

Installation, Regulation and Maintenance Instructions

Flow Regulator

Series 04, 06, 08, 12, 16
1/4", 3/8", 1/2", 3/4", 1"NPT



HOW TO ORDER

TYPE

RFU = uni-directional flow regulator
RFB = bi-directional flow regulator

SIZE

02N= 1/8" NPT
04N= 1/4" NPT
06N= 3/8" NPT
08N= 1/2" NPT
12N= 3/4" NPT
16N= 1" NPT

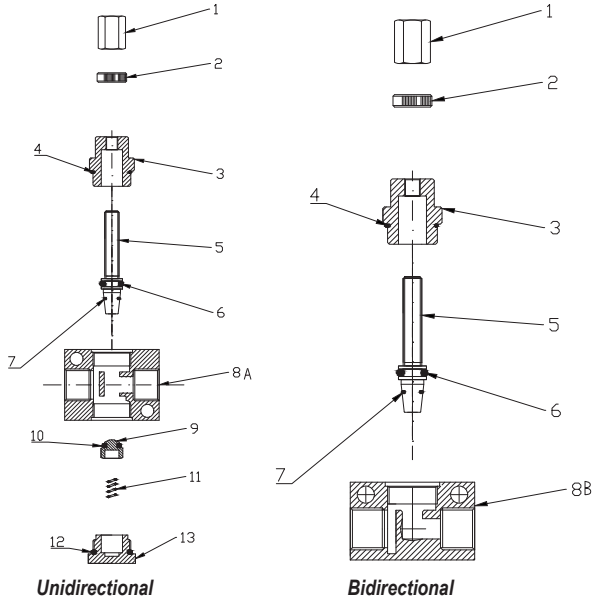
MATERIAL

SS= 316-316L
Stainless steel
AL= Copper free
aluminum alloy

DIAPHRAGM & SEALS MATERIAL

FK= FKM (WT -25° +90°C)
NB= NBR (WT -20° +80°C)
LT= EPDM (WT -40° +80°C)
FL= FVMQ (WT -55° +90°C)
HN= HNBR (WT -55° +90°C)

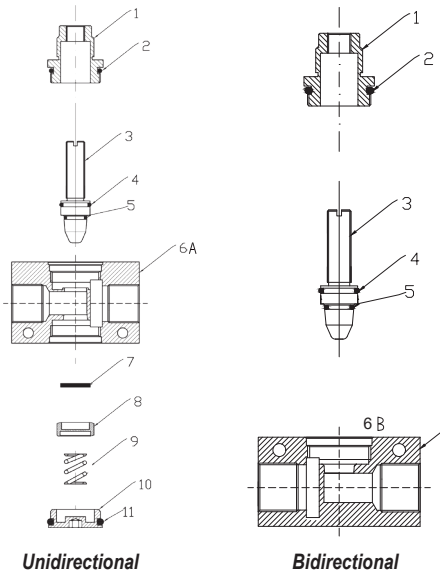
MODEL 04 - SIZE 1/4"NPT



PART LIST

Pos.	Q.ty RFU	Q.TY RFB	Q.TY RFB/V	Descrizione/Description
1	1	1	1	ADJUSTING KNOB
2	1	1	1	LOCKING RING
3	1	1	1	ADJ. SCREW SEAT
4	1	1	1	O'RING
5	1	1	1	NEEDLE
6	1	1	1	O'RING
7	1	1	1	O'RING
8a	1	0	0	BODY UNIDIRECTIONAL
8b	0	1	0	BODY BIDIRECTIONAL
8c	0	0	1	BODY VENT VERSION
9	1	0	0	VALVE
10	1	0	0	O-RING
11	1	0	0	VALVE SPRING
12	1	0	0	O-RING
13	1	0	0	PLUG
14	1	0	1	PLUG VENT VERSION
15	1	0	1	O-RING

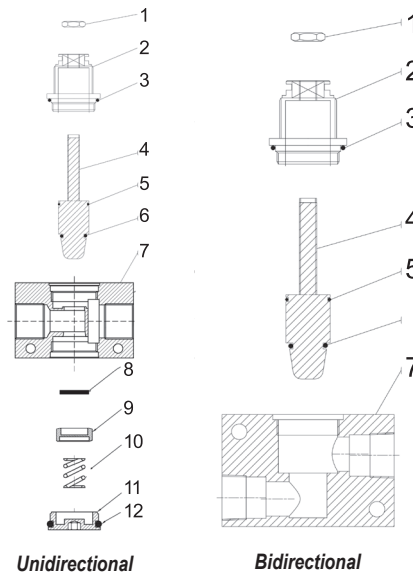
MODEL 06, 08 - SIZE 3/8", 1/2"NPT



PART LIST

Pos.	Q.ty RFU	Q.TY RFB	Descrizione/Description
1	1	1	ADJ. SCREW SEAT
2	1	1	O'RING
3	1	1	NEEDLE
4	1	1	O'RING
5	1	1	O'RING
6a	1	0	BODY UNIDIR. 3/8"N
6b	0	1	BODY BIDIR. 3/8"N
7	1	0	DIAPHRAGM
8	1	0	SHUTTER
9	1	0	VALVE SPRING
10	1	0	PLUG
11	1	0	O'RING

