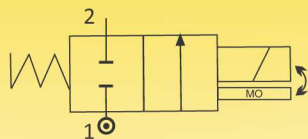


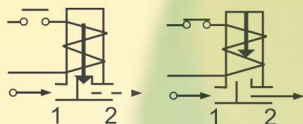
SOLENOID VALVES FOR AUTOMATION

2/2 WAY – NORMALLY CLOSED – DIRECT ACTING TYPE, WITH MANUAL OVERRIDE

SERIES 221A



N.C.
Normally Closed
Coil energised - Open
Coil de-energised - Closed



NOTE: For your requirement of valves with Flameproof Enclosure, please refer to catalogue no. 9210A.

General Description:

Series 221A Solenoid Valves are Direct Acting and DO NOT require minimum pressure to operate. Valves are used on general applications where small overall dimensions and low power consumption is required. Valves are applicable on media such as Water, Air, Light Oil, Inert Gas, etc. provided they are compatible with construction material of the valve.

End Connection:

'G'-ISO-228 (BSP) & NPT.

Max Temperature Range:

For media – Minimum (-)5°C and maximum with Buna Nitrile seating is 80°C; Viton seating 140°C. Max. ambient temperature with Class 'H' coil (+)42°C.

Manual Override:

Valve can be operated manually to open the valve when there is No Electric supply to the coil. Manual Override consist of slotted head screw for Screw Driver with Two possible position to Open the valve and Close the valve. Manual Override is to be positioned at Close Position when valve is operated through coil.

BEFORE ATTEMPTING ELECTRICAL OPERATION: CHECK THE MANUAL OVERRIDE IS AT CLOSE POSITION.

Mounting Bracket:

Mounting Brackets are available as accessory.

Coil:

Series 221A Solenoid Valves are supplied with Class 'H' insulated (180°C) coils; encapsulated in Thermo Plastic, containing 40% Glass fibre. All coils are for continuous service, 100% duty (E.D). Rated voltage tolerances for all AC Coils $\pm 10\%$ /-5% and for DC Supply Coils $\pm 10\%$ /-5%. Coils can be used on AC with frequency of 50 Hz to IP 65 as per IEC-60529-2001.

Installation:

Valves can be mounted in any position except "Inverted", preferably in horizontal pipeline with magnetic construction in vertical and upright position.

Series 221A Solenoid valves are not designed for Back Pressure coming from downstream side.

Approvals:

IP-65 As per IEC-60529-2001, Coil M36-SQ: 220/230V 50/60 Hz, 240V 50/60Hz, 110V 50/60 Hz, 24V DC.

Material:

Valve Body : Brass Stamping to IS- 6912 ($\frac{1}{8}$ " & $\frac{1}{4}$ "),
: ASTM A351 Gr.CF8 (SS304), Optional.: ASTM A351 Gr.CF8M.

Seals(Seating) : Buna Nitrile or Viton.

Tube Nut : For Brass body: Brass tube nuts; For Stainless Steel body : AISI 316St.St.,

Plunger & Stopper : AISI 430FR St.St.

Spring : AISI302 St.St.,

Shading Ring : For AC: Copper/Al/Silver, For DC: No shading ring.

Coil Type : AC – M22-SQ/GP/H, 240, 110 V 50 Hz, Rating:5.5 VA
DC-M22-SQ/GP/H,24V Rating: 4 Watts
AC – M36-SQ/GP/H, 240, 110V 50 Hz, Rating:18 VA and 24 VDC-M36-SQ/GP/H, Rating:12Watts.

Application : Textile Machinery, Coffee Machines, Sterilizers, Wood Working Machines, Electro Medical Equipment, Shoe Manufacturing Machines, Exhaust Gas Analyzers, Scientific Equipment, Automatic Dispensers, Pilot Valves, etc.

SPECIFICATIONS:

