

XR63 · 64 · 65 Pressure Regulators



OUTLINE

This is a pressure regulator developed for semiconductor process control. Dust occurrence and measuring fluid stagnancy are effectively prevented, assuring high reliability.

FEATURES

- The smooth operation of a knob is provided. Secondary pressure in compliance with knob movement is excellent.
- By performing ultraclean (UC) treatment, conditions for keeping an environment clean is satisfied.
- A small, high-performance pressure sensor equipped with a semiconductor strain gauge for measuring primary (original) pressure and secondary (adjusted) pressure is installed and measured pressures will be digitally indicated.

XR63 (For low flow rate)

Designing is on the basis of the standard of the process condition such as low pressure, 0.5 MPa and flow with a few ml to 5 L/min momentary pressure falling is small and it is stable.

XR64 (For medium flow rate)

This model has a wide application from low pressure process and high pressure cylinder flow characteristics are stable.

XR65 (For large flow rate)

In the semiconductor manufacturing process mass flow is required in purging gas line and carrier gas (rarefied gas) and it is relatively compact.

SPECIFICATION 1

Fluid :

Various kinds of process gases

Operating condition :

Under the normal condition, where there is no inflammable gas or liquid which cause the ignition or explosion.

Pressure sensor :

XR63 No sensor

XR64 · 65 It does it or 2 that is sensor

* Pressure sensor is manufactured as combination with digital inductor or exclusive amplifier.

Max. flow :

XR63 20 L/min (normal)

XR64 50 or 100 L / min (normal)

XR65 500 L/min (normal)

Input (Primary):

XR63 1 MPa (10 kgf/cm²)

XR64 1 or 20 MPa (10 or 200 kgf/cm²)

XR65 5 MPa (50 kgf/cm²)

Out put (Secondary) :

0.01 ~ 0.3 MPa (0.1 ~ 3 kgf/cm²)

or 0.02 ~ 0.7 MPa (0.2 ~ 7 kgf/cm²)

Connection :

1/4", 3/8", 1/2"

(UJR fitting, VCR fitting, JSK fitting, MCG fitting, CVC fitting)

Gas contact part :

Body 316L st.st.

Valve seat CTFE, Fluoric resin or polyimide resin

Valve spring 316 st.st.

C ring Pure nickel (XR63 is CTFE)

Pressure sensor 630 st.st. (17-4PH st.st.)+SiO₂ coating

* For the fitting material, CRP treatment and the double vacuum melting materials are also available. Please contact us for further details.

Surface treatment of gas contact parts :

Ultra-clean (UC)treatment

Based on the thorough quality control from the manufacturing to the shipment, we offer "the total clean system" especially our technology for surface treatment, welding and super cleaning is very much characterized and we are very much paying attention to such technology.

SPECIFICATION 2

Leakage (He vacuum method) :

$1.01 \times 10^{-11} \text{ Pa} \cdot \text{m}^3/\text{s}$ or less

$(1 \times 10^{-10} \text{ atm} \cdot \text{cc/s})$ or less

Particle:

Zero-count for 0.1 μm or greater garn teed by in
spection before shipment

Weight:

