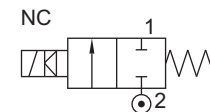


## 2/2 NORMALLY CLOSED, HIGH PRESSURE (400 bar) SOLENOID VALVE

| TYPE | PRESSURE |
|------|----------|
|      |          |
|      |          |
|      |          |

| TYPE | PRESSURE |
|------|----------|
|      |          |
|      |          |
|      |          |

| TYPE  | PRESSURE    |
|-------|-------------|
| 21109 | 5 - 400 bar |
|       |             |
|       |             |

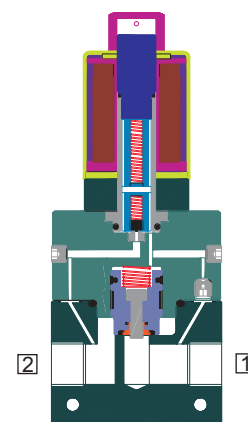


### FEATURES

- Bubble tight shut off
- Mounts in any position
- Vibration resistance up to 9g
- Suitable for high speed cycling
- Speed up to 200 cycles/ min
- Life > 5 million cycles

### WETTED PARTS

|                    |                     |            |
|--------------------|---------------------|------------|
| Code               |                     | <b>B13</b> |
| Body               |                     | <b>CF8</b> |
| Internals          | Brass and SS 316    | SS 316     |
| Guide Assembly     | SS 304              |            |
| Shadow-Ring        | None                |            |
| Plunger, Insert    | SS 430              |            |
| Spring             | SS 302              |            |
| Seat, Seals        | PTFE, Viton         |            |
| Fasteners          | SS 304              |            |
| External Fasteners | High Strength Steel |            |



### AMBIENT AND FLUID TEMPERATURE

-20 °C to 80 °C

### SPECIAL VERSION AND SUFFIX

Suffix : (Valve) AM

Special versions : (Solenoid) CO, FR, SS, LC, TM

### MEDIA

Air, Inert Gases, Water, Free Flowing Liquids, Oil, Diesel, Kerosene, LPG, CNG

### APPLICATION

Fuel line Cut OFF, Priority panel, Dispensing

### PORT CONNECTION

| FUNCTION | INLET | OUTLET |
|----------|-------|--------|
| NC       | 1     | 2      |

Contact Rotex for

- Any other ambient, fluid temperature, media and application



### 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, Guide Assembly, Piston Kit | 99   |
| Solenoid Kit : Solenoid, Gasket and Nut                                       | 34   |

### APPROVAL

(\* applied for)

| Approval | TYPE 4X, 6P | IP67 | Ex d IIC T4 or T5 or T6 IP66 | Ex ia IIC T6 IP67 | DGMS | CCOE |
|----------|-------------|------|------------------------------|-------------------|------|------|
|          |             | ✓    | ✓                            | ✓                 | ✓    | ✓    |
| CE       |             | ✓    | ✓                            | ✓                 |      |      |
| UL       | ✓           |      | *                            |                   |      |      |
|          |             |      | ✓                            | ✓                 |      |      |
| EAC      |             |      | ✓                            | ✓                 |      |      |
|          |             |      | ✓                            | ✓                 |      |      |



# 2/2 NORMALLY CLOSED, HIGH PRESSURE (400 bar) SOLENOID VALVE

## SPECIFICATION

| PORT CONNECTION |        |        | PRE-SSURE bar |         | 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 |
|-----------------|--------|--------|---------------|---------|--------------|--|------------|----------------|-----------------------------|----------------|-------|-------------|-----|-------|-------|--------|------|-----|-----------------------|-----------------|-------------|--------------------|-------------------|-------------------|---------------------------|-----------------|---------------|----------|--------|-------------------------------|
| SIZE            | BSP(F) | NPT(F) | MINIMUM       | MAXIMUM |              |  |            |                | ALUMINIUM                   | ALUMINIUM + SS | BRASS | SS 316/ CF8 | 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 |                               |

### 2/2 NORMALLY CLOSED

|      |    |    |   |     |    |    |       |  |  |  |  |  |   |  |   |  |  |  |    |   |   |    |   |    |    |    |     |
|------|----|----|---|-----|----|----|-------|--|--|--|--|--|---|--|---|--|--|--|----|---|---|----|---|----|----|----|-----|
| 1/4" | 2G | 2R | 5 | 400 | 12 | 60 | 21109 |  |  |  |  |  | * |  | * |  |  |  | 25 | T | E | 18 | ✓ | 20 | 20 | 20 | 100 |
| 3/8" | 3G | 3R | 5 | 400 | 12 | 60 | 21109 |  |  |  |  |  | * |  | * |  |  |  | 25 | T | E | 18 | ✓ | 20 | 20 | 20 | 100 |
| 1/2" | 4G | 4R | 5 | 400 | 12 | 60 | 21109 |  |  |  |  |  | * |  | * |  |  |  | 25 | T | E | 18 | ✓ | 20 | 20 | 20 | 100 |

6

### SOLENOID 18

| Cable Entry | T  | ÖcA   | E  | ÖcA   | a        |
|-------------|----|-------|----|-------|----------|
| M20 x 1.5   | FJ | iiTÜ  | HU | iiTÜ  | iiSVTÜ   |
| M25 x 1.5   | F  | ii    |    | ii    | iiSv     |
| 1/2" NPT    | F  | ii bÜ | H  | ii bÜ | ii Sv bÜ |

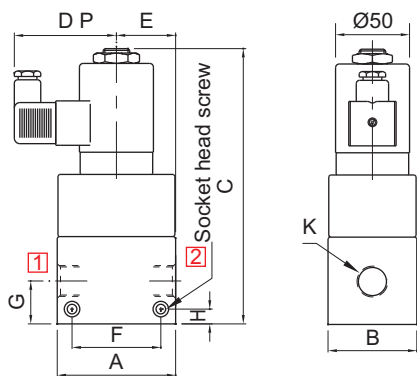
\* = Do not specify when opted for. Refer Page # 22 for Value of \*  
 ✓ = Options available

## ORDERING CODE AND EXAMPLE VALVE + SOLENOID

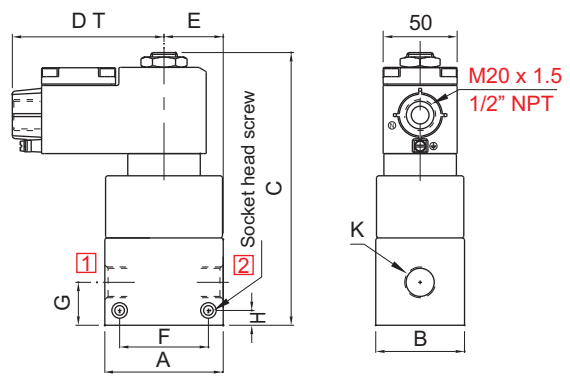
TYPE - SUFFIX - ORIFICE - PORT CONNECTION - BODY AND INTERNALS - SEAL +  
 SIZE - VOLTAGE - CURRENT - SOLENOID ENCLOSURE - APPROVAL - INSULATION - SPECIAL VERSION  
 e.g. 21109-12-4G+220V 50Hz-39

## DIMENSIONS

All Dimensions are in mm



SQ. PLUG IN SOLENOID TYPE 25



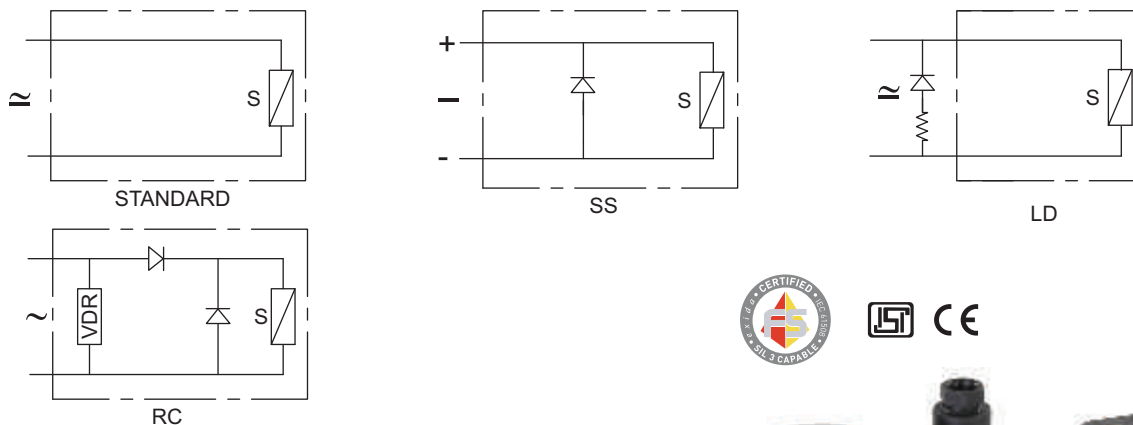
TERMINAL BOX/Ex d, TYPE 16, 19, 37, 39, 58, 58LT, LC

| NW                 | K (PORT SIZE) | A  | B  | C   | DP | DT  | E  | F  | G  | H  | J  | CONST. REF. |
|--------------------|---------------|----|----|-----|----|-----|----|----|----|----|----|-------------|
| VALVE TYPE : 21109 |               |    |    |     |    |     |    |    |    |    |    |             |
| 12                 | 1/4"          | 80 | 60 | 180 | 68 | 103 | 30 | 60 | 29 | 10 | M6 | 100         |
| 12                 | 3/8"          | 80 | 60 | 180 | 68 | 103 | 30 | 60 | 29 | 10 | M6 | 100         |
| 12                 | 1/2"          | 80 | 60 | 180 | 68 | 103 | 30 | 60 | 29 | 10 | M6 | 100         |



# DIN PLUG IN SOLENOID TYPE : 22, 25

## 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
- DIN Plug supplied with Solenoid

## SPECIFICATION

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

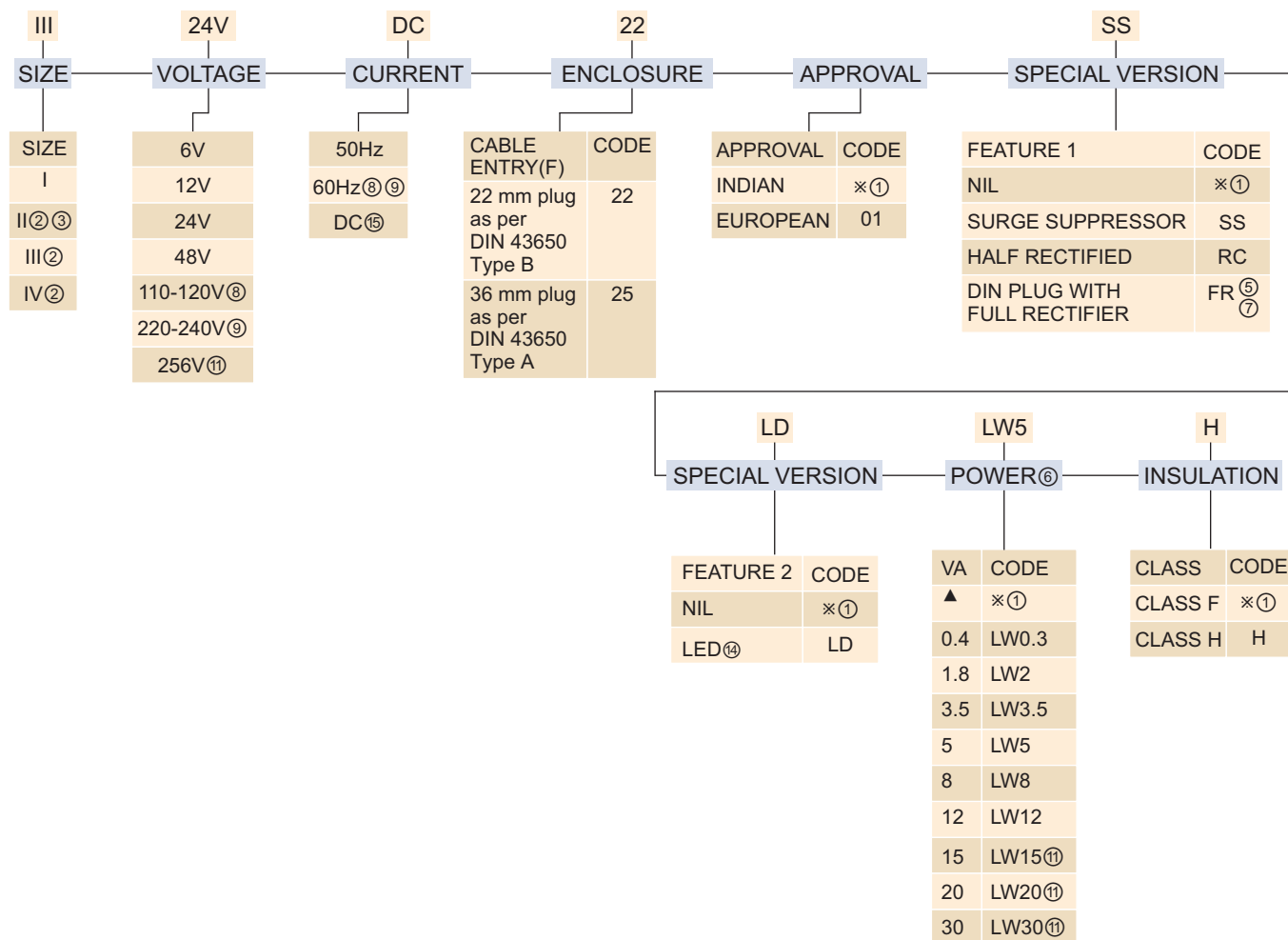
## STANDARD POWER

| 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
  - ④ 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
  - ⑤ Refer Power table on page 425A
  - ⑥ 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
  - ⑩ Select Special version PR for current 50 Hz or 60 Hz
  - ⑪ Voltage 24, 110, 220V current 50 Hz, 60 Hz, DC, LED provided in DIN plug
  - ⑫ 110-120V, 220-240V, current DC, size II, III

