48V
110-120V⑮
220-240V⑮
256V⑮

DC — CURRENT

50Hz
60Hz⑧⑨
50/60Hz/DC④
DC⑮

58 — ENCLOSURE

Ambient Temp.	MATERIAL	CODE
- 40 °C to 70 °C	AL CAST	58
	SS CAST	58CO
- 60 °C to 70 °C	AL CAST	58-LT
	SS CAST	58-LTCO

CABLE ENTRY(F)	CODE
M25X1.5	※ ①
1/2" NPT	NS
M20X1.5	MS

APPROVAL⑯

APPROVAL	CODE
ATEX	01

SS — SPECIAL VERSION

FEATURE 1	CODE
NIL	※①
SURGE SUPPRESSOR	SS
FULLY RECTIFIED	FR
HALF RECTIFIED	RC

LD — SPECIAL VERSION

FEATURE 2	CODE
NIL	※ ①
MANUAL RESET OFF	ML ②
MANUAL RESET ON	MR ②
LED	LD
LATCH	LC ②

LW5 — POWER⑥

VA	CODE
▲	※①
1.0	LW1
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

H — INSULATION

CLASS	CODE
CLASS H	※ ①

NOTE : ① Do not specify

② Voltage 24, 110-120V, 220-240V current 50/ 60 Hz/ DC Power standard size II or III

③ Current 50 Hz/ 60 Hz or DC, Special version FR can not be opted

④ Select special version FR, Size II, III, IV

⑥ Refer Power table on page 430E

⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz

⑨ 220-240V 50 Hz Solenoid can be used for 240V 60 Hz, 220-240V 50 Hz

⑮ Current DC size II, III, IV

⑯ Add SL for SIL capable certified coil

VOLTAGE VARIATION (For Continuous Duty only)

Rated Voltage	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	205V to 280V

APPROVAL

Approval	Certifying Agencies	Reference Number
EUROPEAN/ ATEX	TEKNIKA INSPECIA, a.s.	1408X

MARKING

SOLENOID TYPE 58

Size III 15W Coil	Size III 5W Coil	Size III 8W, Size II 10W Size I 8W, Size II 13W
EX e mb IIC T6 - T4 Gb IP67	EX e mb IIC T6 Gb IP67	EX e mb IIC T6 - T5 Gb IP67
Ex tb IIIC T6 - T4 °C Db IP67	Ex tb IIIC T6 °C Db IP67	Ex tb IIIC T6 - T5 °C Db IP67
-40 °C ≤ Ta ≤ 50 °C for T6	-40 °C ≤ Ta ≤ 70 °C for T6	-40 °C ≤ Ta ≤ 60 °C for T6
-40 °C ≤ Ta ≤ 65 °C for T5		-40 °C ≤ Ta ≤ 70 °C for T5
-40 °C ≤ Ta ≤ 70 °C for T4		

Size II 20W Coil	Size II 8W, Size I 5W, Size IV 11W	Size II 30W Coil
EX e mb IIC T6 - T5 Gb IP67	EX e mb IIC T6 - T5 Gb IP67	Ex e mb IIC T6 - T4 Gb IP67
Ex tb IIIC T6 - T5 °C Db IP67	Ex tb IIIC T6 - T5 °C Db IP67	Ex tb IIIC T6 - T4 °C Db IP67
-40 °C ≤ Ta ≤ 55 °C for T6	-40 °C ≤ Ta ≤ 60 °C for T6	-40 °C ≤ Ta ≤ 40 °C for T6
-40 °C ≤ Ta ≤ 70 °C for T5	-40 °C ≤ Ta ≤ 70 °C for T5	-40 °C ≤ Ta ≤ 55 °C for T5
		-40 °C ≤ Ta ≤ 70 °C for T4

SOLENOID TYPE 58-LT

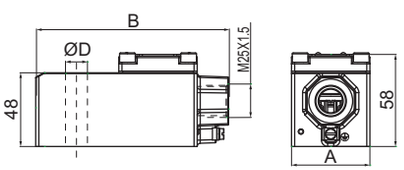
Size III 15W Coil	Size III 5W Coil	Size III 8W, Size II 10W Size I 8W, Size II 13W
EX e mb IIC T6 - T4 Gb IP67	EX e mb IIC T6 Gb IP67	EX e mb IIC T6 - T5 Gb IP67
Ex tb IIIC T6 - T4 °C Db IP67	Ex tb IIIC T6 °C Db IP67	Ex tb IIIC T6 - T5 °C Db IP67
-60 °C ≤ Ta ≤ 50 °C for T6	-60 °C ≤ Ta ≤ 70 °C for T6	-60 °C ≤ Ta ≤ 60 °C for T6
-60 °C ≤ Ta ≤ 65 °C for T5		-60 °C ≤ Ta ≤ 70 °C for T5
-60 °C ≤ Ta ≤ 70 °C for T4		

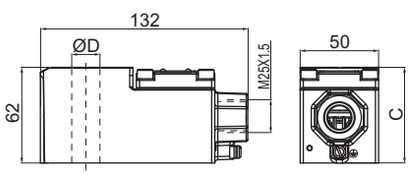
Size II 20W Coil	Size II 8W, Size I 5W, Size IV 11W	Size II 30W Coil
EX e mb IIC T6 - T5 Gb IP67	EX e mb IIC T6 - T5 Gb IP67	Ex e mb IIC T6 - T4 Gb IP67
Ex tb IIIC T6 - T5 °C Db IP67	Ex tb IIIC T6 - T5 °C Db IP67	Ex tb IIIC T6 - T4 °C Db IP67
-60 °C ≤ Ta ≤ 55 °C for T6	-60 °C ≤ Ta ≤ 60 °C for T6	-60 °C ≤ Ta ≤ 40 °C for T6
-60 °C ≤ Ta ≤ 70 °C for T5	-60 °C ≤ Ta ≤ 70 °C for T5	-60 °C ≤ Ta ≤ 55 °C for T5
		-60 °C ≤ Ta ≤ 70 °C for T4