MODEL 12, 16 - SIZE 3/4", 1"NPT



PART LIST

Pos.	Q.ty RFU	Q.TY RFB	Descrizione/Description
1	1	1	NUT
2	1	1	ADJ. SCREW SEAT
3	1	1	O' RING
4	1	1	NEEDLE
5	1	1	O'RING
6	1	1	DIAPHRAGM
7a	1	0	BODY UNIDIR.
7b	0	1	BODY BIDIR.
8	1	0	DIAPHRAGM
9	1	0	SHUTTER
10	1	0	VALVE SPRING
11	1	0	PLUG
12	1	0	O' RING

REPAIR KIT 1/4"NPT

K-RF-04-SS-**
for RF 1/4"NPT
contains:
4, 6, 7, 10, 12, 15

** Refers to seals type:
FK→FKM NB→NBR
LT→EPDM FL→FVMQ
HN→HNBR

REPAIR KIT 3/8", 1/2"NPT

K-RF-08-SS-**
for RF 3/8, 1/2"NPT
contains:
2, 4, 5, 11

** Refers to seals type:
FK→FKM NB→NBR
LT→EPDM FL→FVMQ
HN→HNBR

REPAIR KIT 3/4", 1"NPT

K-RF-16-SS-**
for RF 3/4, 1"NPT
contains:
3, 5, 12

** Refers to seals type:
FK→FKM NB→NBR
LT→EPDM FL→FVMQ
HN→HNBR

For technical info refer to the corresponding technical data sheet

INSTALLATION, REGULATION & MAINTENANCE INSTRUCTIONS

AISI316 and Aluminium Flow Regulator - 04, 06, 08, 12,16



1.INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

Caution It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2.DESCRPTION

The Flow regulators are generally used to control the outflow of a media. A typical application is the speed control of an actuator. A complete range of needle valves and flow regulators provides a variety of choices between uni or bidirectional versions and different precision features.

3. OPERATION

Adjusting the speed of actuator by opening the needle slowly after having closed it completely. Loose of needle valve may cause unexpected sudden actuator extension.

Turning clockwise the adjustment knob the quantity of flow passing through the regulator decreases. Turning the adjusting knob counter clockwise, you increase the quantity of flow through the flow regulator.

When needle valve is turned counter/clockwise it is open and cylinder speed increase.

The flow rate is adjusted in the direction indicated by the arrow. In the direction opposite the flow, typically to cylinder supply, is free and not adjusted.

If the cylinder pressure falls below the inlet pressure, the pressure differential on the diaphragm will close the exhaust Port 3, preventing further exhaust.

4. PNEUMATIC DIAGRAM

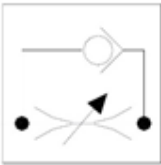


Fig.1 Unidirectional RF



Fig.2 Bidirectional RF

5. TECHNICAL FEATURES

Medium: compressed air or inert gases, filtered, lubricated and not lubricated

Port thread: 1/8", 1/4", 3/8", 1/2, 3/4", 1" NPT

Max pressure: 12bar

Materials: Body - SS316L or Aluminum alloy

Internal parts: SS316 or galvanized steel (all vers)

MATERIAL		TEMPERATURE		
DIAPHRAGM	SEALS	TRANSPORT	STORAGE	OPERATING
NBR	NBR	-20°C...+80°C	-20°C...+80°C	-20°C...+80°C
FKM	FKM	-25°C...+90°C	-25°C...+90°C	-25°C...+90°C
EPDM	EPDM	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
FVMQ	FVMQ	-55°C...+90°C	-55°C...+90°C	-55°C...+90°C
HNBR	HNBR	-55°C...+90°C	-55°C...+90°C	-55°C...+90°C

6.TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep valves clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURES".

To avoid contamination of impurities during the storage period, don't remove thread protection caps; remove them just before the installation phase.

7. INSTALLATION

Warning Before performing any work, read this manual and study all figures. Assume yourself that you understand and you can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before installing the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines and disconnect all electrical power.

- Please operate within the range of specified capacity in the manual. If exceeded, the product can be damaged and may result in serious damages and accidents.
- Make sure to use pressure reading device when setting pressure level.
- Install in correct order when other devices are being operated.