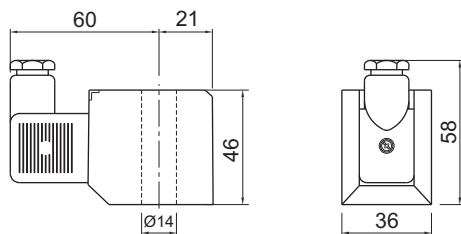
## VOLTAGE VARIATION (For Continuous Duty only)

| 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

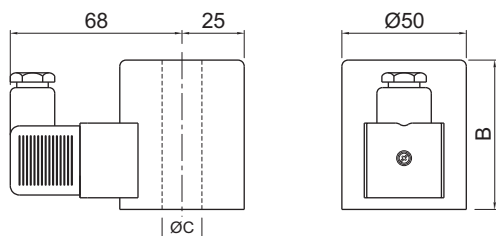
### DIMENSION SOLENOID TYPE : 22

Plug as per DIN 43650 Type B





### SOLENOID TYPE : 25

Plug as per DIN 43650 Type A



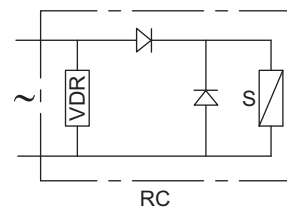
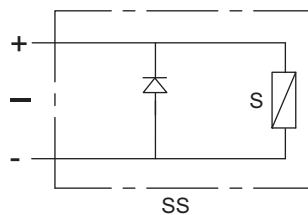
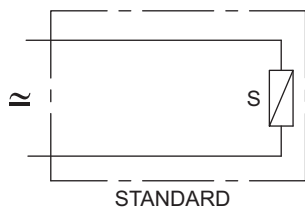
| SIZE | ØC | B  |
|------|----|----|
| III  | 13 | 43 |
| II   | 18 | 60 |
| IV   | 14 | 60 |
| III  | 14 | 43 |

## OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

|  |   |  |  |  |
|--|---|--|--|--|
|  <p>Replace with Solenoid code 22 or 25 along with Guide &amp; Plunger Assembly</p> |  <p>Replace with Solenoid coil code 22</p> |  |  |  |
|--|---|--|--|--|

## 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

|                            |   |
|----------------------------|---|
| <b>Size</b>                | I-14 mm, II-18 mm, III-14 mm  |
| <b>Voltage</b>             | 6 V, 12 V, 24 V, 48 V, 110 V, 120 V, 220 V                              |
| <b>Current</b>             | 50 Hz, 60 Hz, DC  |
| <b>Enclosure</b>           | <b>Cable Entry</b> Flying Leads<br><b>Material</b> Steel, Chrome Plated |
| <b>Options</b>             | Surge Suppressor(SS)  |
| <b>Power</b>               | Refer to table "Power" on page 426A                                     |
| <b>Insulation Class</b>    | Class F optionally Class H  |
| <b>Weather Protection</b>  | IP54, Optionally IP67   |
| <b>Approval</b>            | Indian  |
| <b>Voltage Variation</b>   | Refer to Voltage Variation table (on page 426B)                         |
| <b>Duty Cycle</b>          | 100% (ED)   |
| <b>Ambient Temperature</b> | -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 | I <sup>①</sup> | 14       |            |  |  |  |   | ▲  |    |
|         | II             | 18       |            |  |  |  |   |    | ▲  |
|         | III            | 14       |            |  |  |  | ▲ |    |    |
| 220-240 | I <sup>①</sup> | 14       |            |  |  |  |   | ▲  |    |
|         | II             | 18       |            |  |  |  |   |    | ▲  |
|         | III            | 14       |            |  |  |  | ▲ |    |    |

▲ Standard

✓ Optional Available

① Select Current 50 Hz or 60 Hz

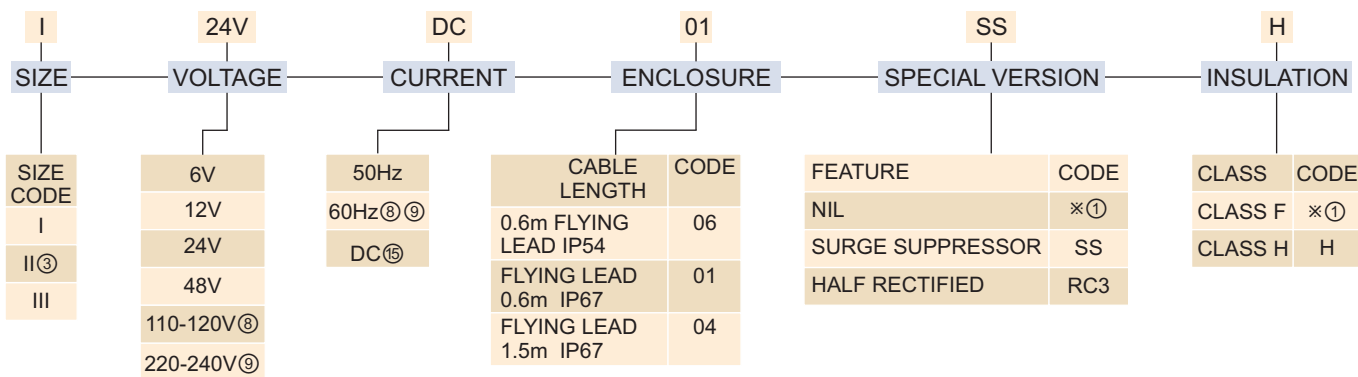
### STANDARD POWER

| 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

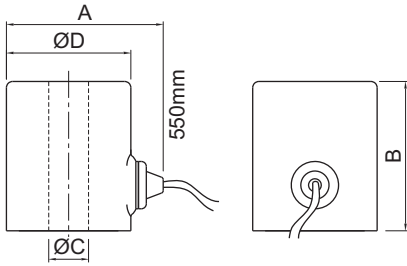
### VOLTAGE VARIATION (For Continuous Duty only)

| 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**



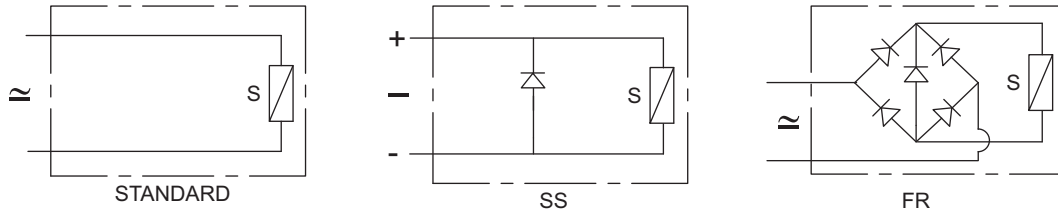
| SIZE | A  | B  | $\varnothing C$ | $\varnothing D$ |
|------|----|----|-----------------|-----------------|
| I    | 56 | 42 | 14              | 42              |
| II   | 64 | 60 | 18              | 50              |
| III  | 63 | 43 | 14              | 50              |

**OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY**

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

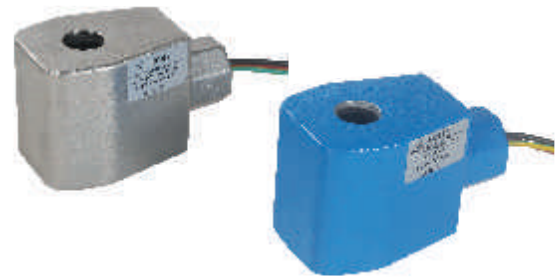
# FLYING LEAD WITH CABLE ENTRY SOLENOID TYPE : 08

## 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

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



INDOOR



OUTDOOR

## 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

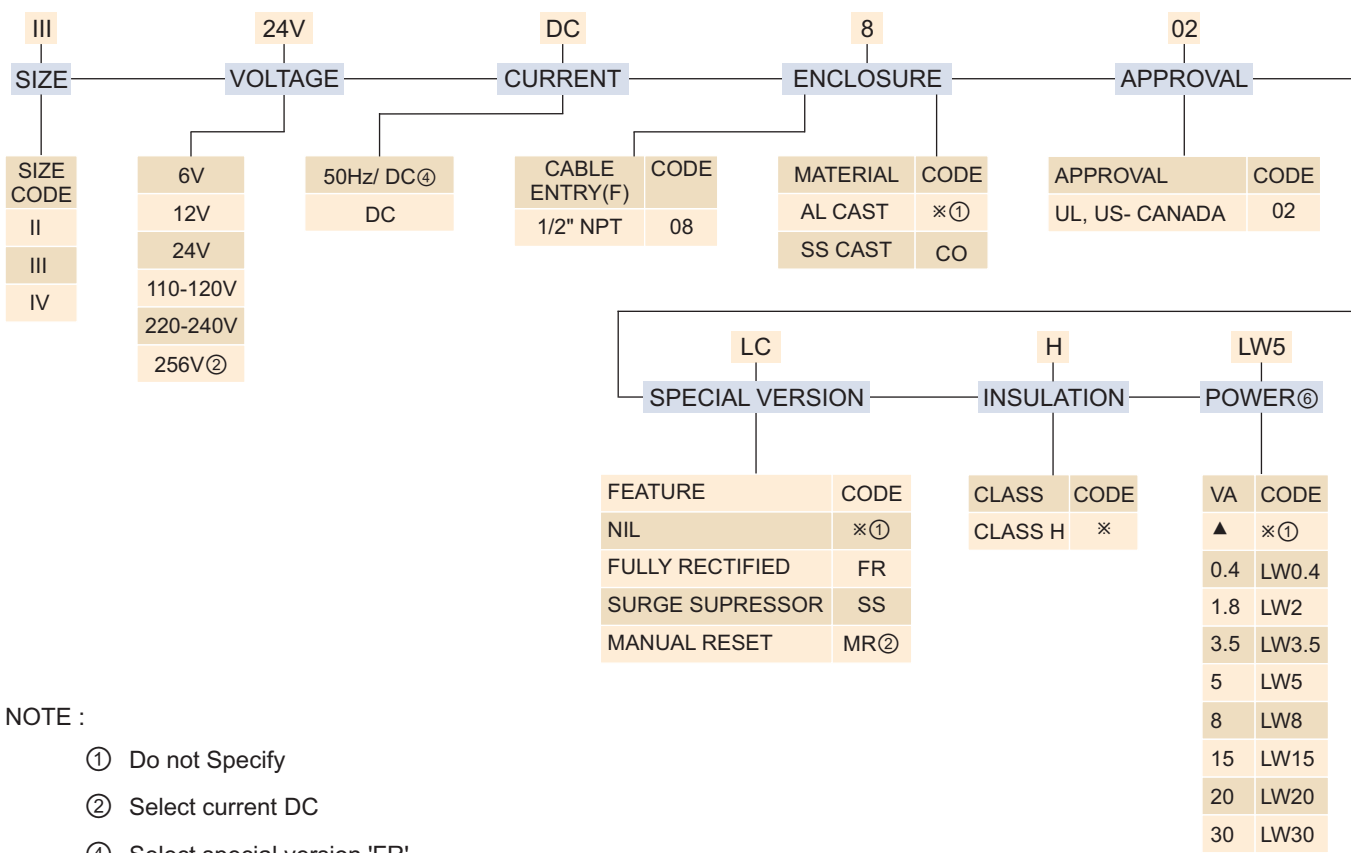
② Select Current DC

### 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



**NOTE :**

- ① Do not Specify
- ② Select current DC
- ④ Select special version 'FR'
- ⑥ Refer Power table on page 427A