DIMENSION

SOLENOID TYPE : 58, 58-LT

SIZE	A	B	ØD
I	42	116	14
III	51	124	14

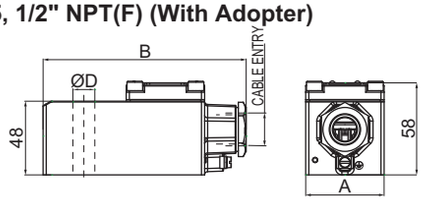


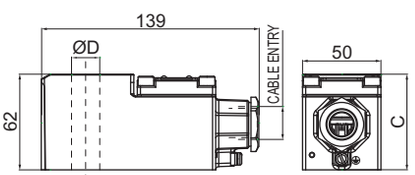


SIZE	C	ØD
II	58	18
IV	58	14

CABLE ENTRY M20X1.5, 1/2" NPT(F) (With Adopter)

SIZE	A	B	ØD
I	42	122	14
III	51	130	14

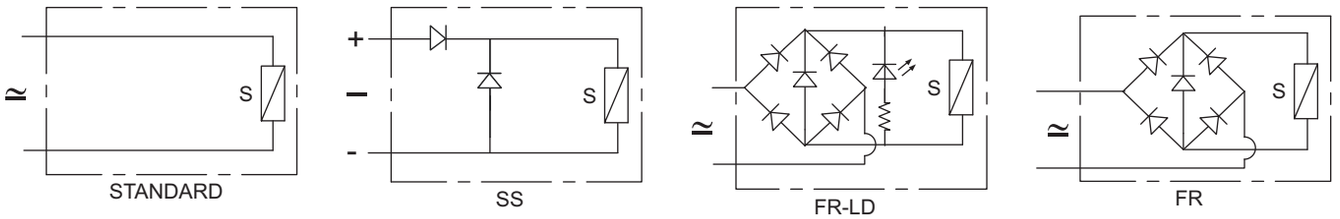




SIZE	C	ØD
II	58	18
IV	58	14

EXPLOSION PROOF JUNCTION BOX SOLENOID (BCE) TYPE : 87 Ex d

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental condition
- Large terminals for easy connections
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation
- Bottom Cable entry to avoid rain or process fluid entering into the termination area.
- For ease of operation and maintenance LED can be provided to confirm avalibility of voltage to the Solenoid terminals
- Dual gasket

SPECIFICATION

Size	II - 18 mm, III - 14 mm, IV - 14 mm	
Voltage	6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 220 V, 256 V	
Current	50 Hz, 60 Hz, DC, 50 Hz/ 60 Hz/ DC	
Enclosure	**Cable Entry**	M25 X 1.5, Adopted to M20 X 1.5 or 1/2" NPT
	Material	Aluminum Cast, Polyester Powder Coat, Colour Blue Stainless Steel Cast
Options	Surge Suppressor (SS), Fully Rectified (FR), LED (LD), Low Power (LW), Menual Reset (MR)	
Power	Refer to table "Power" on page 431A	
Insulation Class	Class H	
Weather Protection	IP67, IP67 M Optionally IP68	
Approval	INDIAN, ATEX, CU-TR, IECEx, CCOE, DGMS ①, SIL	
Voltage Variation	Refer to Voltage Variation table on page 431B	
Duty Cycle	100% (ED)	
Ambient Temprature	Refer to Ambient temperature table on page 429C	

① DGMS applied for

WEIGHT IN kg

Size	Al	SS
II	0.9	1.6
III	0.8	1.4
IV	0.9	1.6

APPLICATION

EXPLOSION PROOF JUNCTION BOX SOLENOID (BCE) TYPE : 87 Ex d

POWER

Voltage	Solenoid		Power (VA)							
	Size	Core Dia	0.4②	1.8②	3.5	5	8	12	13	30
6	II	18					✓		▲	
	III	13	✓							
	III	14		✓	✓	✓	▲			
	IV	14		✓						
12	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓	✓	▲	▲		
	IV	14		✓						
24	II	18					✓		▲	✓
	III	13	✓							
	III	14		✓	✓	✓	▲	▲		
	IV	14		✓						
48	II	18							▲	✓
	III	13								
	III	14		✓	✓	✓	▲	▲		
	IV	14								
110-120	II	18					✓		▲	✓
	III	14				✓	▲	▲		
220-240	II	18					✓		▲	✓
	III	14				✓	▲	▲		
256②	II	18					✓		▲	✓
	III	14					▲			
	IV	14								

▲ Standard
✓ Optional Available
② Only for DC Current
③ Should be Opted for 3/2 & 5/2 pilot operated valves

STANDARD POWER

Size	Current	Standard Power W, VA
I	AC	6, 12
	DC	8, 8
II	AC	13, 13
	DC	13, 13
III	AC	6, 12
	DC	8, 8

EXPLOSION PROOF JUNCTION BOX SOLENOID (BCE) TYPE : 87 Ex d

SOLENOID ORDERING CODE

III-24V-DC-87-CO-SS-LD-LWS-H-07

III — SIZE

SIZE CODE
II
III
IV

24V — VOLTAGE

6V
12V
24V
48V
110V
120V⑧
220V⑨
256V

DC — CURRENT

50Hz
60Hz⑦⑧
50/60 Hz/DC
DC

07 — APPROVAL

APPROVAL	CODE
INDIAN	※①
ATEX	01
INMETRO	03
CU-TR	04
ATEX & IEC Ex	05
DGMS + CCOE	MN
PESO, CCOE	PE

87 — ENCLOSURE

CABLE ENTRY(F)	CODE
M25X1.5	87
1/2" NPT (F)	87NS
M20X1.5	87MS
3/4" NPT (F)	87NL

MATERIAL	CODE
AL CAST, IP67/ IP67 M	※①
SS CAST, IP67/ IP67 M	CO
AL CAST, IP68, INDIAN APPROVAL	A
SS CAST, IP68, INDIAN APPROVAL	A CO

