

Relays/Valves

Booster relay



Series IL100



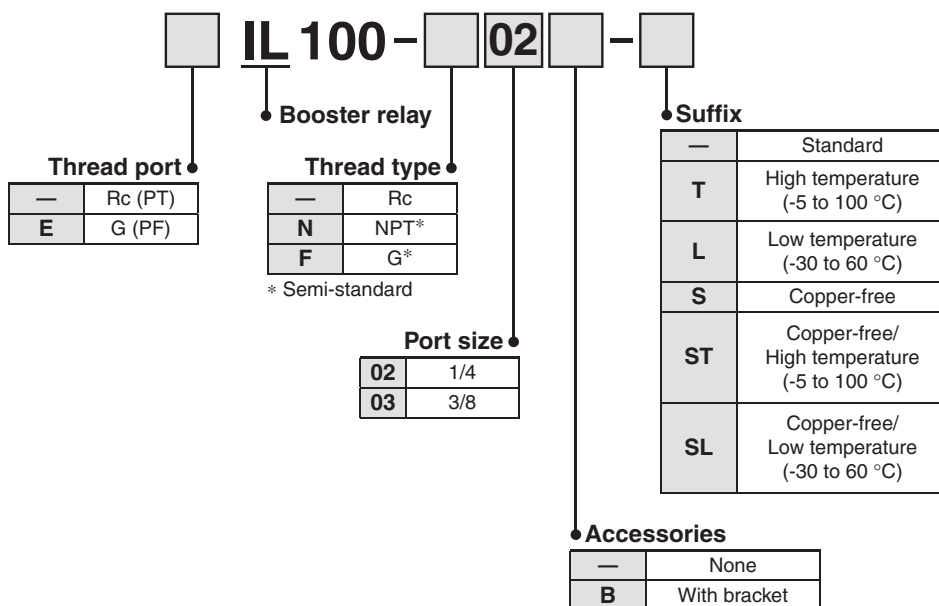
EMC.IL100-01A-UK

Booster Relay Series *IL 100*



- Used when the piping distance between instrumentation and operational area is long, or when operational area has large capacity.
- Can help accelerate actuation speed considerably.