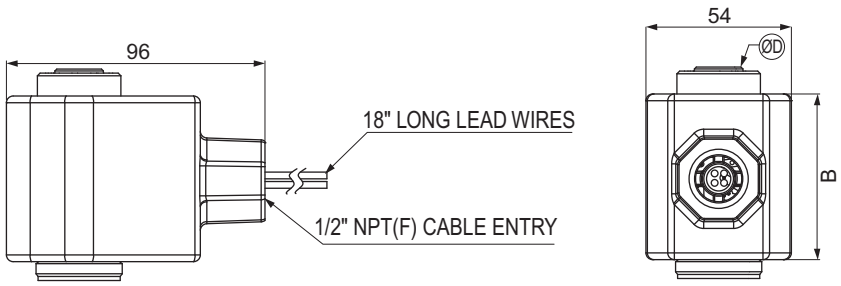
### VOLTAGE VARIATION (For Continuous Duty only)

| 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**



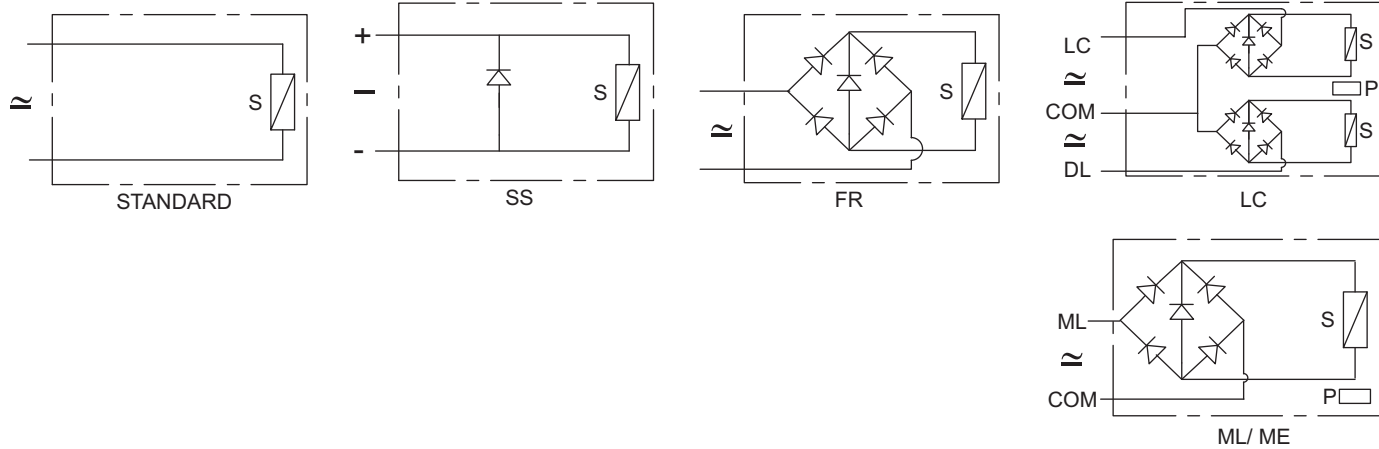
| SIZE | B  | ØD* |
|------|----|-----|
| II   | 61 | 18  |
| III  | 47 | 14  |
| IV   | 61 | 14  |

**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

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



INDOOR



OUTDOOR

# 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

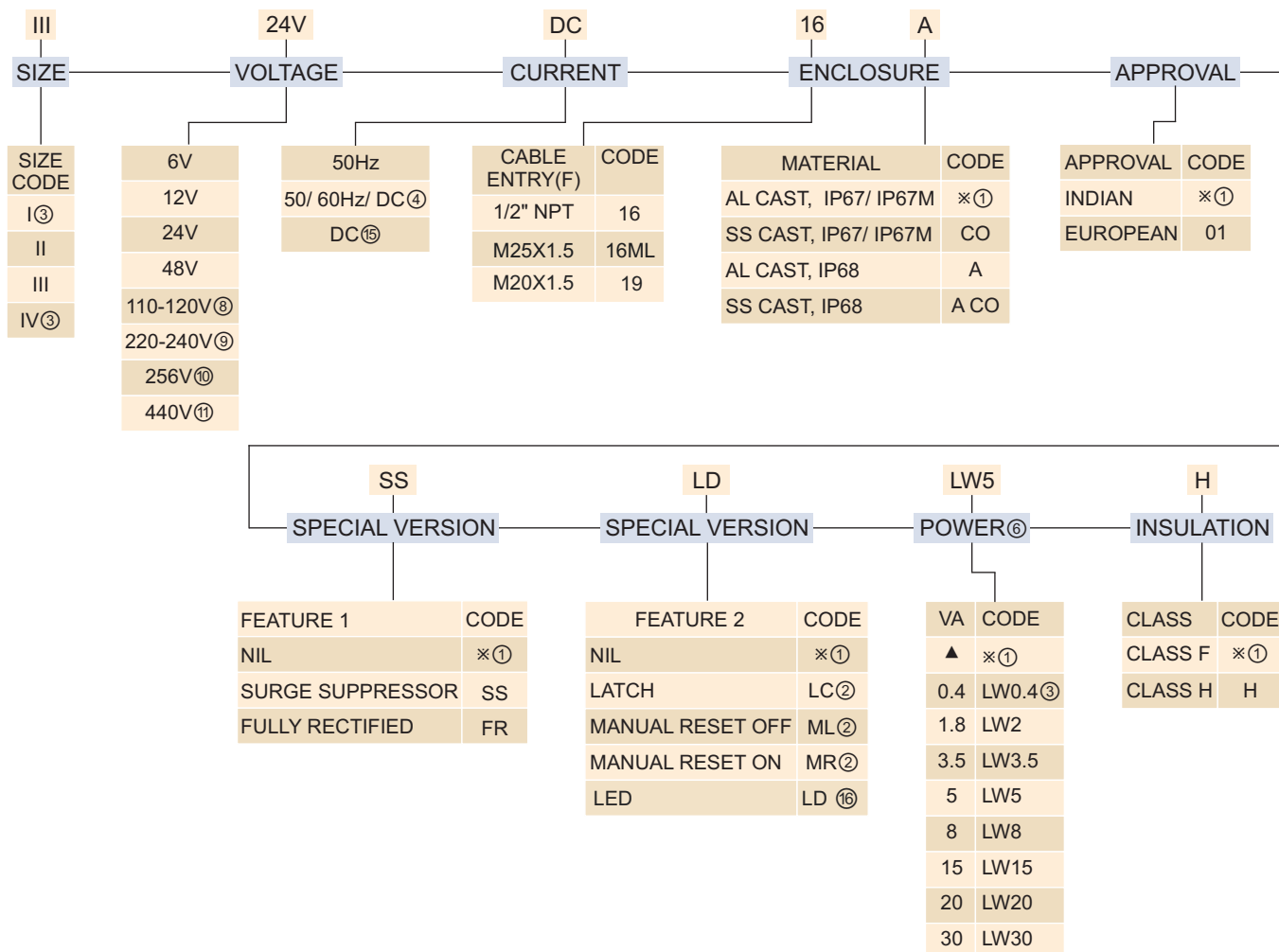
| Size | Current | Standard Power W, VA |
|------|---------|----------------------|
| I    | AC      | 6, 12                |
|      | DC      | 8, 8                 |
| II   | AC      | 13, 13               |
|      | DC      | 13, 13               |
| III  | AC      | 6, 12                |
|     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



# TERMINAL BOX SOLENOID TYPE : 16, 19

## SOLENOID ORDERING CODE

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



NOTE : <sup>①</sup> Do not specify

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

<sup>③</sup> Current 50/ 60 Hz/ DC Special version FR can not be opted

<sup>④</sup> Select Option FR for 50/ 60 Hz/ DC current

<sup>⑥</sup> Refer Power table on page 428A

<sup>⑧</sup> 110-120V 50 Hz Solenoid can be used for 110V 50 Hz, 120V 60 Hz

<sup>⑨</sup> 220-240V Solenoid can be used for 220-240V 50 Hz, 240V 60 Hz

<sup>⑩</sup> Only for DC current

<sup>⑪</sup> Current 50 Hz, Size III

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

<sup>⑯</sup> 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      |

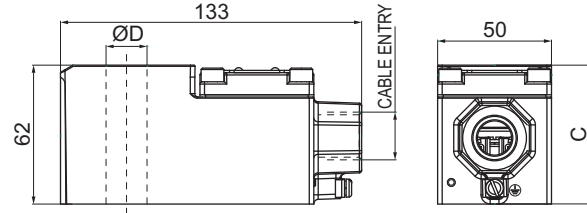
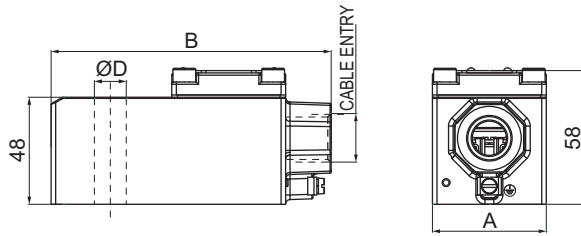


# TERMINAL BOX SOLENOID TYPE : 16, 19

## DIMENSION SOLENOID TYPE : 16

### CABLE ENTRY M20X1.5

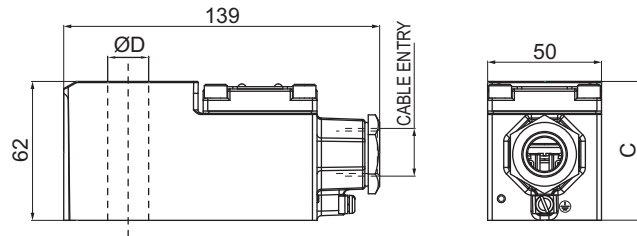
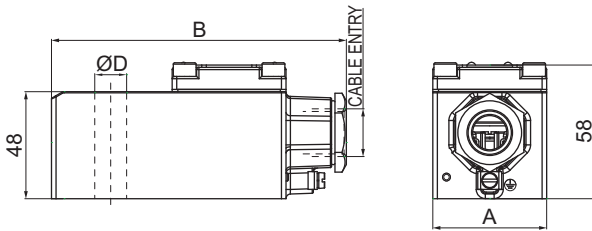
**CABLE ENTRY**  
Include drwg. with adopter  
16 MS  
16



| 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 |

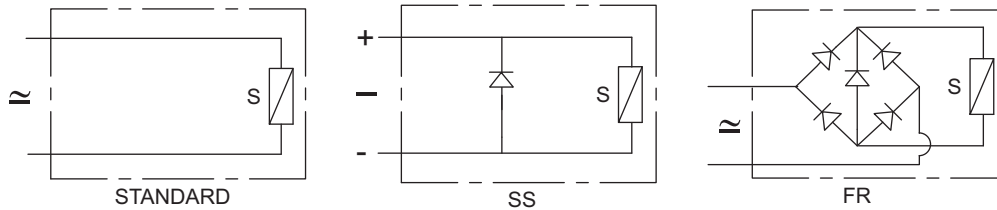
| SIZE | C  | ØD |
|------|----|----|
| II   | 61 | 18 |
| IV   | 51 | 14 |

## OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

|  |   |  |  |  |
|--|---|--|--|--|
|  <p>Replace with Solenoid code 16 or 16MS along with Guide and Plunger assembly</p> |  <p>Solenoid Type 19<br/>Replace with coil code 16MS</p> |  |  |  |
|--|---|--|--|--|

# 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 availability of voltage to the coil terminals
- UL Listed, file number E342217
- Dual gasket for better weather proof protection