SS — SPECIAL VERSION

FEATURE 1	CODE
NIL	※①
FULLY RECTIFIED	FR⑤
SURGE SUPPRESSOR	SS

LD — SPECIAL VERSION

FEATURE 2	CODE
NIL	※①
LATCH	LC②
MANUAL RESET OFF	ML②
MANUAL RESET ON	MR②
LED	LD

LW5 — POWER⑥

VA	CODE
▲	※①
0.4	LW0.4
1.8	LW2
3.5	LW3.5
5	LW5
8	LW8
15	LW15
20	LW20
30	LW30

INSULATION

CLASS	CODE
CLASS H	※①

NOTE : ① Do not specify

② Voltage 24V, 110-120V, 220-240V current 50-60 Hz/ DC power standard size II or II

⑤ Solenoid suitable for 50 Hz/ 60 Hz/ DC current, Select special version FR

⑥ Refer Power table on page 430A

⑧ 110-120V 50 Hz Solenoid can be used for 110V 50 Hz,120V 60 Hz

⑨ 220-240V Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz

VOLTAGE VARIATION (For Continuous Duty only)

Rated Volatge	Operating Voltage
6	4.8V to 7.2V
12	9.6V to 14.4V
24	19.2V to 28.8V
48	38.4V to 57.6V
110-120	88V to 132V
220-240	176V to 264V
256	192V to 280V

EXPLOSION PROOF JUNCTION BOX SOLENOID (BCE) TYPE : 87 Ex d

MARKING

Temperature Class	Ambient
ATEX, IECEx	
II 2GD Ex d IIC T6 Gb Ex tb IIIC T80 °C Db IP67	- 60 °C < Ta < XX °C
II 2GD Ex d IIC T5 Gb Ex tb IIIC T95 °C Db IP67	- 60 °C < Ta < XX °C
II 2GD Ex d IIC T4 Gb Ex tb IIIC T130 °C Db IP67	- 60 °C < Ta < XXX °C
II 2GD Ex d IIC T3 Gb Ex tb IIIC T155 °C Db IP67	- 60 °C < Ta < XXX °C
INDIAN, DGMS, CCOE	
Ex d IIC T6 Gb Ex tb IIIC T80 °C Db IP67/ IP67 M/IP68	- 60 °C < Ta < XX °C
Ex d IIC T5 Gb Ex tb IIIC T95 °C Db IP67/ IP67 M/IP68	- 60 °C < Ta < XX °C
Ex d IIC T4 Gb Ex tb IIIC T130 °C Db IP67/ IP67 M/IP68	- 60 °C < Ta < XXX °C
Ex d IIC T3 Gb Ex tb IIIC T155 °C Db IP67/ IP67 M/IP68	- 60 °C < Ta < XXX °C
CU-TR	
Ex d IIC T6 IP67 Ex tb IIIC T80 °C Db IP67	- 60 °C < Ta < 70 °C
Ex d IIC T5 IP67 Ex tb IIIC T95 °C Db IP67	- 60 °C < Ta < 70 °C
Ex d IIC T4 IP67 Ex tb IIIC T130 °C Db IP67	- 60 °C < Ta < 100 °C
Ex d IIC T3 IP67 Ex tb IIIC T155 °C Db IP67	- 60 °C < Ta < 100 °C

AMBIENT TEMPERATURE

SIZE	MAX. POWER	MAX. AMBIENT TEMPERATURE °C			
		T6	T5	T4	T3
III	5	65	80	100	
	8	60	75	100	
	15	50	65	100	
II	8	65	80	100	
	13	60	75	100	
	20		45	80	100
	30			60	70
IV	5	70	85	100	
	11	65	80	100	

e.g. (1) Solenoid Size III, Power 8W
ATEX approval II2 GD Ex d
IIC T6 Gb Ex t IIC T80
Db IP67
-60 °C ≤ Ta ≤ 60 °C

(2) Solenoid Size II, Power 30W
as per INDIAN approval
Ex d IIC T3 Gb
Ex t IIC T155 Db IP67
-60 °C ≤ Ta ≤ 70 °C

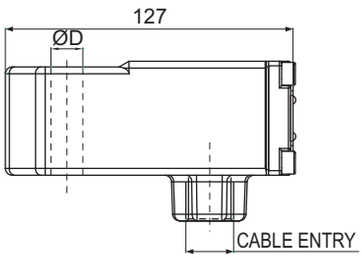
EXPLOSION PROOF JUNCTION BOX SOLENOID (BCE) TYPE : 87 Ex d

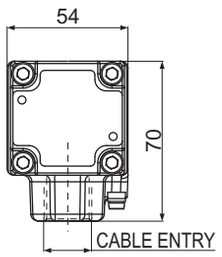
APPROVAL

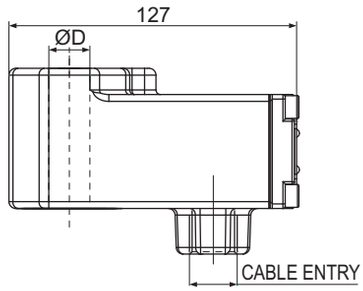
Approval	certifying Agencies	reference Number
INDIAN	KLPL	
BIS		7229976
CCOE/ PESO		
DGMS		
ATEX	DNV	DNV 12 ATEX 112883X
IECEx	DNV	IECEx, DNV 13.0006X
CU-TR		RU C-IN. ГБ08.B.01100