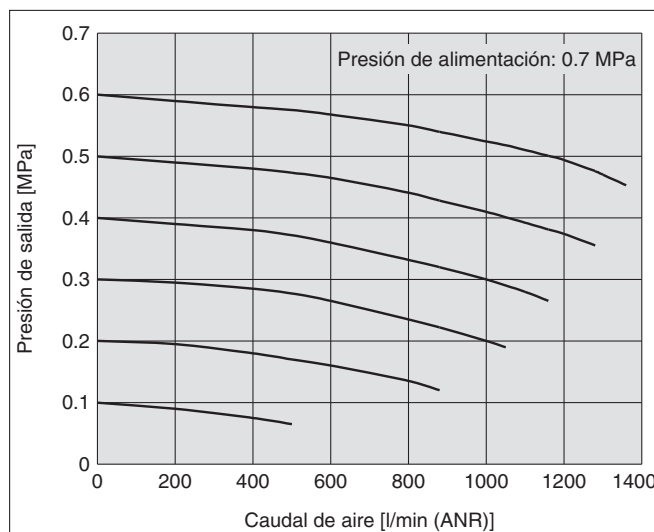
How to Order



Standard Specifications

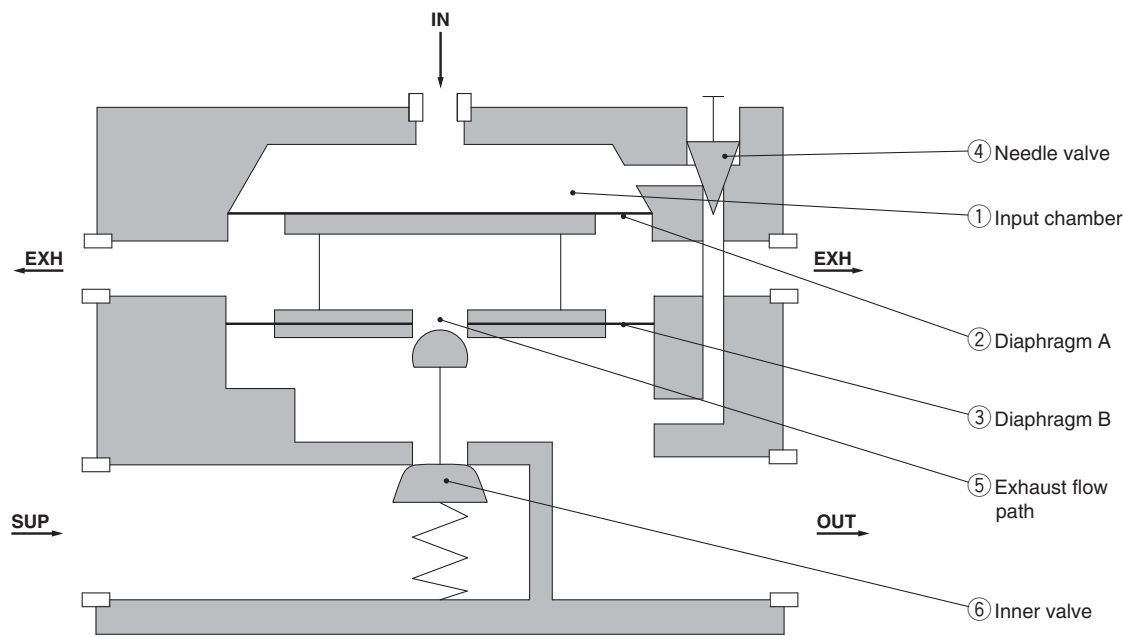
| | |
|-------------------------------|---------------------------------------|
| Supply pressure | Max. 1.0 MPa |
| Input pressure | Max. 0.7 MPa |
| Output pressure | Max. 0.7 MPa |
| Pressure ratio | 1 : 1 |
| Air consumption | 3 l/min (ANR) or less (OUT = 0.5 MPa) |
| Linearity | Within ± 1% |
| Hysteresis | Within 1 % |
| Ambient and fluid temperature | -5 to 60 °C |
| Port size | 1/4, 3/8 |
| Weight | 0.56 kg |

Flow-rate Characteristics



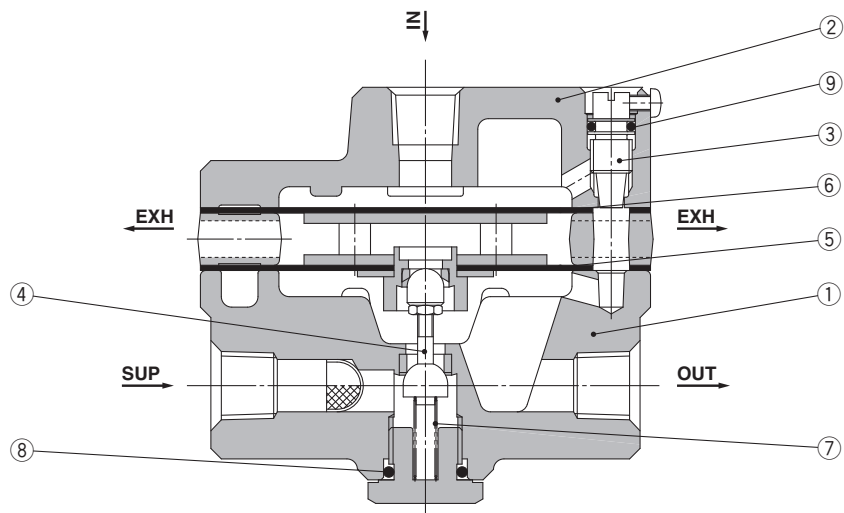
Principle of Operation

IL100



Signal pressure enters the input chamber ① and diaphragm A ② and exerts a downward force on diaphragm B ③. When the force of the input chamber ① exceeds the force of diaphragm B ③, inner valve ⑥ is unseated allowing air flow out the secondary supply port. On signal pressure exhaust the supply valve closes and exhaust flow path ⑤ is opened to allow vent of the secondary air supply to atmosphere. Input and output ports are connected by a needle valve ④. Adjustment ensures that exact equalization occurs between the signal and output supply. The above function allows a low volume signal to provide high volume output with pressure ratio remaining (1:1) for signal to output.