UL



## SPECIFICATION

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



INDOOR



OUTDOOR

## 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

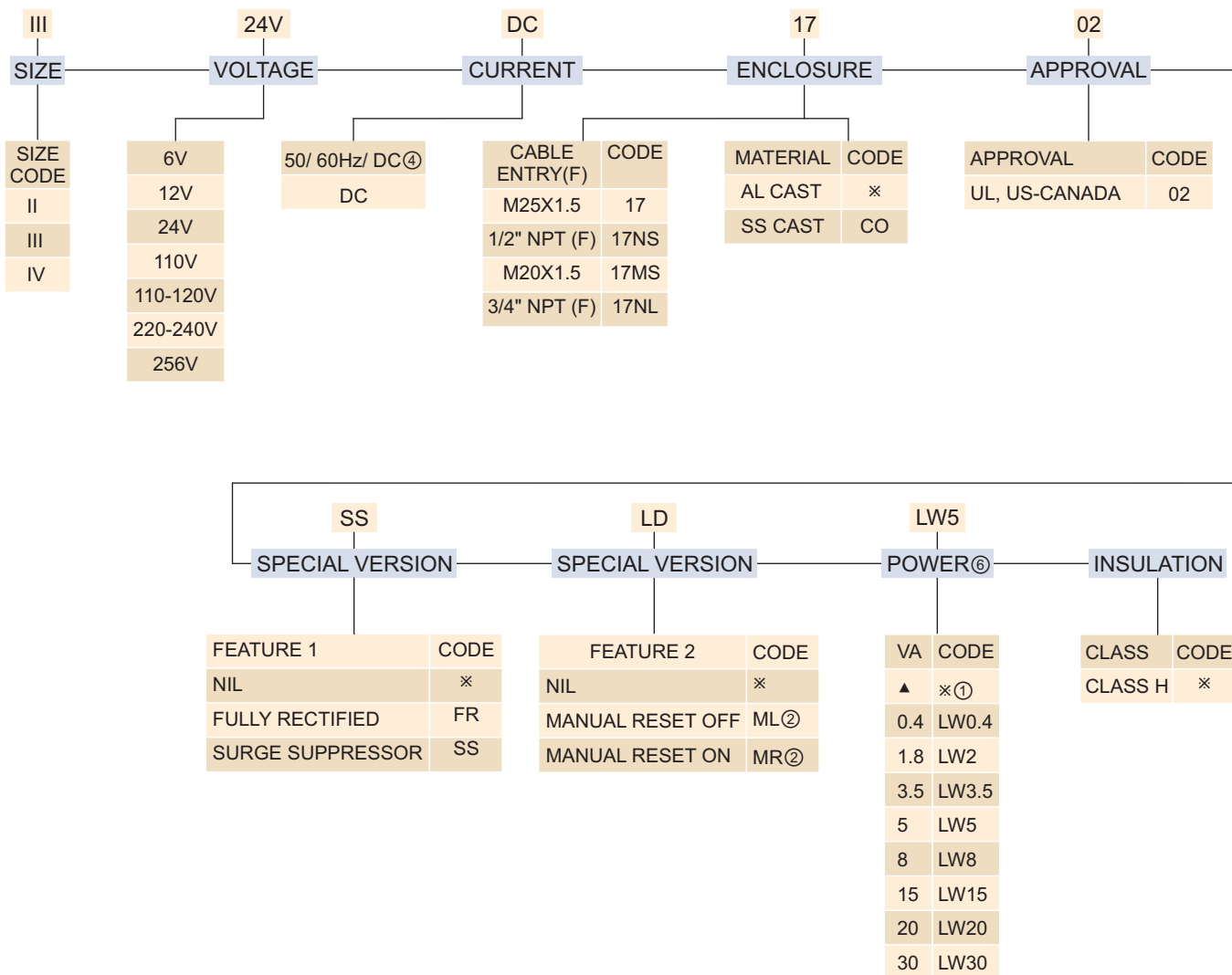
### STANDARD POWER

| 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



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



TYPE  
3, 3R, 3S, 4, 4X, 6 & 6P

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

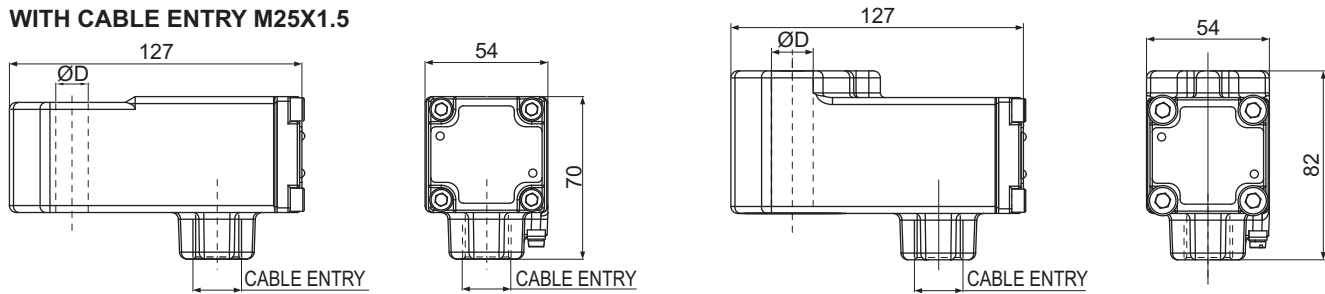
SR. NO. : 15100100 - 07/14-081

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

DUTY CYCLE : CONTINUOUS

## DIMENSION SOLENOID TYPE : 17

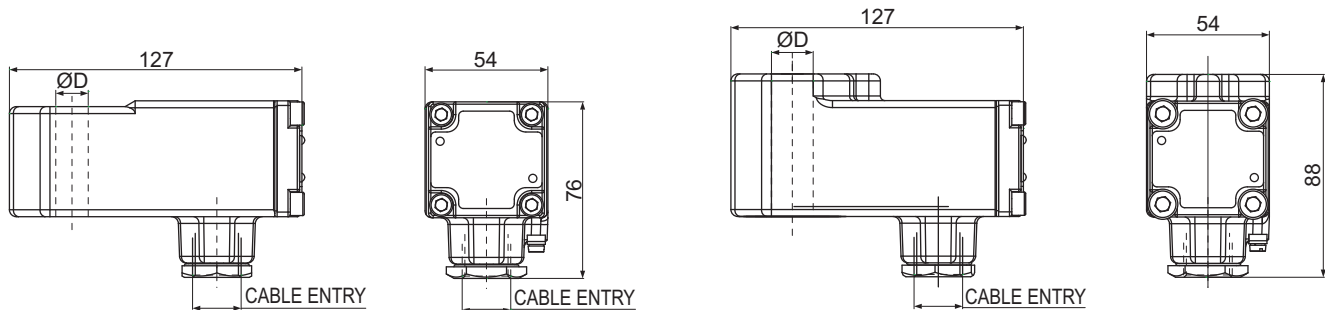
### WITH CABLE ENTRY M25X1.5



|     | ØD |
|-----|----|
| III | 13 |
| III | 14 |

|    | ØD |
|----|----|
| II | 18 |
| IV | 14 |

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



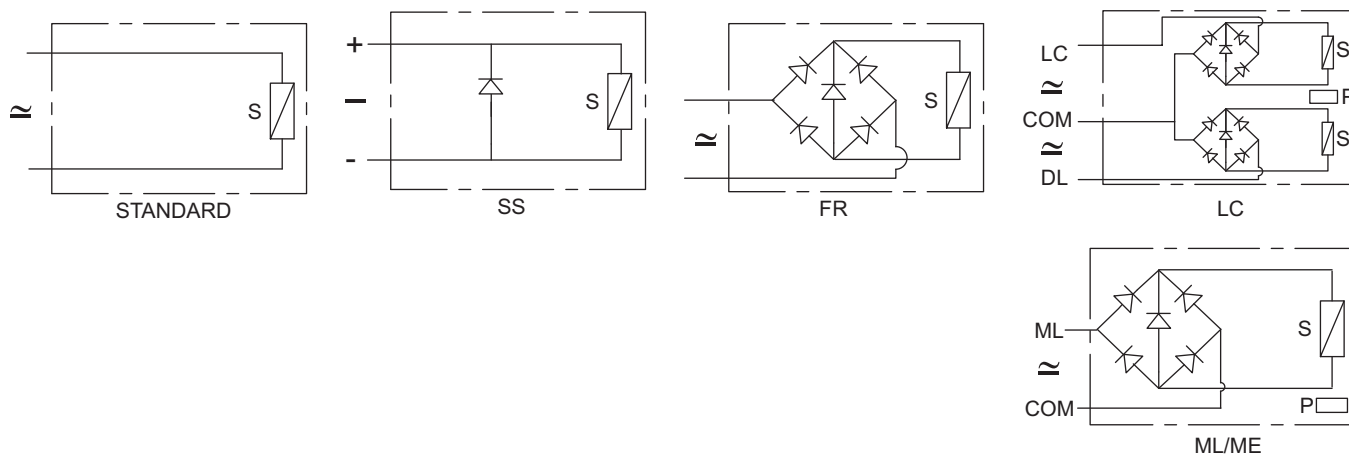
|     | ØD |
|-----|----|
| III | 13 |
| III | 14 |

|    | ØD |
|----|----|
| II | 18 |
| IV | 14 |

## OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

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

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



INDOOR



OUTDOOR



**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 | I①       | 14       |            |      |     |    |   | ▲  |    |    |
|         | II       | 18       |            |      |     |    | ✓ |    | ▲  | ✓  |
|         | III      | 14       |            |      |     | ✓  | ▲ |    |    |    |
| 256②    | II       | 18       |            |      |     |    | ✓ |    | ▲  | ✓  |
|         | III      | 14       |            |      |     |    | ▲ |    |    |    |
| 440④    | III      | 14       |            |      |     |    |   | ▲  |    |    |

- ▲ Standard
- ✓ Optional Available

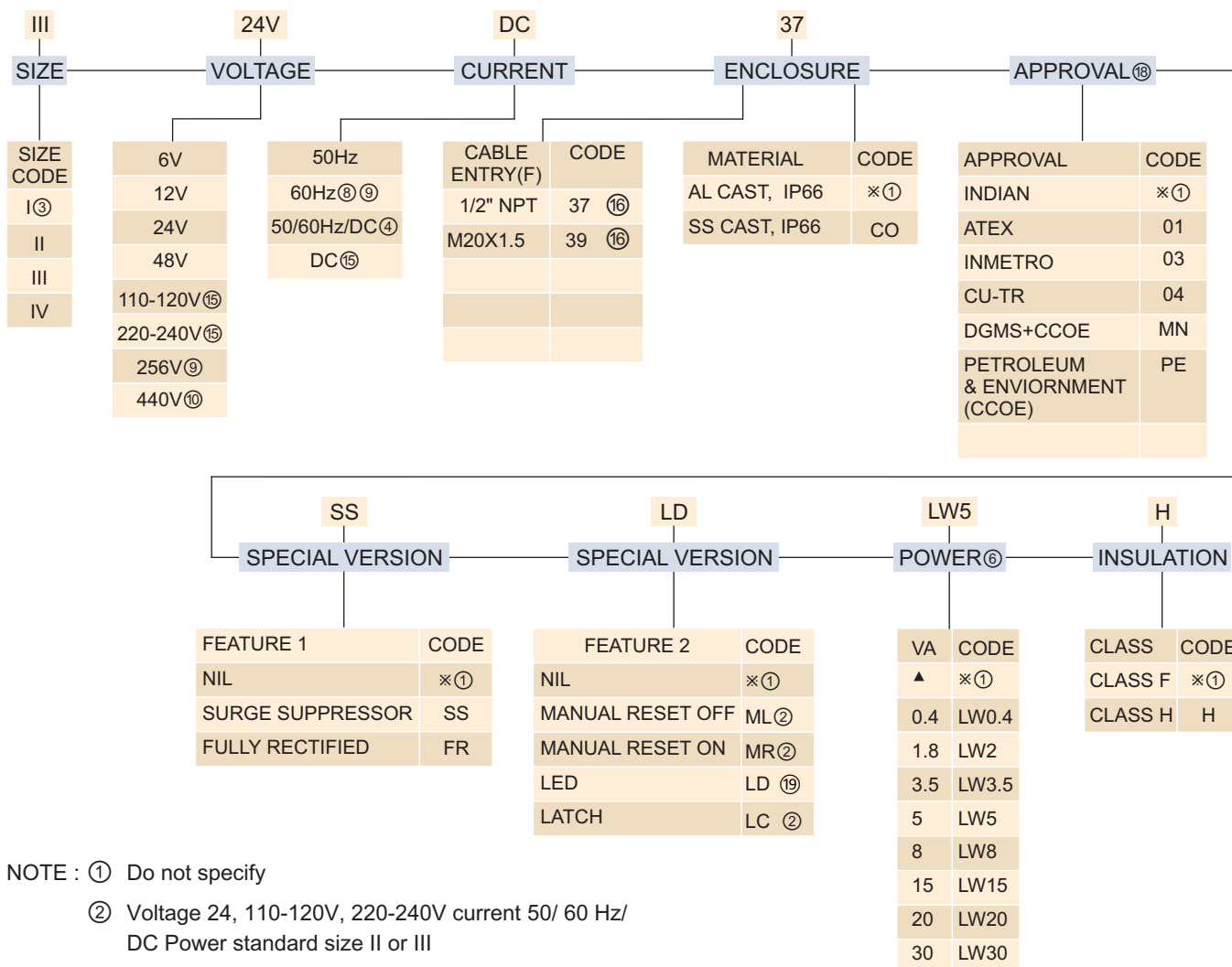
- ① Current 50 Hz or 60 Hz
- ② Only for DC Current
- ③ Should be Opted for 3/2 & 5/2 pilot operated valve
- ④ Current 50 Hz only

**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



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

⑰ Add SL for SIL capable certified coil

⑱ 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.Г508.B.01100                 |



**MARKING**

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

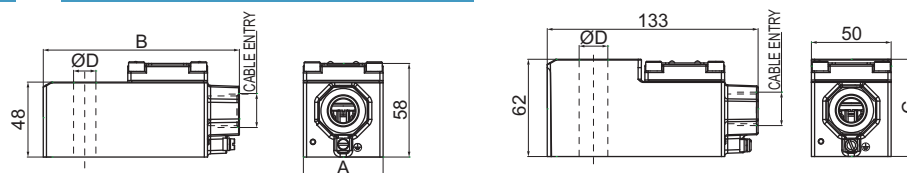
**AMBIENT TEMPERATURE**

(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      | -        |
| IV   | 30         | 40                    | 55      | 70       |
|      | 5          | 70                    | -       | -        |
|      | 11         | 65                    | 70      | -        |

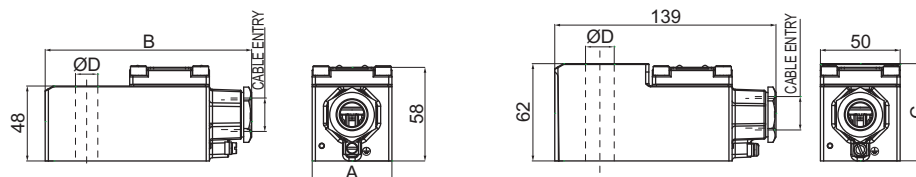
**DIMENSION**

**SOLENOID TYPE : 37 & 39**



| SIZE | A  | B   | ØD | COIL TYPE | CABLE ENTRY | APPROVAL INDIAN | OTHER THAN INDIAN | SIZE | C  | ØD |
|------|----|-----|----|-----------|-------------|-----------------|-------------------|------|----|----|
| I    | 42 | 116 | 14 | 37        | M25X1.5(F)  | ✓               |                   | II   | 61 | 18 |
| III  | 50 | 124 | 14 | 37        | 1/2"NPT(F)  |                 | ✓                 | IV   | 51 | 14 |
| III  | 50 | 124 | 13 | 39        | M20X1.5(F)  |                 | ✓                 |      |    |    |
|      |    |     |    | 37NS      | 1/2"NPT(F)  | ✓               |                   |      |    |    |
|      |    |     |    | 37MS      | M20X1.5(F)  | ✓               |                   |      |    |    |