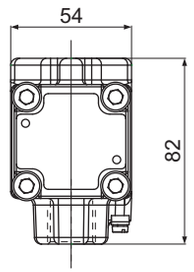
DIMENSION SOLENOID TYPE : 87

CABLE ENTRY M25X1.5





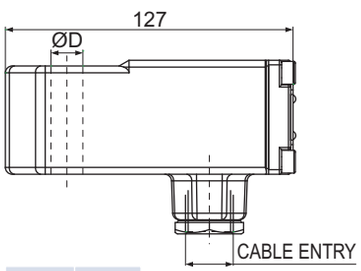


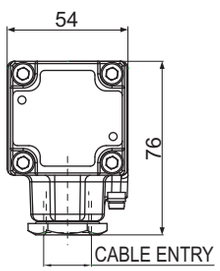


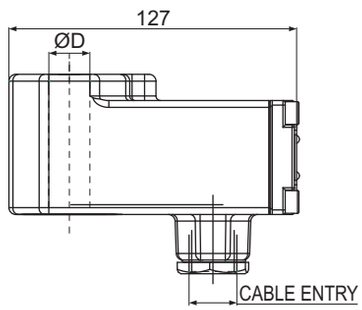
	ØD
III	13
III	14

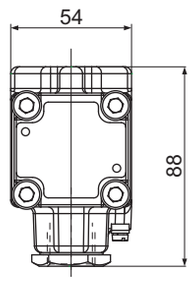
	ØD
II	18
IV	14

CABLE ENTRY M20X1.5, 1/2" NPT(F) (With Adopter)









	ØD
III	13
III	14

	ØD
II	18
IV	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

 Replace Solenoid code 87NS or 87MS along with Guide and Plunger assembly	 Replace Solenoid code 87 or 87MS along with Guide and Plunger assembly	 Solenoid code 39 replace with Solenoid code 87MS		

BARRIER SELECTION

LEGAL CRITERIA

To meet requirement of installing Valves with Intrinsically safe Solenoid in the hazardous location of zone 0,zone 1, or zone 2, Power to the Intrinsically Safe Solenoid has to be supplied through certified Barrier Zener Diode, Solenoid Driver, Remote I/O (Power Source).

For meeting safety, it is essential to select and match entity parameter of Barrier (Power Source) as well as Field Device (Solenoid Valve) being installed in the hazardous environment. Uo, Io, Po, Co, Lo are the Entity Parameters of the Power Source

Ui, Ii, Pi, Ci, Li are the Entity Parameters of the Field Device Ui (Voltage), Ii (Current), Pi (Power), of the solenoid (Field Device) should be more than Uo (Voltage), Io (Current), Po (Power), of the Power Source. i.e. (Ui ≥ Uo, Ii ≥ Io, Pi ≥ Po)

Ci (Capacitance), Li (Inductance) of the field device and Cc (Capacitance), Lc (Inductance) of the Cable should be less than Co (Capacitance), Lo (Inductance) of the Power Source
i.e.(Ci + Cc ≤ Co Li + Lc ≤ Lo)

FUNCTIONAL CRITERIA

Barrier Data

Output Volt @ Zero Current (V_{B0}) : _____ Volt
Output Volt @ Maximum Current (V_{BM}) : _____ Volt
Maximum Output Current (I_B) : _____ mA

Solenoid Data

Minimum Operating Volt (V_C) : _____ Volt
Minimum Operating Current (I_C) : _____ mA

Permissible Cable Length (CL)

Resistance Based

Resistance Based
Maximum Allowable Cable Resistance (R_C) Ohm
$Rc = [V_{B0} – ((V_{B0}-V_{BM}) * I_C / I_B)] * 1000/ I_C$
Allowable Maximum Cable Length (CL_R)should have Resistance ≤ R_C

Capacitance Based

Allowable Capacitance of the Barrier (C_O)
Cable Capacitance (C_C)
Coil Capacitance (C_i) : C_C = 0 (for ROTEX IS Solenoid)
$C_O \geq C_C + C_i$
Allowable Maximum Cable Length (CL_C) should have Capacitance ≤ C_O

Inductance Based

Allowable Inductance of the Barrier (L_B)
Cable Inductance (L_C)
Solenoid Inductance (L_S) : L_S = 0 (for ROTEX IS Solenoid)
$L_O \geq L_C + L_i$

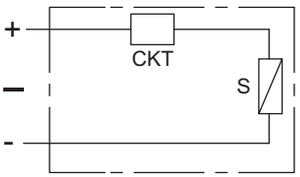
Allowable Maximum Cable Length (CL_L) should have Inductance ≤ L_O

CL should be minimum of CL_R, CL_C, CL_L

CL should be minimum of CL_R, CL_C, CL_L

INTRINSICALLY SAFE SOLENOID WITH CIRCUIT TYPE : 62, 66, 63, 64 Ex ia

CIRCUIT DIAGRAM



Type : 63, 64

FEATURES

- Designed for extreme environmental conditions
- Large terminals for easy connections
- Bottom Cable entry to avoid rain or process fluids entering into the termination area
- Can be adopted for any valve with core tube 14mm

Type : 62, 66

SPECIFICATION

Size	III, IV	
Voltage	24 V	
Current	DC	
Enclosure	**Cable Entry**	M25 X 1.5, Adopted to M20 X 1.5 or 1/2" NPT
	Material	Aluminum Cast, Polyester Powder Coat, Colour Blue Stainless Steel Cast
Options	LED (LD)	
Power	Refer entity & minimum operating parameter on page 432A	
Insulation Class	Class H	
Weather Protection	IP67	
Approval	INDIAN, ATEX, CU-TR, IECEx, CCOE, DGMS ①	
Duty Cycle	100% (ED)	
Ambient Temperature	Refer to marking on page 432C	

