840 Series

High performance compact solenoid valve | 2/2 NC
PNEUMATIC DIVISION

MATRIX mechatronics

www.matrix.to.it
sales@matrix.to.it
The 840 Series Pneumatic Solenoid Valves are 2/2 NC type. The research about materials and new technological solutions allowed the realization of a shutter solenoid valve with an extremely simple operation principle and with avant-garde dynamic characteristics. The mass of the moving elements has been reduced to the minimum and every inner friction has been eliminated: in this way, we obtained response times of milliseconds and an operation life over 500 million cycles. Due to the possibility of controls of speed-up type, their dynamic characteristics are even more improved. Standard solenoid valves with 24 VDC control have a response time lower than 5 ms in opening and 2 ms in closing, with a maximum operation frequency of 200 Hz. On the contrary, solenoid valves with speed-up control have a response time lower than 1 ms, both in opening and in closing, with a maximum operation frequency of 500 Hz. Besides high-speed characteristics, solenoid valves 840 Series offers flow rate values up to 300 Nl/min., with feeding pressure from 0 to 8 bar.

Controlling the valve through either PWM (Pulse Width Modulation) or PFM (Pulse Frequency Modulation) technique, it is possible to vary the passing flow rate and to obtain, in this way, a solenoid valve, having a proportional flow rate. The 840 Series is available both in-line assembly and sub-plate version, equipped with such accessories as multi-position manifolds or speed-up integrated driver boards.

Advantages

• Compact dimensions (12mm footprint)
• High flowrate up to 300 l/min @ 6 bar (modular)
• Fast response times down to 2 ms
• Insensitivity to high frequency and vibrations
• Low power consumption
• Extreme precision and flexibility
• Extra long operating life (up to 500 M cycles)

Typical applications

• Process and precision instrumentation
• Pressure and flowrate control systems
• Positioning systems
• Sorting and recycling applications
• Metering systems
• Biomedical equipments

840 Series • Manifold mounting version with optional M8 connection shown
GENERAL CHARACTERISTICS

FLUID: Non-lubricated dry air, neutral gases (−10 to +50°C)
FILTRATION RATING: Min 40 micron
TEMPERATURE: −10 to +50°C (Standard version)
RESPONSE TIME IN OPENING: XX / KK < 1 ms, YY < 1,5 ms
RESPONSE TIME IN CLOSING: XX / KK < 1 ms, YY < 2 ms
MAXIMUM FREQUENCY: XX / KK 250 Hz, YY 250 Hz
WEIGHT: XX / KK 95 g, YY 100 g
PRODUCT LIFE EXPECTANCY: ≥ 500 M/s cycles
IP RATING: IP62 – IP65

IDENTIFICATION CODE

D  R  X  8  4  1  1  0  8  C  2  XX

- OUTLETS
  1 Outlet

- FLOW RATE (at 6 bar)
  R 300 Nl/min (150 Nl/min + 150 Nl/min)

- VERSION
  Body ported
  D Manifold mounting

- TYPE
  2 2/2

- FUNCTION
  C NC

- CONTROL TENSION
  XX Speed-up in current (24 VDC) 2,1 W
  KK Speed-up in tension (24 VDC) 1,2 W
  YY Integrated speed-up driver 3,2 W

- OPERATING PRESSURE

<table>
<thead>
<tr>
<th>RANGE</th>
<th>MODELS</th>
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<tbody>
<tr>
<td>0</td>
<td>2 - 8 bar XX</td>
</tr>
<tr>
<td>4</td>
<td>0 - 6 bar XX</td>
</tr>
<tr>
<td>8</td>
<td>2 - 6 bar XX / KK / YY</td>
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</tbody>
</table>

- No. ELECTRICAL CONTROLS
  1 1 Control
  2 2 Controls
  H 1 Control (with integrated YY speed-up driver only)

- PORT CONNECTION
  0 Integrated cables IP 62 L = 500 mm
  E M8 connection IP 65
Manifold mounting version (DRX841) with optional M8 connection

Manifold mounting version (DRX841) with optional integrated speed-up driver

CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS KK

<table>
<thead>
<tr>
<th>R</th>
<th>V1 = 24 VDC</th>
<th>t1 = 5 ms</th>
<th>V2 = 4 VDC</th>
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<tbody>
<tr>
<td>N.B. KK MODELS ARE CONTROLLED IN TENSION</td>
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CHARACTERISTICS OF THE ELECTRICAL CONTROL - MODELS XX

<table>
<thead>
<tr>
<th>R</th>
<th>I1 = 3.2 A</th>
<th>t1 = 3 ms</th>
<th>I2 = 0.53 A</th>
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</thead>
<tbody>
<tr>
<td>N.B. XX MODELS ARE CONTROLLED IN CURRENT</td>
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FLOW RATE

Qn = 300 Nl/min