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

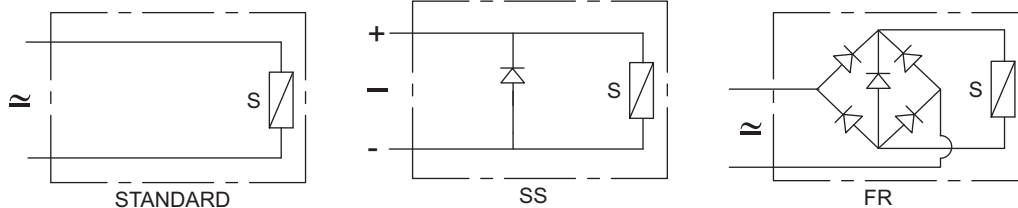


| SIZE | A  | B   | ØD | COIL TYPE | CABLE ENTRY | APPROVAL INDIAN | SIZE | C  | ØD |
|------|----|-----|----|-----------|-------------|-----------------|------|----|----|
| I    | 42 | 122 | 14 | 37        | 1/2"NPT(F)  | ✓               | II   | 61 | 18 |
| III  | 50 | 130 | 14 | 39        | M20X1.5(F)  | ✓               | IV   | 51 | 14 |
| III  | 50 | 130 | 13 | 37MS      | M20X1.5(F)  | ✓               |      |    |    |
|      |    |     |    | 37NS      | 1/2"NPT(F)  | ✓               |      |    |    |

**OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY**

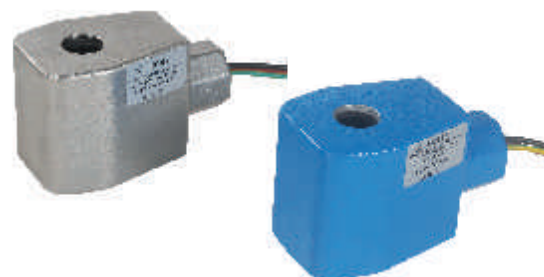
|   |   |   |  |  |
|---|---|---|--|--|
|   |   |   |  |  |
| <p>Replace Solenoid code 37 or 37MS along with Guide &amp; Plunger assembly</p> | <p>Replace Solenoid code 37 or 37MS along with Guide &amp; Plunger assembly</p> | <p>Solenoid code 39 replace with Solenoid code 37MS</p> |  |  |

**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**

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



INDOOR



OUTDOOR

**POWER**

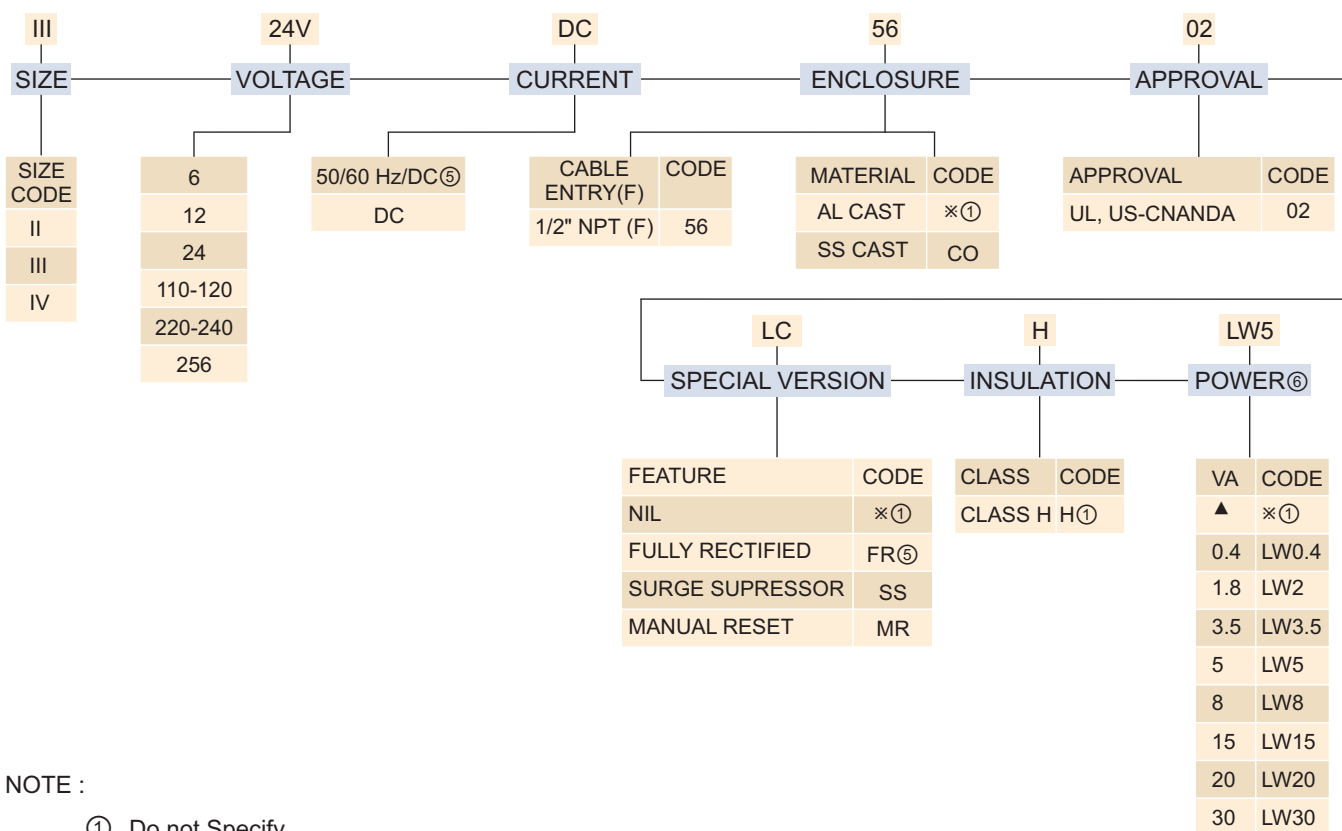
| Voltage | Solenoid |          | Power (VA) |      |     |   |   |    |    |
|---------|----------|----------|------------|------|-----|---|---|----|----|
|         | Size     | Core Dia | 0.4②       | 1.8② | 3.5 | 5 | 8 | 13 | 30 |
| 6       | II       | 18       |            | ✓    |     |   | ✓ | ▲  |    |
|         | 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                 |

**SOLENOID ORDERING CODE III-24V-DC-56-H-01**



NOTE :

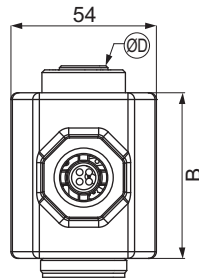
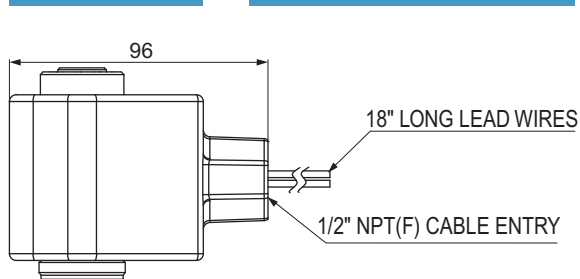
- ① Do not Specify
- ⑤ Solenoid suitable for 50 Hz/ 60 Hz/ DC current, select special version FR
- ⑥ Refer Power table on page 430A

**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      |

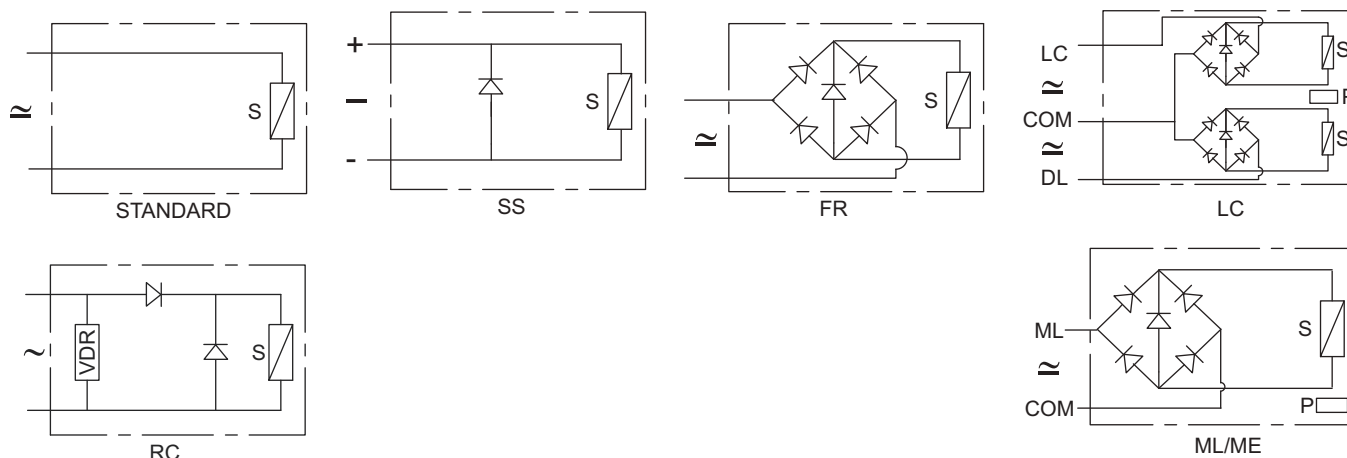
**DIMENSION**

**SOLENOID TYPE : 56**



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

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

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



INDOOR



OUTDOOR

**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

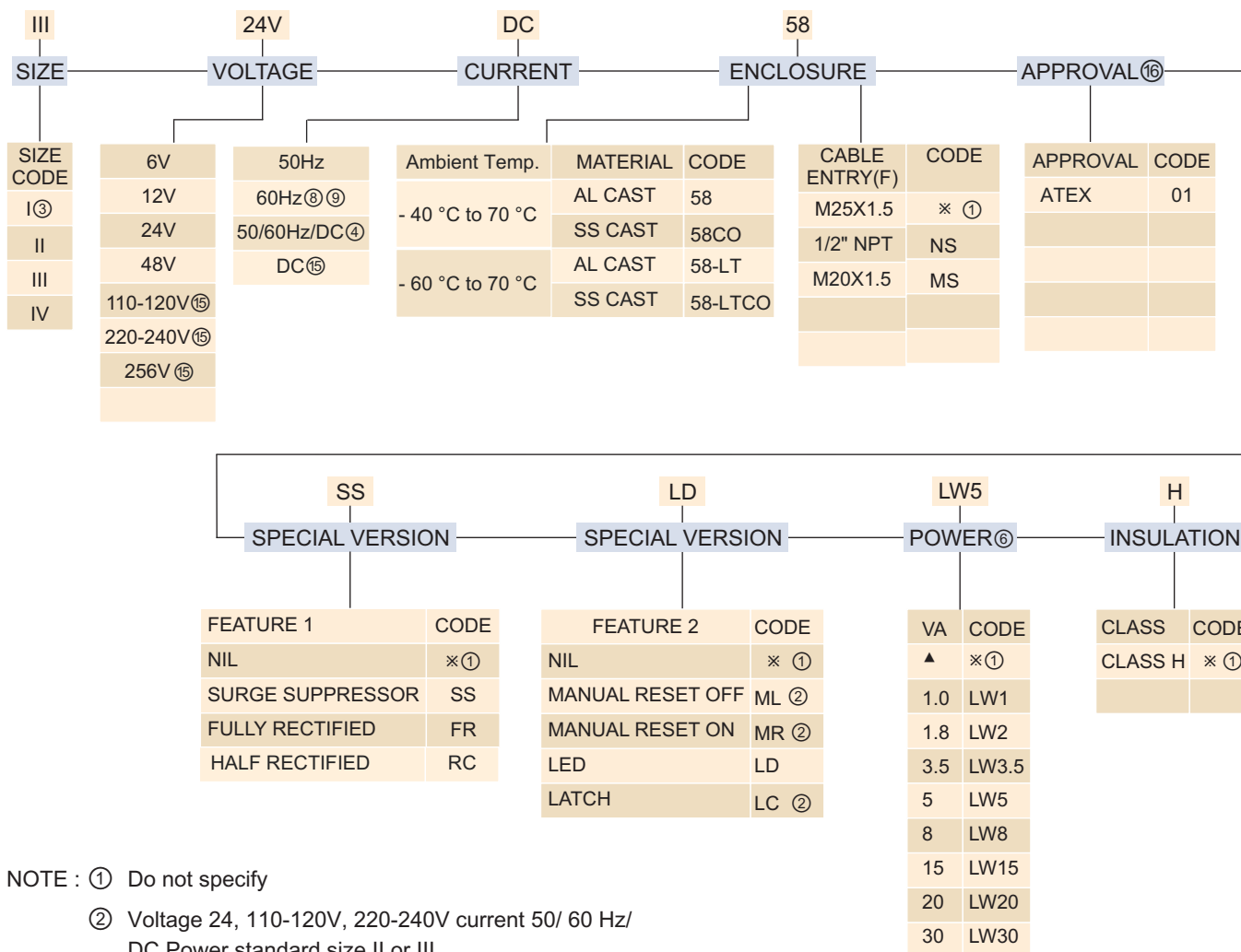
- ① Current 50 Hz or 60 Hz
- ② Only for DC Current
- ③ Should be Opted for 3/2 & 5/2 pilot operated valve
- ④ Current 50 Hz only
- ⑤ Current 50 Hz, 60Hz or DC

**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                 |



SOLENOID ORDERING CODE III-24V-DC-58-CO-SS-LD-LW5



- 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
  - ⑤ Current DC size II, III, IV
  - ⑥ Refer Power table on page 430E
  - ⑦ Add SL for SIL capable certified coil
  - 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

**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

EX e mb IIC T6 - T4 Gb IP67  
 Ex tb IIIC T6 - T4 °C Db IP67  
 -40 °C ≤ Ta ≤ 50 °C for T6  
 -40 °C ≤ Ta ≤ 65 °C for T5  
 -40 °C ≤ Ta ≤ 70 °C for T4