① DGMS applied for

WEIGHT IN kg

Type	Al	SS
II	0.9	1.6
III	0.8	1.4
IV	0.9	1.6

APPLICATION

INDOOR OUTDOOR

INTRINSICALLY SAFE SOLENOID WITH CIRCUIT TYPE : 62, 66, 63, 64 Ex ia

MINIMUM OPERATING PARAMETER

Operating Parameter	IS Coil with circuit (Size-III) Coil Type : 66	IS Coil with circuit (Size-IV) Coil Type : 62	IS Coil with cut & LED Type : 66 LD	IS Coil with circuit Type : 62 LD
Minimum Voltage	11 Volt	14 Volt	11 Volt	15 Volt
Minimum Current	20mA	25mA	22 mA	27 mA
Minimum Power	0.22 Watt	0.35 Watt	0.24 Watt	0.40 Watt
LED	No	No	Yes	Yes
Valve Type	2XXXX, 3XXXX, 4XXXX 5XXXX, 3XXX, VB (Except 30308, 30334, 30138 & 30318 etc.)	30318LW1.8 & P3017	2XXXX, 3XXXX, 4XXXX 5XXXX, 3XXX, VB (Except 30308, 30334, 30138 & 30318 etc.)	30318LW1.8 & P3017

ENTITY PARAMETER

Entity Parameter	
Ui	32V DC
Ii	230mA
Pi	2.3W
Ci	0
Li	0

RESPONSE ON TIME

Voltage	10	12	14	18	22	26	30	32
Current mA	17	21	25	33	41	49	57	61
Delay Time in Mili Sec.	2500	1200	1000	100	60	50	50	50

RESPONSE OFF TIME

10mS to 20mS

INTRINSICALLY SAFE SOLENOID WITH CIRCUIT TYPE : 62, 66, 63, 64 Ex ia

SOLENOID ORDERING CODE

III-24V-DC-66-CO-MS-07

III		24V	DC	66	CO		07
SIZE	CODE	VOLTAGE	CURRENT	ENCLOSURE		INSULATION	APPROVAL

SIZE
III

CODE
66
66LD①
63②
64②

24V

DC

CABLE ENTRY(F)	CODE
M25X1.5	66/ 66LD
1/2" NPT	66NS/ 66LD NS/ 63
M20X1.5	66MS/ 66LD MS/ 64
3/4" NPT (F)	66NL/ 66LD NL

MATERIAL	CODE
AL CAST, IP67	※
SS CAST, IP67	CO

CLASS	CODE
CLASS H	※

APPROVAL	CODE
INDIAN	※
ATEX	01
INMETRO	03
CU-TR	04
ATEX & IEC Ex	05
DGMS	MN
PESO	PE

IV-24V DC-62-CO-05

IV		24V	DC	62	CO		05
SIZE	CODE	VOLTAGE	CURRENT	ENCLOSURE		INSULATION	APPROVAL

SIZE
IV

CODE
62
62LD①

24V

DC

CABLE ENTRY(F)	CODE
M25X1.5	62/ 62LD
1/2" NPT (F)	62NS/ 62LD NS
M20X1.5	62MS/ 62LD MS
3/4" NPT (F)	62NL/ 62LD NL

MATERIAL	CODE
AL CAST, IP67	※
SS CAST, IP67	CO

CLASS	CODE
CLASS H	※

APPROVAL	CODE
INDIAN	※
ATEX	01
INMETRO	03
CU-TR	04
ATEX & IEC Ex	05
DGMS	MN
PESO	PE

Note: ① 66LD & 62LD Provided with LED can be supplied with INDIAN, CCOE/ PESO, DGMS approval

② Approval INDIAN/CCOE/PESO/DGMS only

APPROVAL

Solenoid Type : 62, 66

Approval	Certifying Agencies	Reference Number
INDIAN	KLPL	KLPL/Ex/13-022X
	NA	
DGMS	DGMS	232 of 2011
BIS		7560881
CCOE/ PESO	PESO	
EUROPEAN/ ATEX	Baseefa	Baseefa 12 ATEX 0243X
CU-TR		RU C- IN.ГБ08.B.01100
INMETRO		
IECEx	Baseefa	IECEx BAS 12.0128XIssu1

Solenoid Type : 63, 64

Approval	Certifying Agencies	Reference Number
INDIAN	CMRI./ CIMFR	CIMFR/TC/P/H702 & CMRI/TC/SR/H920
	KLPL (Revalidated)	KLPL/Ex/13-022X
BIS		7560881
CCOE/ PESO		
DGMS	DGMS	231 of 2011

MARKING

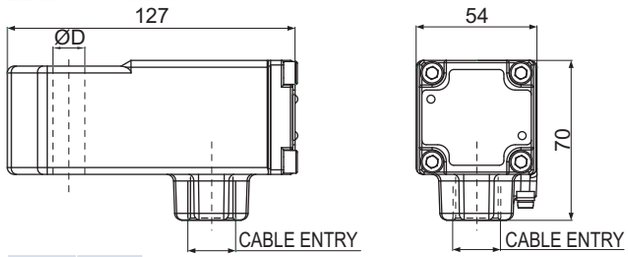
ATEX & IECEx	AMBIENT TEMPERATURE
Ex I M I Ex ia II Ma	- 60 °C ≤ Ta ≤ +75 °C
Ex II 1G Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤ +75 °C
Ex II 1G Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ +60 °C
Ex II 1D Ex ia IIIC T200 125 °C IP67Da	- 60 °C ≤ Ta ≤ +75 °C
INDIAN, PESO/ CCOE, DGMS	(FOR COIL TYPE 63)
Ex ia I/IIC T5, IP67	- 40 °C ≤ Ta ≤ +75 °C
Ex ia I/IIC T6, IP67	- 40 °C ≤ Ta ≤ +60 °C
CU-TR	
Ex ia I or	- 60 °C ≤ Ta ≤ 75 °C
Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤ 75 °C
Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ 60 °C
Ex ia IIIC T_{200} 125 °C Da	

* Only for SS cast enclosure

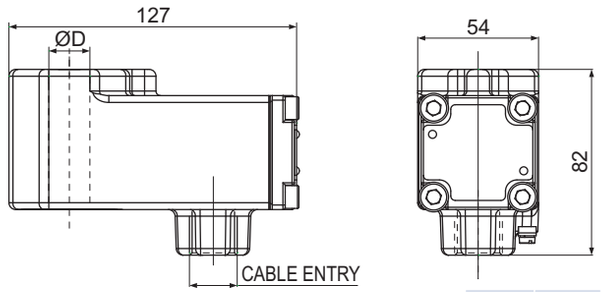
INTRINSICALLY SAFE SOLENOID WITH CIRCUIT TYPE : 62, 66, 63, 64 Ex ia