8. MOUNTING

- Any direction
- With air flow in direction of arrow according to label.
- Connect piping to proper ports using pipe thread sealant on male threads only. Do not allow sealant to enter interior of unit.

9. TESTING

- Apply inlet pressure, then turn adjustment (1) clockwise to decrease and counterclockwise to increase outlet pressure setting.
- Once required pressure is achieved tighten locknut (2) to lock setting.

NOTE

Warning In option has a "Anti-tamper system" to avoid the un-authorized modification of the setting. This option is mandatory for safety related applications.

10. MAINTENANCE

Warning Before performing any work, read this manual and study all figures. Assume yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before uninstalling the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines; disconnect all electrical power.

• Shut off inlet pressure. Reduce pressure in inlet and outlet lines to zero.

- Turn adjustment screw fully counter clockwise.
- Disassemble in general accordance with the item numbers on exploded view.

A.Ordinary maintenance

Caution The RF should be periodically checked for proper functioning:

- Clean the RF from impurities and dirt;
- Visually check of the integrity of the body of RF;
- Check that there aren't leakages;
- Check the correct functionality of the RF.

C. Assembly/Disassembly

- Assemble/disassemble the unit as shown on the exploded view.

D. Repair Kit

K-RF-*-SS-**

* Refers to size: 04→for RF 1/4"NPT;

08→ for RF 3/8", 1/2"NPT; 16→ Rfor F 3/4", 1" NPT

** Refers to seals type: FK→FKM NB→NBR

LT→EPDM FL→FVMQ HN→HNBR

Too see part included see other page.

11. MARKING ACORDING TO 2014/34/UEAtex

II 2G Ex h IIC T6/T5 Gb X

II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitable potential.

Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

Before performing any work, read this manual and assure yourself you understand. X at the end of ATEX substitutes T amb depending on used seals based on the following correspondance:

Series VB, EP, VSR, LK04: NBR=-20°C+80°C, FMK=-25°C+90°C,

EPDM=-40°C+80°C, FVMQ & HNBR=-60°C+90°C

Series: DP, RF, LK08, TF: NBR=-20°C+80°C, FMK=-25°C+90°C,

EPDM=-40°C+80°C, FVMQ & HNBR=-55°C+90°C

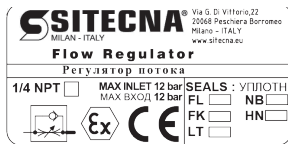
Serie FP: -30°+180°C / Serie SLHF, SLVP, SLSC: -55°C+150°C

Serie PV, PVSL: -20°C +80°C / Serie SCLP: 2°C+80°C

Serie FLGS: -20°C+90°C / Serie VS: -50°C+230°C

LABELS

1/4"NPT Unidirectional

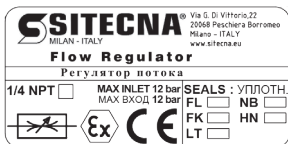


FRONT



BACK

1/4"NPT Bidirectional

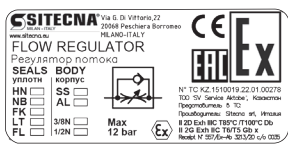


FRONT

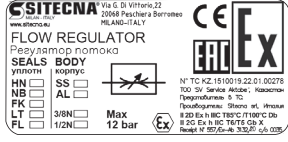


BACK

3/8", 1/2"NPT

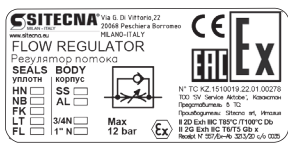


Unidirectional

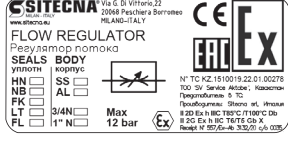


Bidirectional

3/4", 1"NPT



Unidirectional



Bidirectional

Dichiarazione di conformità UE

In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity

In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Product	mod.	Product	mod.	Product	mod.
Filter	F	Control spool valve	DP	Vacuum pump	ST-VP
Regulator	R	Poppet Valves	EP	Silencer	SLHF, SLVP, SLSC
Filter Regulator	FR	Quick exhaust valve	VSR	Dust excluder	PV, PVSL
Back Pressure valve	BP	Lock-up valve	LK	Pressure gauge	MBSS, MBS6, MBSN
2 ways switching valve	SV	Overload protector	SCLP	Vacuum pump	ST-VP
3 ways switching valve	S3	Flow regulator	RF	Ball valve	VS
Volume Booster	VB	Tee Filter	TF		

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per following reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2011	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:



II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.

In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.

This declaration of conformity is issued under exclusive responsibility of the manufacturer.

Milan, 08/02/2022
Davide Matteo De Corrado
Managing Director