Size III 5W Coil

EX e mb IIC T6 Gb IP67  
 Ex tb IIIC T6 °C Db IP67  
 -40 °C ≤ Ta ≤ 70 °C for T6

Size III 8W, Size II 10W  
 Size I 8W, Size II 13W

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -40 °C ≤ Ta ≤ 60 °C for T6  
 -40 °C ≤ Ta ≤ 70 °C for T5

Size II 20W Coil

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -40 °C ≤ Ta ≤ 55 °C for T6  
 -40 °C ≤ Ta ≤ 70 °C for T5

Size II 8W,  
 Size I 5W, Size IV 11W

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -40 °C ≤ Ta ≤ 60 °C for T6  
 -40 °C ≤ Ta ≤ 70 °C for T5

Size II 30W Coil

EX e mb IIC T6 - T4 Gb IP67  
 Ex tb IIIC T6 - T4 °C Db IP67  
 -40 °C ≤ Ta ≤ 40 °C for T6  
 -40 °C ≤ Ta ≤ 55 °C for T5  
 -40 °C ≤ Ta ≤ 70 °C for T4

SOLENOID TYPE 58-LT

Size III 15W Coil

EX e mb IIC T6 - T4 Gb IP67  
 Ex tb IIIC T6 - T4 °C Db IP67  
 -60 °C ≤ Ta ≤ 50 °C for T6  
 -60 °C ≤ Ta ≤ 65 °C for T5  
 -60 °C ≤ Ta ≤ 70 °C for T4

Size III 5W Coil

EX e mb IIC T6 Gb IP67  
 Ex tb IIIC T6 °C Db IP67  
 -60 °C ≤ Ta ≤ 70 °C for T6

Size III 8W, Size II 10W  
 Size I 8W, Size II 13W

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -60 °C ≤ Ta ≤ 60 °C for T6  
 -60 °C ≤ Ta ≤ 70 °C for T5

Size II 20W Coil

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -60 °C ≤ Ta ≤ 55 °C for T6  
 -60 °C ≤ Ta ≤ 70 °C for T5

Size II 8W,  
 Size I 5W, Size IV 11W

EX e mb IIC T6 - T5 Gb IP67  
 Ex tb IIIC T6 - T5 °C Db IP67  
 -60 °C ≤ Ta ≤ 60 °C for T6  
 -60 °C ≤ Ta ≤ 70 °C for T5

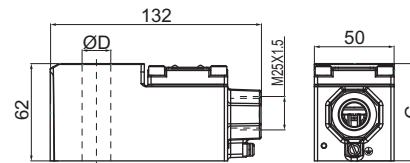
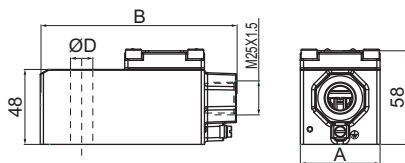
Size II 30W Coil

EX e mb IIC T6 - T4 Gb IP67  
 Ex tb IIIC T6 - T4 °C Db IP67  
 -60 °C ≤ Ta ≤ 40 °C for T6  
 -60 °C ≤ Ta ≤ 55 °C for T5  
 -60 °C ≤ Ta ≤ 70 °C for T4

DIMENSION

SOLENOID TYPE : 58, 58-LT

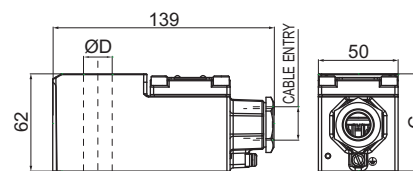
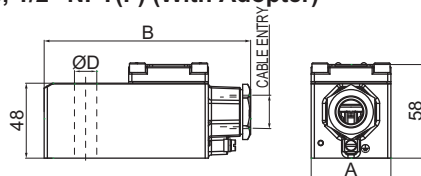
| SIZE | A  | B   | ØD |
|------|----|-----|----|
| I    | 42 | 116 | 14 |
| III  | 51 | 124 | 14 |



| SIZE | C  | ØD |
|------|----|----|
| II   | 58 | 18 |
| IV   | 58 | 14 |

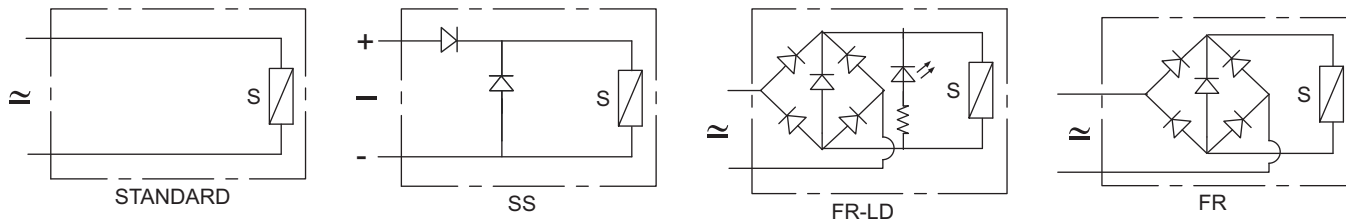
CABLE ENTRY M20X1.5, 1/2" NPT(F) (With Adopter)

| SIZE | A  | B   | ØD |
|------|----|-----|----|
| I    | 42 | 122 | 14 |
| III  | 51 | 130 | 14 |



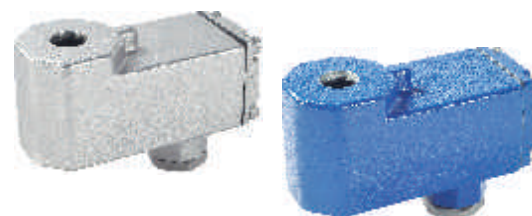
| SIZE | C  | ØD |
|------|----|----|
| II   | 58 | 18 |
| IV   | 58 | 14 |

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 availability of voltage to the Solenoid terminals
- Dual gasket



SPECIFICATION

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



INDOOR



OUTDOOR



**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       |            |      |     |   |   |    |    |    |

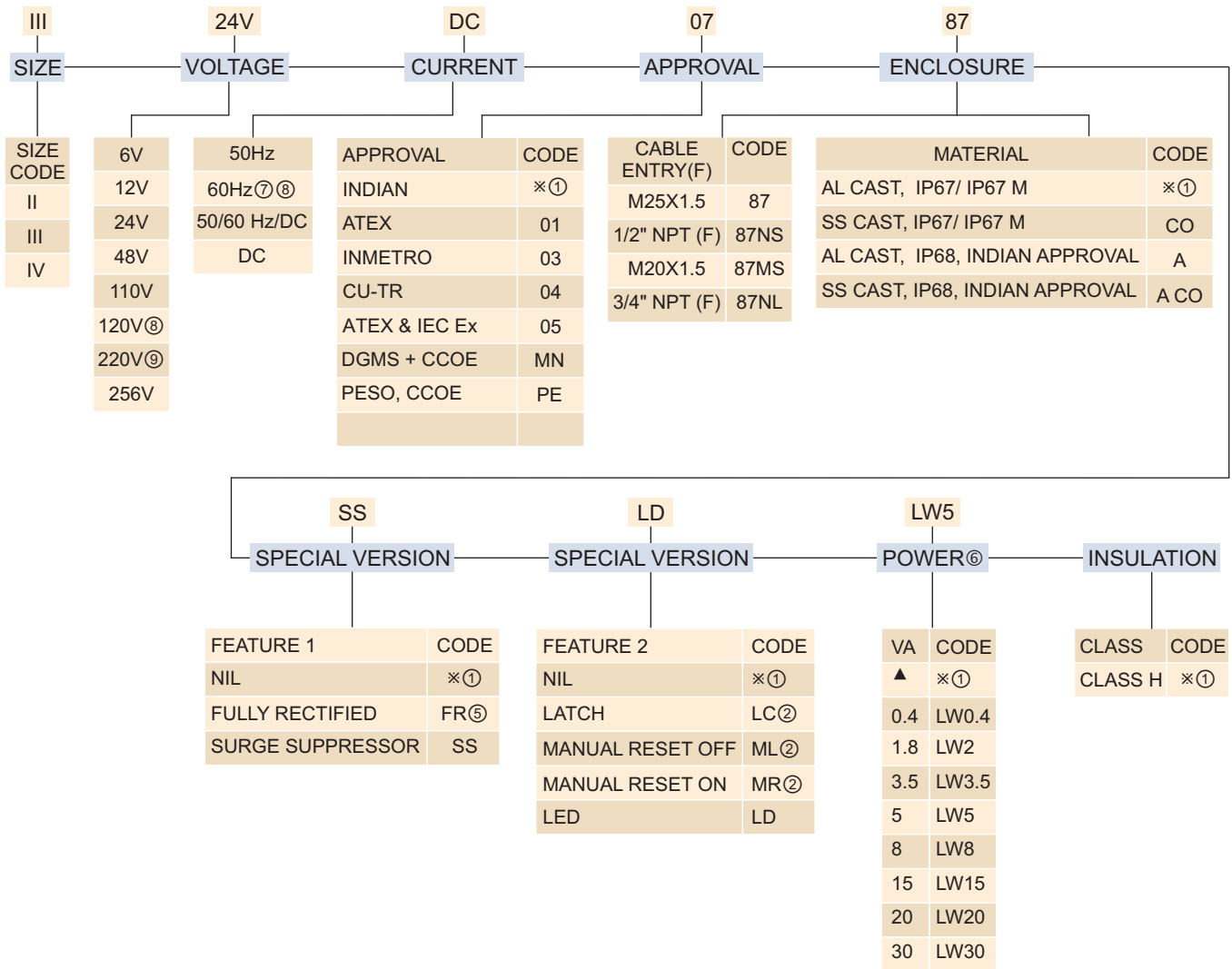
- ▲ Standard
- ✓ Optional Available
- ② Only for DC Current
- ③ Should be Opted for 3/2 & 5/2 pilot operated valves

**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                 |

SOLENOID ORDERING CODE

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



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      |



**MARKING**

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

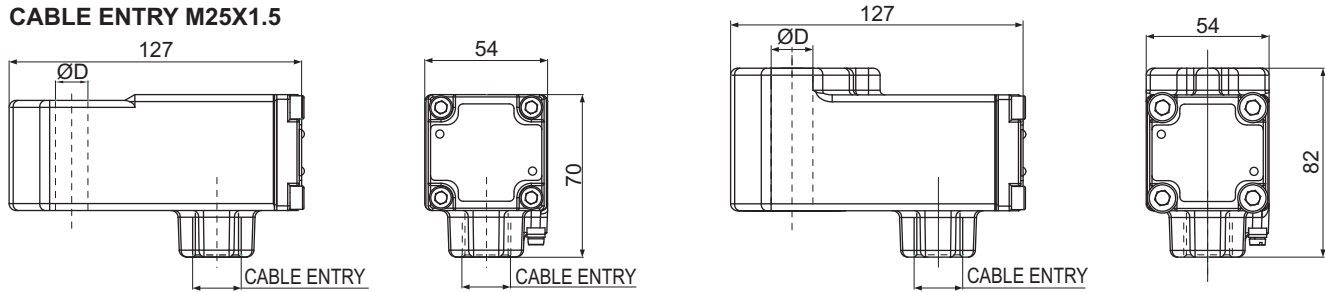


**APPROVAL**

| 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.В.01100 |

**DIMENSION SOLENOID TYPE : 87**

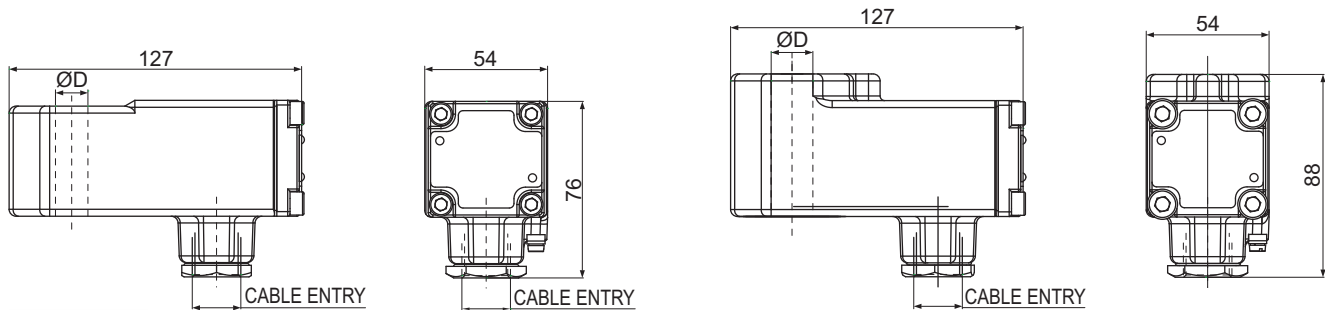
**CABLE ENTRY M25X1.5**



|     | 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**

|   |   |   |  |  |
|---|---|---|--|--|
|  <p>Replace Solenoid code 87NS or 87MS along with Guide and Plunger assembly</p> |  <p>Replace Solenoid code 87 or 87MS along with Guide and Plunger assembly</p> |  <p>Solenoid code 39 replace with Solenoid code 87MS</p> |  |  |
|---|---|---|--|--|



**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.  $U_o$ ,  $I_o$ ,  $P_o$ ,  $C_o$ ,  $L_o$  are the Entity Parameters of the Power Source