DIMENSION SOLENOID TYPE : 62, 66

CABLE ENTRY M25X1.5

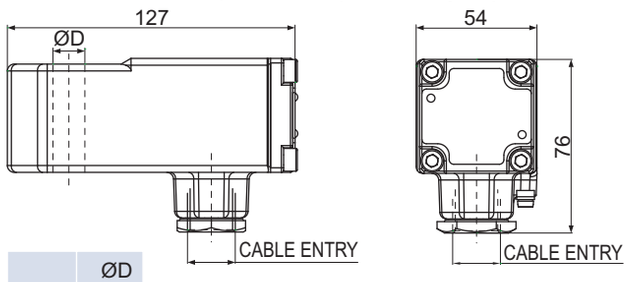


	ØD
III	13
III	14

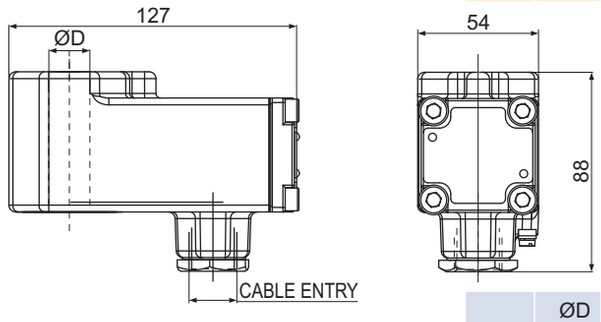


	ØD
II	18
IV	14

CABLE ENTRY M20X1.5, 1/2" NPT (With Adopter)

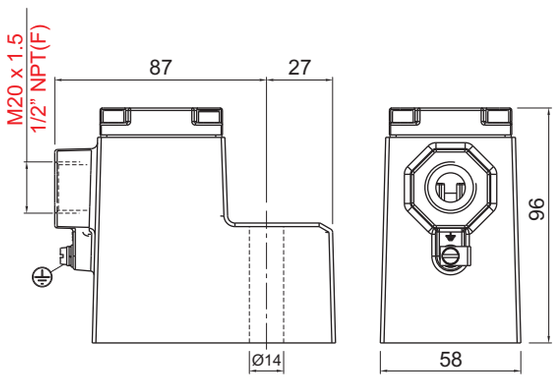


	ØD
III	13
III	14



	ØD
II	18
IV	14

SOLENOID TYPE : 63, 64



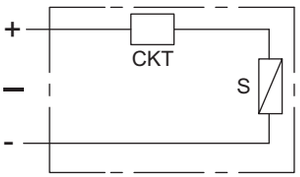
SIZE	B	ØC
III	56	13
I		

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

Replace with Solenoid type 66 along with Guide and pressure assembly	Type : 63, 64, 63-01, 64-01  Replace with Solenoid Type 66			

LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 65 CR Ex ia

CIRCUIT DIAGRAM



FEATURES

- Designed for extreme environmental conditions
- 'O' Energiser for higher magnetic linkage
- DIN Plug provided

SPECIFICATION

Size	III - 13 mm	
Voltage	24 V	
Current	DC	
Enclosure	**Cable Entry**	Pg-9, DINPLUG AS PER DIN 43650A
	Material	Steel chrome plated
Insulation Class	Class H	
Weather Protection	IP67	
Approval	INDIAN, CCOE, DGMS①, GOST R	
Duty Cycle	100% (ED)	

① DGMS applied for

ENTITY PARAMETER

Entity Parameter	
Ui	32V DC
Ii	230mA
Pi	2.3W
Ci	0
Li	0

WEIGHT IN kg

Type	Al/ kg	SS
III	0.37	

APPLICATION

INDOOR OUTDOOR

LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 65 CR Ex ia

SOLENOID ORDERING CODE

III-24V-DC-65CR

III	24V	DC	65CR	1	H
SIZE	VOLTAGE	CURRENT	ENCLOSURE	APPROVAL	INSULATION

SIZE
III

24V

DC

CABLE ENTRY	CODE
PG-9	65CR

APPROVAL	CODE
INDIAN	※
PESO/ CCOE	PE
DGMS, CCOE	MN
GOST R	04
INMETRO	03

CLASS	CODE
CLASS H	※

SOLENOID MARKING

Aluminium, Cast	Satinless Steel, Cast
INDIAN	
Ex ia I/ IIC T5, IP67	- 40 °C ≤ Ta ≤ 75 °C
IEx ia I/ IIC T6 IP67	- 40 °C ≤ Ta ≤ 60 °C

MARKING

GOST R	
1Ex (ia) dIIC T6	- 40 °C to +70 °C

MINIMUM OPERATING PARAMETER

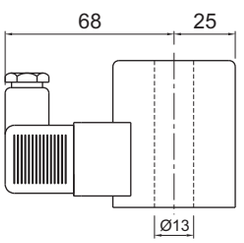
Valve Code I3XXX & I5XXX	Max. Pressure 11bar
Minimum Voltage	14V
Minimum Current	25mA
Minimum Power	0.35W
Valve Code I3XXXEP & I5XXXEP	Max. Pressure 14bar
Response ON	50 ms
Response OFF	30 ms

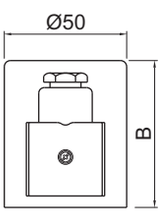
APPROVAL

Approval	Certifying Agencies	Reference Number
INDIAN	KLPL	KLPL/Ex/13-022X
BIS		7560881
CCOE/ PESO*		
DGMS		231 of 2011
GOST R	CIS	РОСС IN.ГБ06.B01292
INMETRO	CEPEL	CEPEL08.1718

