Fast Switching Valve
Lucifer 2-way fast response and long life solenoid valves
Applications

2/2 magnalift solenoid valve used for air control or air pulsing in all applications where extremely short response time and/or long life expectancy are required. Flow rate up to 40 Nm³/h (subsonic flow only) like: textile weaving looms, printing machines, sorting machines, bank note counting machines.

Features

- Torque 20 Nm for 299560 housing (self locking nut 492588)
- Torque 10 Nm for 2994 & 2995 housing (nut 484018)
- 2P+E DIN 43650A plug connection
- Degree of protection IP65
- Guide rings assure high life expectancy
- High performance plunger with low residual magnetic effect and long life
- Shock absorber improves life expectancy of the valve
- PUR seat disc provides magnalift effect

Section drawing of the 221 J 3311

Technical Data

Function:
2/2 solenoid valve closed when de-energized.

Design:
Pilot operated poppet valve with magnalift.

Mounting:
For direct pipe mounting or with the help of M5x6 mm screw (see dimensions).

Mounting position:
Indifferent.

Material specifications:
Forged brass body. Internal parts in stainless steel. Sealing material in PUR.

Range of admissible pressure drop:
\[ \Delta p \min. = 0 \text{ bar} \]
\[ \Delta p \max. = 7 \text{ bar} \]

Response time (see p. 2):
Conditions: voltage 24 VDC nominal, flow 34 Nm³/h.
Reference pressure dynamic (orifice 2): 4.5 bar.
Response times are increasing above starting from 300 millions cycles.

Switching on:
- TE on: 9.5 - 12 ms
  Electrical response time until the plunger is in fully attracted position.
- T on: 10-14 ms
  Filling time until the pressure has reached 50% of output pressure P2 (own volume of the valve, outlet port plugged.)

Switching off:
- TD off: 4 - 8 ms
  Closing time until the plunger is in the rest position.
- T off: 5.5 - 9.5 ms
  Emptying time until the pressure has dropped to 50% of P2 pressure.
  This response time is depending on user at the outlet port.

Cycling rate:
Up to 30 Hz.

Life expectancy:
> 500 millions cycles
Conditions: Instrumentation dryed and filtered air at 20 µm, (dew point +2°C).
P max. 5 bar nominal voltage 24 VDC vibrations 5 to 500 Hz.

Media:
Instrumentation air (dryed and unlubricated) filtered at 20 µm.

Fluid temperature:
Min. 0°C. Max. + 40°C.

Ambient temperature:
0°C to +50°C.

Vibrations:
Up to 1500 Hz, max. shocks 10 g.
At max. vibration rating, life expectancy will decrease.

Electrical part:
32 mm coil 483816 (14W DC) encapsulated in synthetic material.
Connection with 3 pin DIN 43650 type A plug connector, degree of protection IP 65.

Solenoid duty:
Relative duty time:
80% max. for cycle 30 Hz (33ms), 70% max. for cycle 20 Hz (50ms), 55% max. for cycle 10 Hz (100ms), 25% max. for cycle 1 hour (this valve can not work at ED 100%).
\[ x \% = \frac{\text{Energized time}}{\text{Cycle time}} \times 100 \]

Housing:
3 possibilities 2994/2995/299560.

Voltage:
24 V DC.

Voltage tolerance:
± 10%.

Class of insulation material:
Class F [155 °C].

Part kit:
Nothing available

Port Size:
G 3/8

Grifice:
mm 8

Gmax:
Nm³/h 40

Admissible differential pressure:
min. 0
Max. 7

Maximum admissible fluid temperature:
°C 40

References N°:
Valve
Housing
Coil
221 J 3311
2994
2995
299560

Power consumption:
W 14

Weight:
kg 360
Applications

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Flow rate up to 40 Nm³/h (subsonic flow only) like: textile weaving looms, printing machines, sorting machines, bank note counting machines.

Features

- Torque 20 Nm for 299560 housing (self locking nut 492581)
  - 2P+E DIN 43650A plug connection
  - Degree of protection IP65
  - Guide rings assure high life expectancy

- Torque 10 Nm for 2994 & 2995 housing (nut 484018)
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  - Shock absorber improves life expectancy of the valve
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Section drawing of the 221 J 3311

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<td>Weight: g 360</td>
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</table>
Worldwide division headquarters

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