$U_i$ ,  $I_i$ ,  $P_i$ ,  $C_i$ ,  $L_i$  are the Entity Parameters of the Field Device  $U_i$  (Voltage),  $I_i$  (Current),  $P_i$  (Power), of the solenoid (Field Device) should be more than  $U_o$  (Voltage),  $I_o$  (Current),  $P_o$  (Power), of the Power Source. i.e. ( $U_i \geq U_o$ ,  $I_i \geq I_o$ ,  $P_i \geq P_o$ )

$C_i$  (Capacitance),  $L_i$  (Inductance) of the field device and  $C_c$  (Capacitance),  $L_c$  (Inductance) of the Cable should be less than  $C_o$  (Capacitance),  $L_o$  (Inductance) of the Power Source  
i.e. ( $C_i + C_c \leq C_o$   $L_i + L_c \leq L_o$ )

**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

$$R_C = [V_{B0} - ((V_{B0} - V_{BM}) * I_C / I_B)] * 1000 / I_C$$

Allowable Maximum Cable Length ( $CL_R$ ) should have Resistance  $\leq R_C$

**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  $\leq C_o$

**Inductance Based**

Allowable Inductance of the Barrier ( $L_B$ )

Cable Inductance ( $L_c$ )

Solenoid Inductance ( $L_s$ ) :  $L_s = 0$  (for ROTEX IS Solenoid)

$$L_o \geq L_c + L_i$$

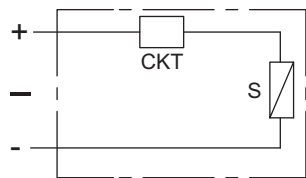
Allowable Maximum Cable Length ( $CL_L$ ) should have Inductance  $\leq L_o$

CL should be minimum of  $CL_R$ ,  $CL_C$ ,  $CL_L$

**CL should be minimum of  $CL_R$ ,  $CL_C$ ,  $CL_L$**



**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**

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



**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<br>5XXXX, 3XXX, VB<br>(Except 30308, 30334,<br>30138 & 30318 etc.) | 30318LW1.8 & P3017                            | 2XXXX, 3XXXX, 4XXXX<br>5XXXX, 3XXX, VB<br>(Except 30308, 30334,<br>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 |

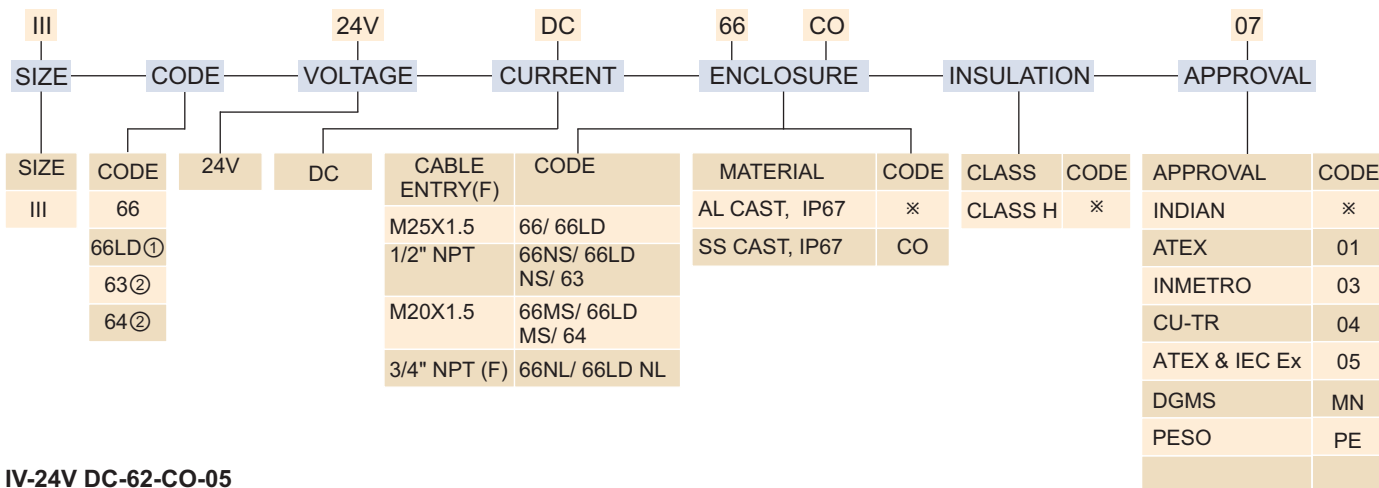
**RESPONSE OFF TIME**

10mS to 20mS

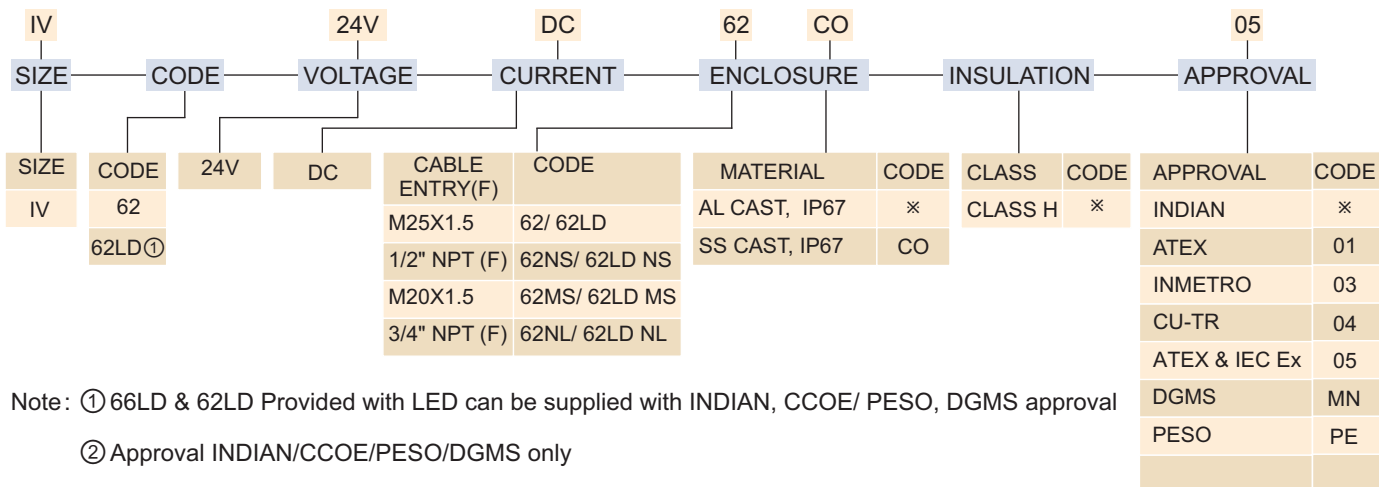


**SOLENOID ORDERING CODE**

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



**IV-24V DC-62-CO-05**



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.Г508.B.01100   |
| INMETRO        |                     |                         |
| IECEX          | Baseefa             | IECEX BAS 12.0128XIssu1 |

**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 <sub>200</sub> 125 °C Da       |                       |

**Solenoid Type : 63, 64**

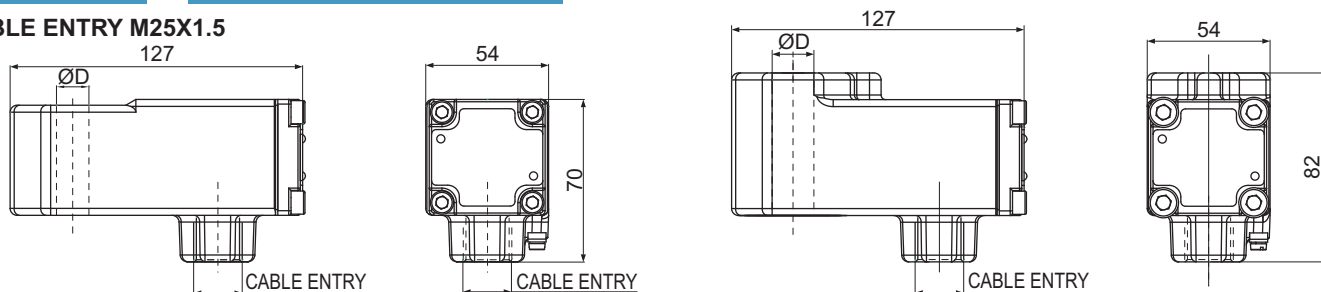
| Approval   | Certifying Agencies | Reference Number                  |
|------------|---------------------|-----------------------------------|
| INDIAN     | CMRI./ CIMFR        | CIMFR/TC/P/H702 & CMRI/TC/SR/H920 |
|            | KLPL (Revalidated)  | KLPL/Ex/13-022X                   |
| BIS   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

\* Only for SS cast enclosure



**DIMENSION SOLENOID TYPE : 62, 66**

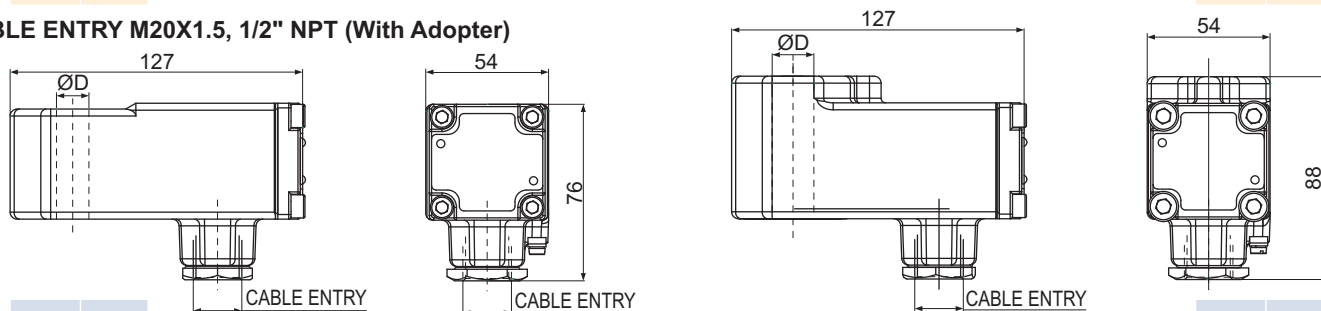
**CABLE ENTRY M25X1.5**



|     | ØD |
|-----|----|
| III | 13 |
| III | 14 |

|    | ØD |
|----|----|
| II | 18 |
| IV | 14 |

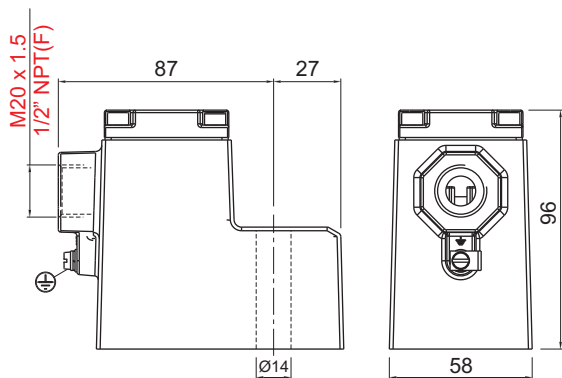
**CABLE ENTRY M20X1.5, 1/2" NPT (With Adopter)**



|     | ØD |
|-----|----|
| III | 13 |
| III | 14 |


|    | ØD |
|----|----|
| II | 18 |
| IV | 14 |

**SOLENOID TYPE : 63, 64**

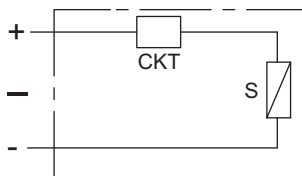


| SIZE | B  | ØC |
|------|----|----|
| III  | 56 | 13 |
| I    |    |    |

**OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY**

|   |   |  |  |  |
|---|---|--|--|--|
| <p>Replace with Solenoid type 66 along with Guide and pressure assembly</p> | <p>Type : 63, 64, 63-01, 64-01</p>  <p>Replace with Solenoid Type 66</p> |  |  |  |
|---|---|--|--|--|

**CIRCUIT DIAGRAM**



**FEATURES**

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



**SPECIFICATION**

|                           |  |                                 |
|---------------------------|--|---------------------------------|
| <b>Size</b>               | III - 13 mm                              |                                 |
| <b>Voltage</b>            | 24 V                                     |                                 |
| <b>Current</b>            | DC                                       |                                 |
| <b>Enclosure</b>          | <b>Cable Entry</b>                       | Pg-9, DINPLUG AS PER DIN 43650A |
|                           | <b>Material</b>                          | Steel chrome plated             |
| <b>Insulation Class</b>   | Class H                                  |                                 |
| <b>Weather Protection</b> | IP67                                     |                                 |
| <b>Approval</b>           | INDIAN, CCOE, DGMS <sup>①</sup> , GOST R |                                 |
| <b>Duty Cycle</b>         | 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**