DIMENSION

SOLENOID TYPE : 65 CR

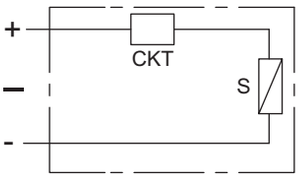




SIZE	B	ØC
III	56	13

LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 67, 71 Ex ia

CIRCUIT DIAGRAM



TYPE 71

TYPE 67

FEATURES

- Designed for extreme environmental conditions
- Large terminals for easy connections
- Constructed for lowest temperature rise thus longer life
- 'O' Energiser for higher magnetic linkage
- Wider voltage variation

SPECIFICATION

Size	III - 13 mm, IV - 14 mm	
Voltage	24 V	
Current	DC	
Enclosure	**Horizontal Cable Entry**	Type 67
	Bottom Cable Entry	Type 71
Cable Entry	M25 X 1.5, Adopted to M20 X 1.5 or 1/2" NPT	
Approval	INDIAN, ATEX, CU-TR, CCOE, DGMS ①, IECEx	
Ambient Temperature	-60 °C to 70 °C	

WEIGHT IN kg

TYPE 67

Size	Al/ kg	SS/ kg
III	0.6	1.4
IV	0.8	1.6

TYPE 71

Size	Al/ kg	SS/ kg
III	0.8	1.4
IV	0.9	1.6

APPLICATION

INDOOR OUTDOOR

LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 67, 71 Ex ia

SOLENOID ORDERING CODE

III-24V-DC-67

III – SIZE – 24V – VOLTAGE – DC – CURRENT – 67 – ENCLOSURE – 1 – APPROVAL – H – INSULATION

SIZE	CODE
	67
III	67
	71
	67LD①
IV	67L
	67LLD①

24V	DC

CABLE ENTRY(F)	CODE
M25X1.5	67/ 67LD
1/2" NPT (F)	67NS/ 67LD NS
M20X1.5	67MS/ 67LD MS

MATERIAL	CODE
AL CAST, IP67	※
SS CAST, IP67	CO

APPROVAL	CODE
INDIAN	※
ATEX	01
INMETRO	03
CU-TR	04
ATEX & IEC Ex	05
DGMS, CCOE	MN
PESO, CCOE	PE

CLASS	CODE
CLASS H	※

IV-24V-DC-71-05

IV – SIZE – 24V – VOLTAGE – DC – CURRENT – 71 – ENCLOSURE – 1 – APPROVAL – H – INSULATION

SIZE	CODE
III	71
	71LD①
	71L
IV	71LLD①

24V	DC

CABLE ENTRY(F)	CODE
M25X1.5	71/ 71LD
1/2" NPT (F)	71NS/ 71LD NS
M20X1.5	71MS/ 71LD MS
3/4" NPT (F)	71NL/ 71LD NL

MATERIAL	CODE
AL CAST, IP67	※
SS CAST, IP67	CO

APPROVAL	CODE
INDIAN	※
ATEX	01
INMETRO	03
CU-TR	04
PESO/ CCOE	PE
ATEX & IEC Ex	05

CLASS	CODE
CLASS F	※
CLASS H	H

Note : ①67LD, 71LD, 67LLD, 71LLD Supplied with LED and can be supplied with INDIAN, CCOE/PESO, DGMS approval

APPROVAL

Type : 67

Approval	Certifying Agencies	Reference Number
INDIAN	CMRI CIMFR	CMRI/TC/SR/H-834
	KLPL ()Revalidated	KLPL/Ex/13-022X
BIS		7560881
CCOE/ PESO		
DGMS	DGMS	231 of 2011
INMETRO	CEPL	CEPL 08.1718
CU-TR		RU C- IN.ГБ08.B.01100
ATEX	Baseefa	Baseefa12ATEX0243X
IECEx	Baseefa	IECEx BAS 12.0128X

Type : 71

Approval	Certifying Agencies	Reference Number
INDIAN	KLPL Revalidated	KLPL/Ex/13-022X
BIS		7560881
CCOE/ PESO*		
DGMS*		
CU-TR		RU C- IN.ГБ08.B.01100
ATEX	Baseefa	Baseefa12ATEX0243X
IECEx	Baseefa	IECEx BAS 12.0128X

LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 67, 71 Ex ia

ENTITY PARAMETER

Entity Parameter	
Ui	32V
Ii	230mA
Pi	2.3W
Ci	0
Li	0

MINIMUM OPERATING PARAMETER

Operating Parameter	VALVE TYPE I3XXX & I5XXX, Pressure Maximum 11 kg/ cm2				VALVE TYPE I3XXXEP & I5XXXEP Pressure Maximum 8 kg/ cm2			
	Solenoid Code				Solenoid Code			
	67	67LD	67L	67LLD	67	67LD	67L	67LLD
Minimum Voltage	14V	14V	CONTACT ROTEX		11V	11V	CONTACT ROTEX	
Minimum Current	25mA	28mA			19mA	22mA		
Minimum Power	0.35W	0.39W			0.21W	0.24W		
LED	NO	YES	NO	YES	NO	YES	NO	YES
Response ON	60 ms							
Response OFF	40 ms							

Operating Parameter	VALVE TYPE I3XXX & I5XXX, Pressure Maximum 11 kg/ cm2				VALVE TYPE I3XXXEP & I5XXXEP Pressure Maximum 8 kg/ cm2			
	Solenoid Code				Solenoid Code			
	71	71LD	71L	71LLD	71	71LD	71L	71LLD
Minimum Voltage	14V	14V	CONTACT ROTEX		11V	11V	CONTACT ROTEX	
Minimum Current	25mA	28mA			19mA	22mA		
Minimum Power	0.35W	0.39W			0.21W	0.24W		
LED	NO	YES	NO	YES	NO	YES	NO	YES
Response ON	60 ms							
Response OFF	40 ms							