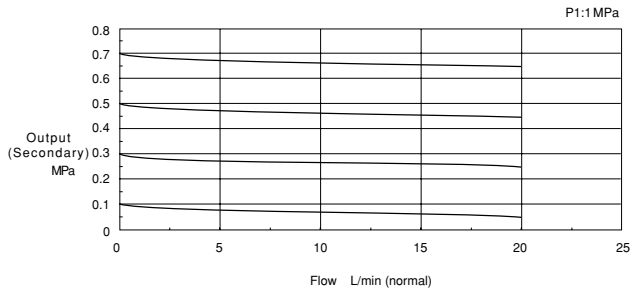
XR63 Approx. 0.6 kg

XR64 Approx. 1.2 kg

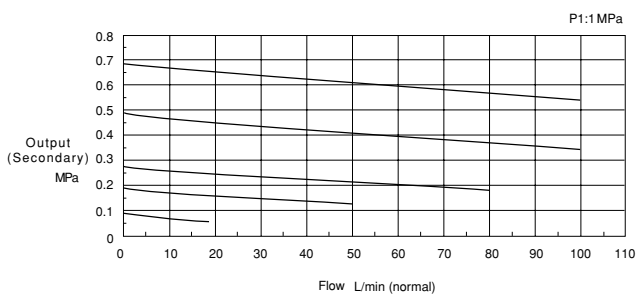
XR65 Approx. 5 kg

FLOW CHARACTERISTIC

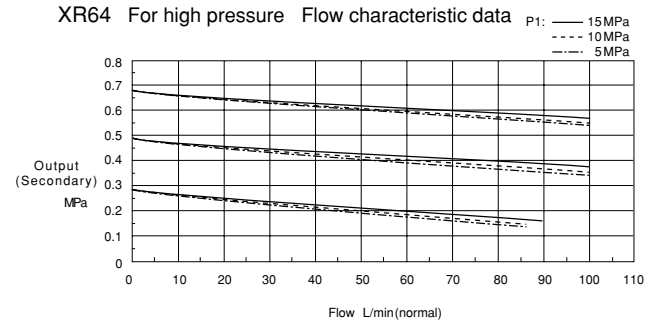
XR63 Flow characteristic data



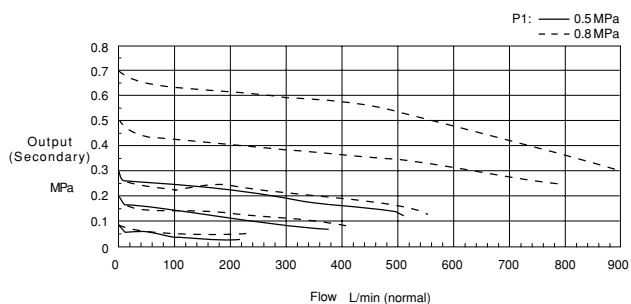
XR64 For low pressure Flow characteristic data



XR64 For high pressure Flow characteristic data

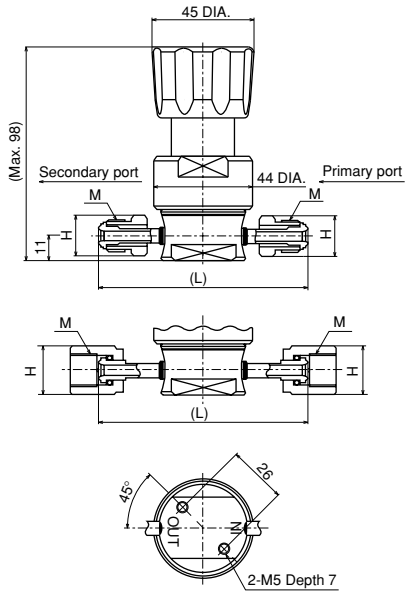


XR65 Flow characteristic data



DIMENSIONS 1

XR63 Pressure regulator (For low flow rate)

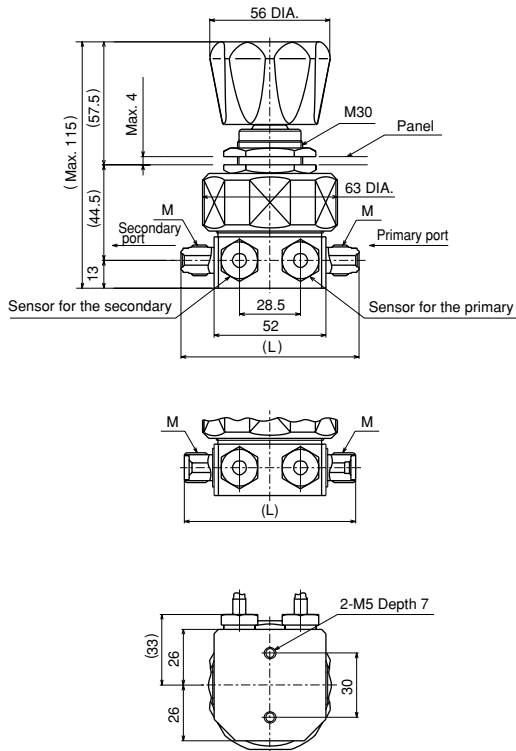


Model No.	Connection of fitting	Piping DIA.	Size M	Dimensions	
				H	(L)
XR63-0J1	VCR Male nut	1/4"	9/16-18 UNF	16 × 18.5 Hex.	92.8
XR63-0L1	VCR Female nut*			19 × 21.9 Hex.	92.8
XR63-0N1	UJR Male nut			17 × 19.6 Hex.	99
XR63-0Q1	UJR Female nut (With pure ring)			19 × 21.9 Hex.	99

* Bearings are not included

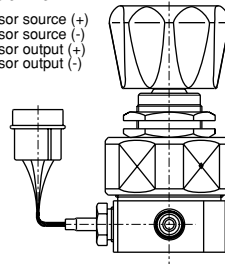
XR64 Pressure regulator (For medium flow rate)