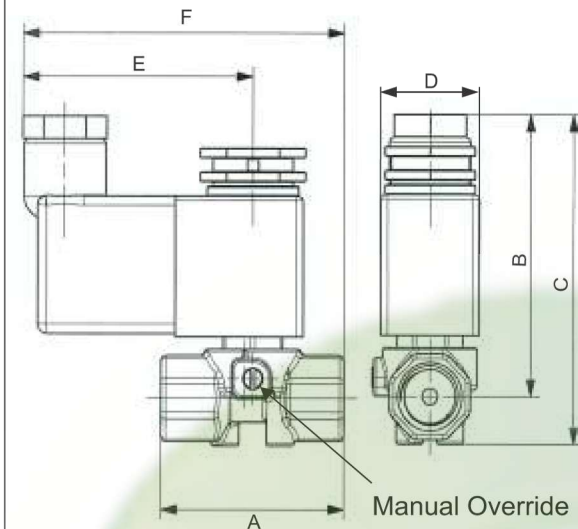
| Series | Size 'G' thr | Orifice Size | Flow Factor Kv | Body Material | | Seat | | BTP | Working Pr.(bar) | | | | Coil Type | Coil Rating | | Constr. Ref. No | Weight * kgs |
|--------|-----------------|-----------------|----------------------|------------------|-----|------|---|-----|------------------|-----|--------|-----|--------------|----------------|------|-----------------------|--------------------|
| | | | | | | | | | 230V AC | | 24V DC | | | VA | Watt | | |
| | | | | | | | | | min | max | min | max | | | | | |
| 221A | Inch | mm | M³/hr. | | | | | bar | | | | | | | | | |
| 1503 | ¼ | 1.5 | 0.06 | BR | CF8 | BN | V | 16 | 0 | 20 | 0 | 20 | M22-SQ | 5.5 | 4 | 601 | 0.136 |
| 2203 | ¼ | 2.2 | 0.12 | BR | CF8 | BN | V | 16 | 0 | 8 | 0 | 20 | M22-SQ | 5.5 | 4 | 601 | 0.136 |
| 1506 | ¼ | 1.5 | 0.06 | BR | CF8 | BN | V | 16 | 0 | 30 | 0 | 30 | M36-SQ | 18 | 12 | 602 | 0.285 |
| 2206 | ¼ | 2.2 | 0.12 | BR | CF8 | BN | V | 16 | 0 | 30 | 0 | 30 | M36-SQ | 18 | 12 | 602 | 0.285 |
| 3306 | ¼ | 3.0 | 0.15 | BR | CF8 | BN | V | 16 | 0 | 20 | 0 | 25 | M36-SQ | 18 | 12 | 602 | 0.285 |

*Weight of Brass Body.

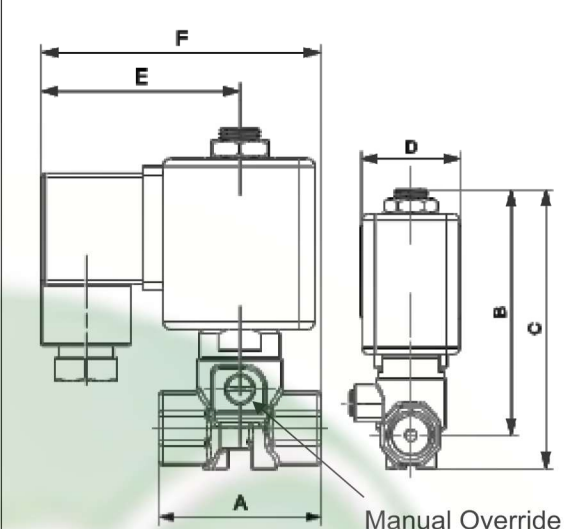


NOTE: Valves suitable for AC and DC supply are different in characteristics and construction. No Interchanging of coils between DC to AC or AC to DC possible. DO NOT INTERCHANGE COILS. Minimum details required for submitting offer: Size, Body material, seating, medium name, Flow (M3/hr), pressure (bar), temp. Deg.C, coil voltage AC or DC.,Quantity (Nos), etc.

Construction Ref. No. 601



Construction Ref. No. 602



DIMENSION TABLE

| CATALOGUE NO. | Size (Inch) | DIMENSION IN MM. | | | | | | APPROX WT. (kgs) |
|---------------|-------------|------------------|----|----|----|----|----|------------------|
| | | A | B | C | D | E | F | |
| 221A1503 | 1/8 | 30 | 59 | 69 | 22 | 50 | 65 | 0.136 |
| 221A2203 | 1/8 | 30 | 59 | 69 | 22 | 50 | 65 | 0.136 |
| 221A1506 | 1/4 | 40 | 73 | 83 | 30 | 49 | 69 | 0.285 |
| 221A2206 | 1/4 | 40 | 73 | 83 | 30 | 49 | 69 | 0.285 |
| 221A3306 | 1/4 | 40 | 73 | 83 | 30 | 49 | 69 | 0.285 |

How to read the catalogue:

221A 1503 BR/CF8 BN/V BSP/NPT MO

- Series 2-way Normally Closed, Direct Acting Type
- Size of valve/ Port size.
- Body material (Brass / CF8)
- Seating material (Buna Nitrile/Viton)
- End Connection (BSP / NPT)
- Manual Override

Coil Voltage:

M22/36 SQ H-5.5-18/4-12 WP-65

- Size of Coil.
- Coil Type (Square)
- Class of Insulation. Coil VA (AC) or Watts (DC)
- Class of Electrical Protection.

110V 50Hz AC/DC

- Electrical Voltage, Std. 230, 110, 24 AC / 24 V DC
- Hertz
- Characteristics (AC / DC)