Construction



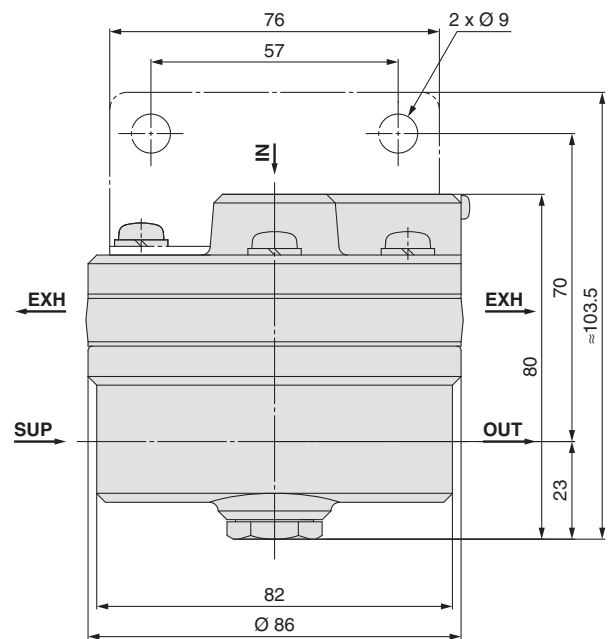
Component Parts

| No. | Description | Material | Note |
|-----|--------------------|---------------------------|----------------------|
| 1 | Valve | Aluminium alloy | Silver baking finish |
| 2 | Cover | Aluminium alloy | Silver baking finish |
| 3 | Throttle valve | Stainless steel | |
| 4 | Inner valve | Stainless steel | |
| 5 | Diaphragm assembly | Aluminium alloy/NBR/Resin | Chromated |
| 6 | Diaphragm | NBR | |
| 7 | Valve spring | Stainless steel | |
| 8 | O-ring | NBR | |
| 9 | O-ring | NBR | |

Replacement Parts

| Model | Order no. | Contents |
|-------|-----------|--------------------------------|
| IL100 | KT-IL100 | Set of left nos. ⑤, ⑥, ⑦, ⑧, ⑨ |

IL100



Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

- Caution:** Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
- Warning:** Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
- Danger:** Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

- The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- Only personnel with appropriate training should operate machinery and equipment.**
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
 - The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
 - Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
 - An application which could have negative effects on people, property, or animals requiring special safety analysis.
 - Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.
Read and accept them before using the product.

Limited warranty and Disclaimer

- The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

- The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

- The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation (Europe)

| | | | |
|----------------|---------------------|-----------------------|-------------------------|
| Austria | ☎ +43 (0)2262622800 | www.smc.at | office@smc.at |
| Belgium | ☎ +32 (0)33551464 | www.smc-pneumatics.be | info@smc-pneumatics.be |
| Bulgaria | ☎ +359 (0)2807670 | www.smc.bg | office@smc.bg |
| Croatia | ☎ +385 (0)13707288 | www.smc.hr | office@smc.hr |
| Czech Republic | ☎ +420 541424611 | www.smc.cz | office@smc.cz |
| Denmark | ☎ +45 70252900 | www.smc.dk | smc@smc.dk |
| Estonia | ☎ +372 6510370 | www.smc-pneumatics.ee | smc@smc-pneumatics.ee |
| Finland | ☎ +358 207513513 | www.smc.fi | smc@smc.fi |
| France | ☎ +33 (0)164761000 | www.smc-france.fr | info@smc-france.fr |
| Germany | ☎ +49 (0)61034020 | www.smc.de | info@smc.de |
| Greece | ☎ +30 210 2717265 | www.smc-hellas.gr | sales@smc-hellas.gr |
| Hungary | ☎ +36 23511390 | www.smc.hu | office@smc.hu |
| Ireland | ☎ +353 (0)14039000 | www.smc-pneumatics.ie | sales@smc-pneumatics.ie |
| Italy | ☎ +39 0292711 | www.smc-italia.it | mailbox@smc-italia.it |
| Latvia | ☎ +371 67817700 | www.smc.lv | info@smc.lv |

| | | | |
|-------------|-----------------------|--------------------------|----------------------------|
| Lithuania | ☎ +370 5 2308118 | www.smc.lt | info@smc.lt |
| Netherlands | ☎ +31 (0)205318888 | www.smc-pneumatics.nl | info@smc-pneumatics.nl |
| Norway | ☎ +47 67129020 | www.smc-norge.no | post@smc-norge.no |
| Poland | ☎ +48 222119600 | www.smc.pl | office@smc.pl |
| Portugal | ☎ +351 226166570 | www.smc.eu | post@smc-smc.es |
| Romania | ☎ +40 213205111 | www.smc-romania.ro | smc-romania@smc-romania.ro |
| Russia | ☎ +7 8127185445 | www.smc-pneumatik.ru | info@smc-pneumatik.ru |
| Slovakia | ☎ +421 (0)413213212 | www.smc.sk | office@smc.sk |
| Slovenia | ☎ +386 (0)73885412 | www.smc.si | office@smc.si |
| Spain | ☎ +34 902184100 | www.smc.eu | post@smc-smc.es |
| Sweden | ☎ +46 (0)86031200 | www.smc.nu | post@smc.nu |
| Switzerland | ☎ +41 (0)523963131 | www.smc.ch | info@smc.ch |
| Turkey | ☎ +90 212 489 0 440 | www.smc-pneumatik.com.tr | info@smc-pneumatik.com.tr |
| UK | ☎ +44 (0)845 121 5122 | www.smc-pneumatics.co.uk | sales@smc-pneumatics.co.uk |

SMC CORPORATION Akihbara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362