Drilled out material



• Power source 5V DC

- 1 (Red) Sensor source (+)
- 2 (White) Sensor source (-)
- 3 (Green) Sensor output (+)
- 4 (Blue) Sensor output (-)



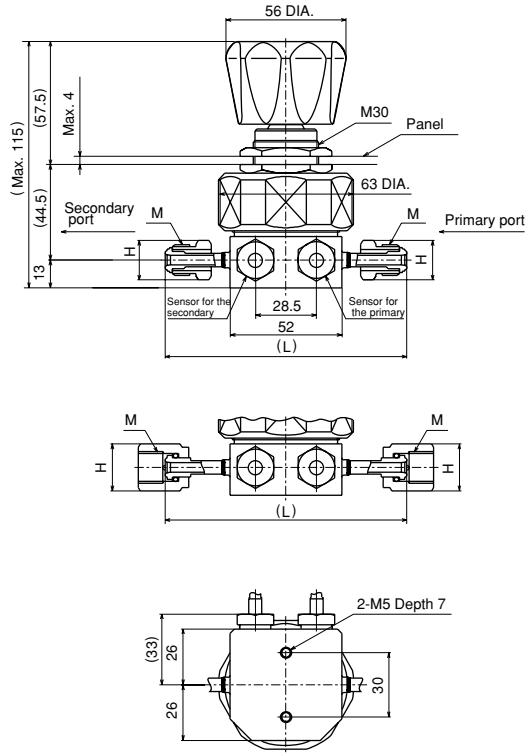
Model No.	Connection of fitting	Piping DIA.	Size M	Dimensions
				(L)
XR64-□31	Compatible with VCR Male	1/4"	9/16-18 UNF	83
XR64-□61	MCG Male	1/4"	M14 × 1.25	80
XR64-□71	MCG Male	3/8"	M18 × 1.5	80

DIMENSIONS 2

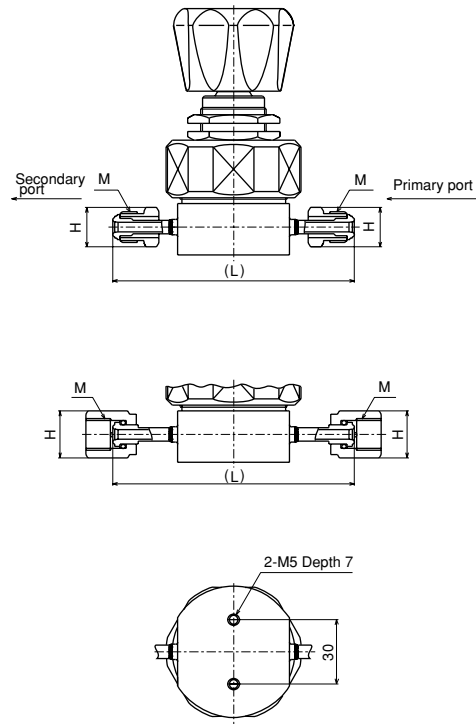
XR64 Pressure regulator (For medium flow rate)

Coupling welding type

Pressure sensor buile-in type



Pressure sensor anonymous



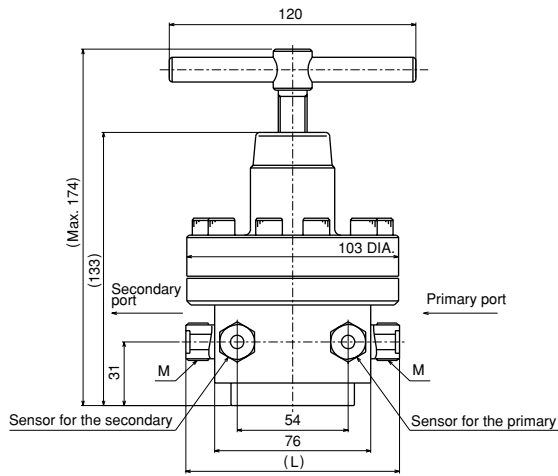
Model No.	Connection of fitting	Piping DIA.	Size M	Dimensions	
				H	(L)
XR64-□ E1	Male nut (TOM JOINT) *1	1/4"	9/16-18 UNF	16 × 18.5 Hex.	122
XR64-□ F1	Male nut (TOM JOINT) *1	3/8"	7/8-14 UNF	24 × 27.7 Hex.	127
XR64-□ G1	Female nut (SUPER TOM JOINT) *1	1/4"	9/16-18 UNF	19 × 21.9 Hex.	111
XR64-□ H1	Female nut (SUPER TOM JOINT) *1	3/8"	7/8-14 UNF	27 × 31.2 Hex.	115
XR64-□ J1	VCR Male nut	1/4"	9/16-18 UNF	16 × 18.5 Hex.	112.8
XR64-□ K1	VCR Male nut	3/8"	7/8-14 UNF	24 × 27.7 Hex.	122.6
XR64-□ L1	VCR Female nut *2	1/4"	9/16-18 UNF	19 × 21.9 Hex.	112.8
XR64-□ M1	VCR Female nut *2	3/8"	7/8-14 UNF	27 × 31.2 Hex.	113.8
XR64-□ N1	UJR Male nut	1/4"	9/16-18 UNF	17 × 19.6 Hex.	124
XR64-□ P1	UJR Male nut	3/8"	7/8-14 UNF	23 × 26.6 Hex.	132
XR64-□ Q1	UJR Female nut (With pure ring)	1/4"	9/16-18 UNF	19 × 21.9 Hex.	119
XR64-□ R1	UJR Female nut (With pure ring)	3/8"	7/8-14 UNF	26 × 30 Hex.	132