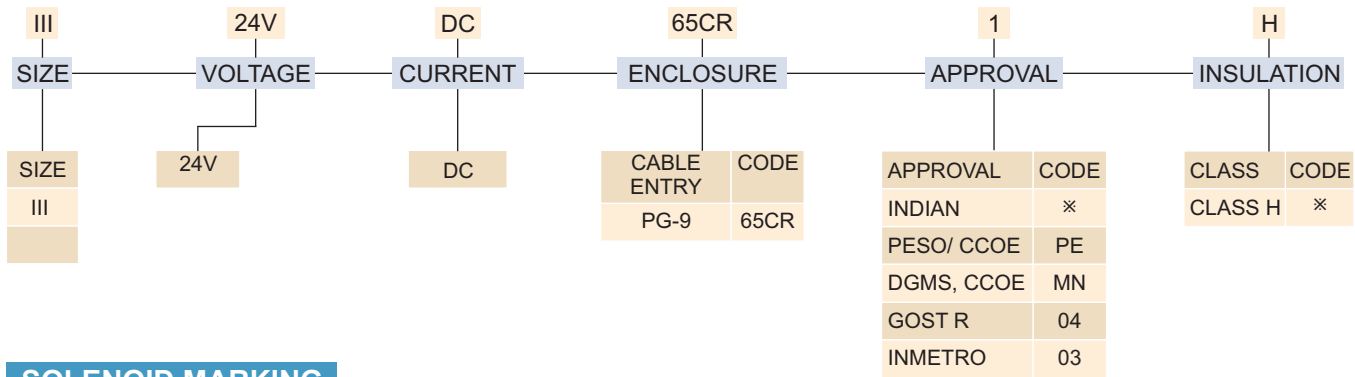


INDOOR



OUTDOOR

**SOLENOID ORDERING CODE III-24V-DC-65CR**



**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**

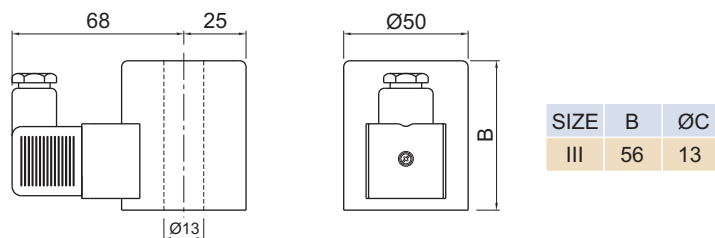
|                              |                     |
|------------------------------|---------------------|
| Valve Code I3XXX & I5XXX     | Max. Pressure 11bar |
| Minimum Voltage              | 14V                 |
| Minimum Current              | 25mA                |
| Minimum Power          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

**APPROVAL**

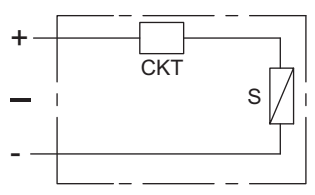
| Approval    | Certifying Agencies | Reference Number    |
|-------------|---------------------|---------------------|
| INDIAN      | KLPL                | KLPL/Ex/13-022X     |
| BIS         |                     | 7560881             |
| CCOE/ PESO* |                     |                     |
|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

**DIMENSION**

**SOLENOID TYPE : 65 CR**



**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**

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

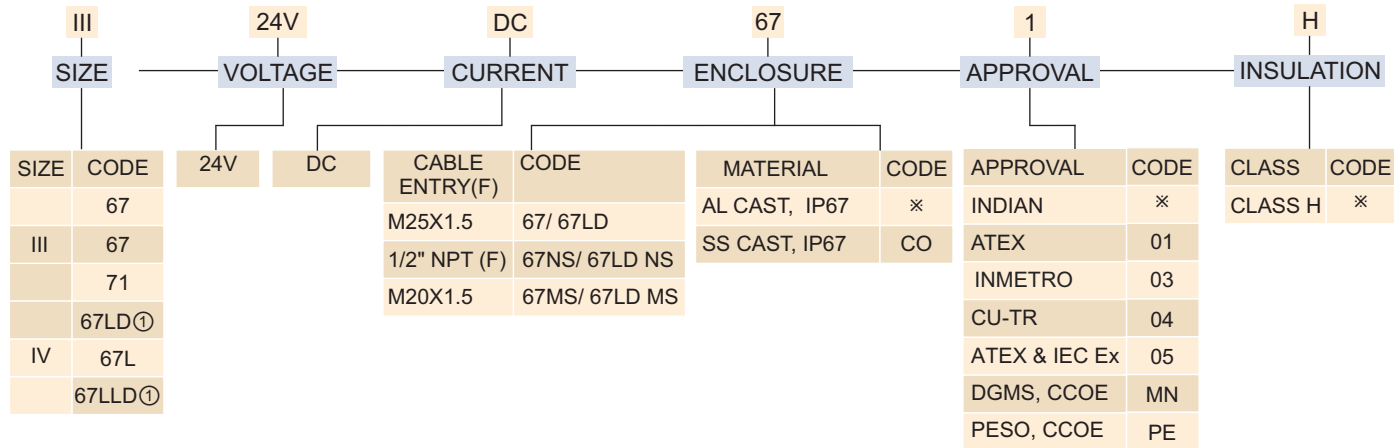
**TYPE 71**

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

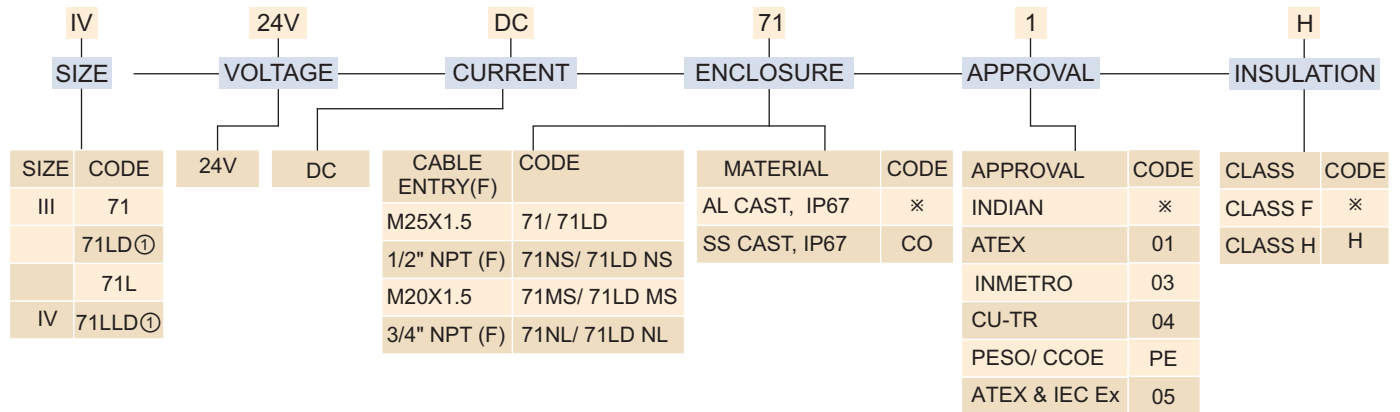
**APPLICATION**



**SOLENOID ORDERING CODE III-24V-DC-67**



**IV-24V-DC-71-05**



Note : ① 67LD, 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    |





**ENTITY PARAMETER**

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

**MINIMUM OPERATING PARAMETER**

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

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

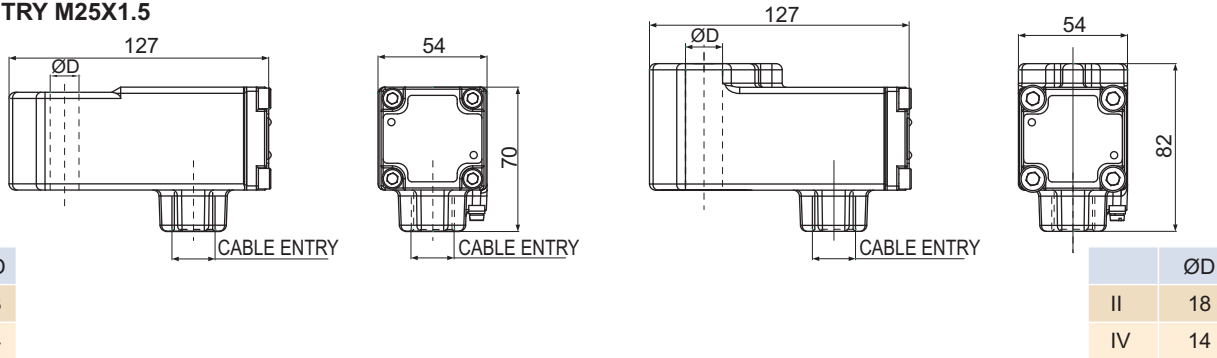
|                                      | Ambient Temperature  |
|--------------------------------------|----------------------|
| ATEX & IECEx                         |                      |
| I M1 Ex ia II Ma*                    | - 60 °C ≤ Ta ≤ 75 °C |
| II 1G Ex ia IIC T5 Ga                | - 60 °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



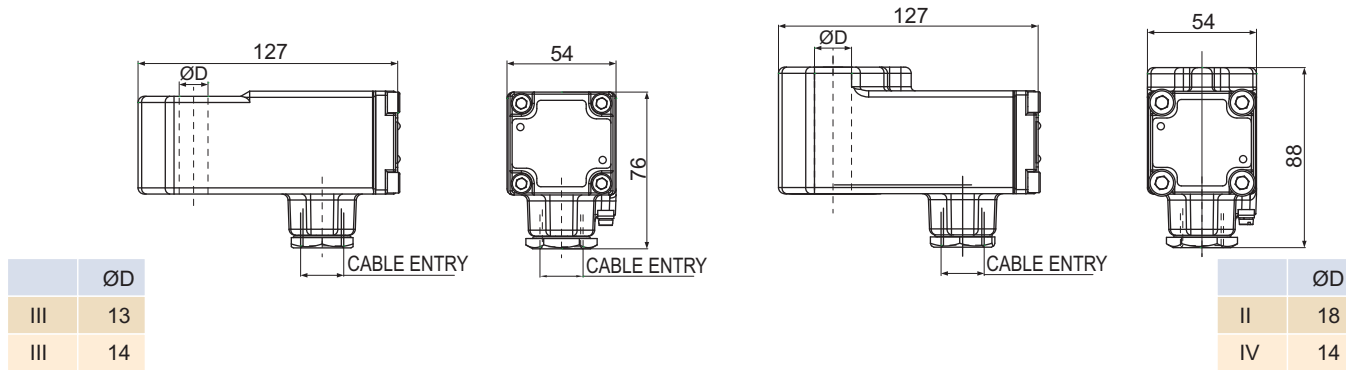
**DIMENSION SOLENOID TYPE : 71**

**CABLE ENTRY M25X1.5**



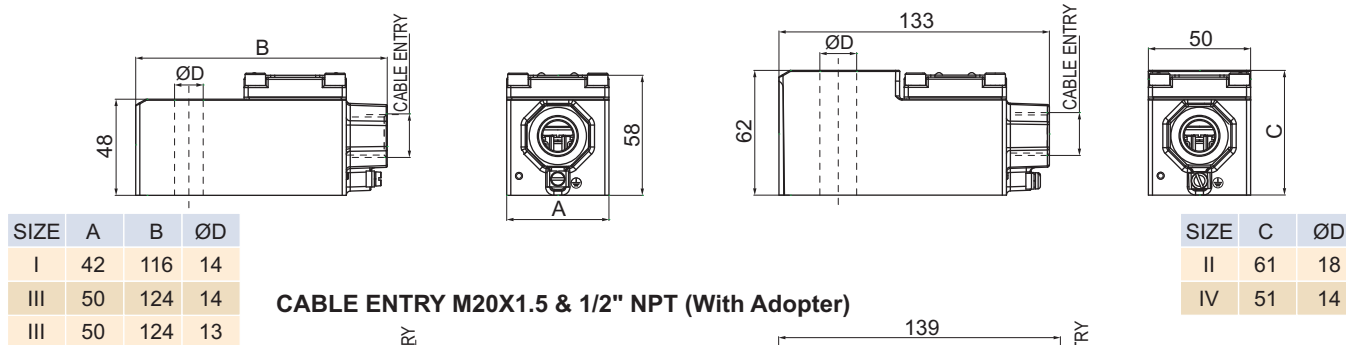
**CABLE ENTRY M20X1.5, 1/2" NPT (With Adopter)**

**SOLENOID TYPE : 71**

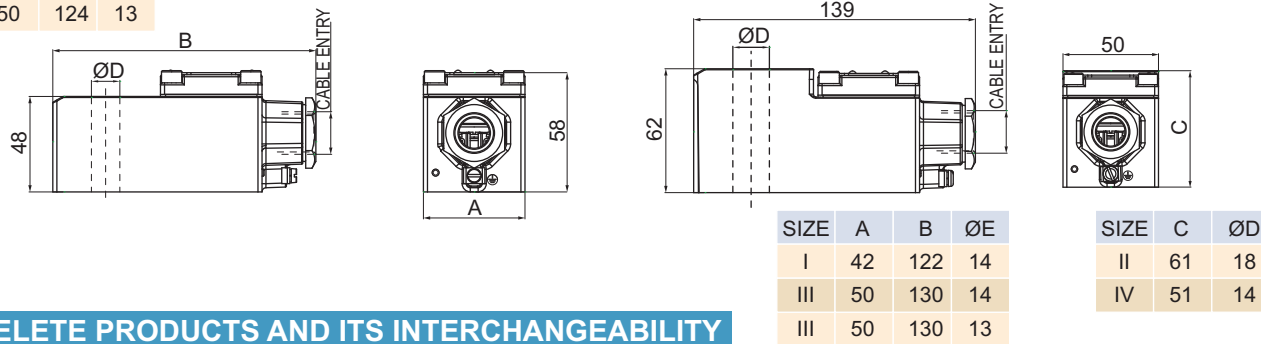


**CABLE ENTRY M20X1.5**


**SOLENOID TYPE : 67**



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



**OBSELETE PRODUCTS AND ITS INTERCHANGEABILITY**

|  |  |  |  |
|--|--|--|--|
|  |  <p>Coil Type 72 &amp; 73<br/>is been Replaced by<br/>67 &amp; 71</p> |  |  |
|--|--|--|--|