MARKING

Solenoid Type : 67, 67LD

	Ambient Temperature
ATEX & IECEx	
I M1 Ex ia II Ma*	- 60 °C ≤ Ta ≤ 75 °C
II 1G Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤ 75 °C
II 1G Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ 60 °C
II 1D Ex ia IIIC T200 125 °C Da IP67	- 60 °C ≤ Ta ≤ 75 °C
INDIAN, DGMS,CCOE/ PESO	
Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤ 75 °C
Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ 60 °C
CU-TR	
Exia I	- 60 °C to +75 °C
Ex ia IIC T5	- 60 °C to +75 °C
Ex ia IIC T6	- 60 °C to +75 °C
Ex ia IIIC T200 125 °C Da IP67	- 60 °C ≤ Ta ≤ 75 °C

* Only for SS cast enclosure

Solenoid Type : 71, 71LD

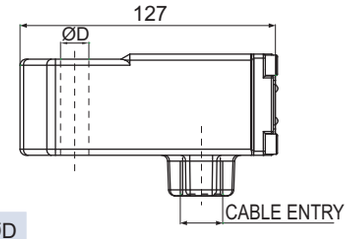
	Ambient Temperature
ATEX & IECEx	
I M1 Ex ia II Ma*	- 60 °C ≤ Ta ≤ 75 °C
II 1G Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤75 °C
II 1G Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ 60 °C
II 1D Ex ia IIIC T200 125 °C Da IP67	- 60 °C ≤ Ta ≤ 75 °C
INDIAN, DGMS,CCOE/ PESO	
Ex ia IIC T5 Ga	- 60 °C ≤ Ta ≤ 75 °C
Ex ia IIC T6 Ga	- 60 °C ≤ Ta ≤ 60 °C
CU-TR	
Exia I	- 60 °C to +75 °C
Ex ia IIC T5	- 60 °C to +75 °C
Ex ia IIC T6	- 60 °C to +75 °C
Ex ia IIIC T200 125 °C Da IP67	- 60 °C ≤ Ta ≤ 75 °C

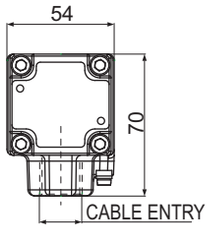
* Only for SS cast enclosure

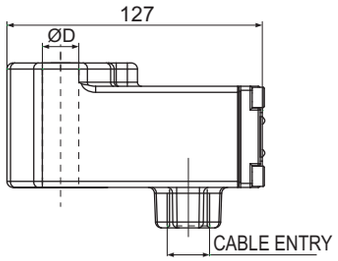
LOW POWER INTRINSICALLY SAFE SOLENOID TYPE : 67, 71 Ex ia

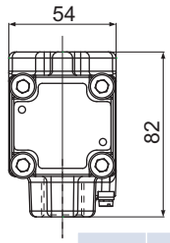
DIMENSION SOLENOID TYPE : 71

CABLE ENTRY M25X1.5





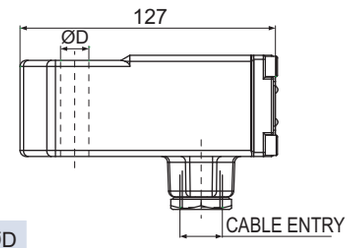


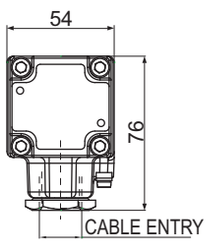


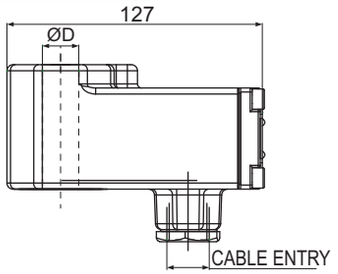
	ØD
III	13
III	14

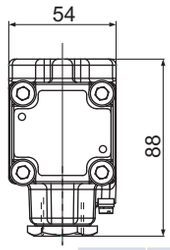
	ØD
II	18
IV	14

CABLE ENTRY M20X1.5, 1/2" NPT (With Adopter) **SOLENOID TYPE : 71**





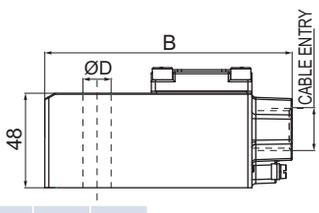


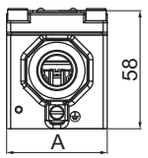


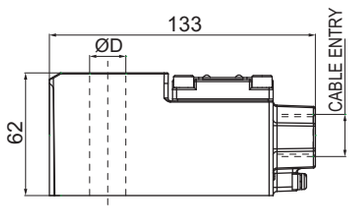
	ØD
III	13
III	14

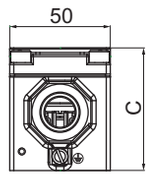
	ØD
II	18
IV	14

CABLE ENTRY M20X1.5 **SOLENOID TYPE : 67**





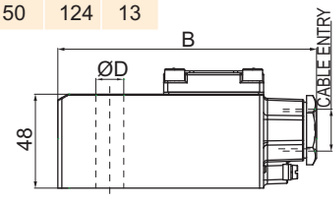


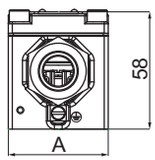


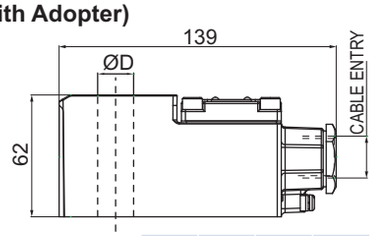
SIZE	A	B	ØD
I	42	116	14
III	50	124	14
III	50	124	13

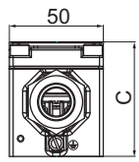
SIZE	C	ØD
II	61	18
IV	51	14

CABLE ENTRY M20X1.5 & 1/2" NPT (With Adopter)









SIZE	A	B	ØE
I	42	122	14
III	50	130	14
III	50	130	13

SIZE	C	ØD
II	61	18
IV	51	14

OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

	 Coil Type 72 & 73 is been Replaced by 67 & 71			