* 1 Compatible with VCR

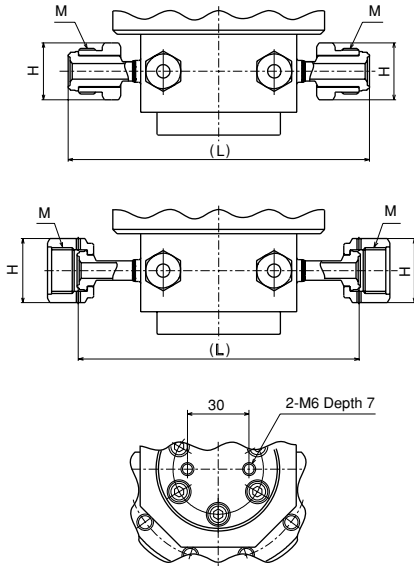
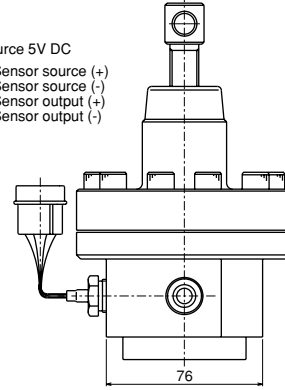
* 2 Bearings are not included

DIMENSIONS 3

XR65 Pressure regulator (For large flow rat)



- Power source 5V DC
- 1 (Red) Sensor source (+)
- 2 (White) Sensor source (-)
- 3 (Green) Sensor output (+)
- 4 (Blue) Sensor output (-)



Model No.	Connection of fitting	Piping DIA.	Size M	Dimensions	
				H	(L)
XR65-□61	MCG Male	3/8"	M18 × 1.5	—	104
XR65-□71	MCG Male	1/2"	M22 × 1.5	—	108
XR65-□J1	VCR Male nut	3/8"	7/8-14UNF	24 × 27.7 Hex.	146.6
XR65-□K1	VCR Male nut	1/2"			
XR65-□L1	VCR Female nut *	3/8"		27 × 31.2 Hex.	137.8
XR65-□M1	VCR Female nut *	1/2"			

* Bearings are not included

Type No. constitution

Please specify Type No., each specification and range, when ordering.

Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.

2 Connection In case XR63 • XR64

		Possible or not	
		XR63	XR64
3	1/4" Male ^{*1}	—	○
6	1/4" MCG Male	—	○
7	3/8" MCG Male	—	○
8	1/4" MCG Female nut	○	○
9	3/8" MCG Female nut	—	○
A	1/4" JSK Male nut	—	○
B	3/8" JSK Male nut	—	○
C	1/4" JSK Female nut	○	○
D	3/8" JSK Female nut	—	○
E	1/4" Male nut ^{*1} (Tom joint)	○	○
F	3/8" Male nut ^{*1} (Tom joint)	—	○
G	1/4" Female nut ^{*1} (Super Tom joint)	○	○
H	3/8" Female nut ^{*1} (Super Tom joint)	—	○
J	1/4" VCR Male nut	○	○
K	3/8" VCR Male nut	—	○
L	1/4" VCR Male nut ^{*2}	○	○
M	3/8" VCR Male nut ^{*2}	—	○
N	1/4" UJR Male nut	○	○
P	3/8" UJR Male nut	—	○
Q	1/4" UJR Female nut (With pure ring)	○	○
R	3/8" UJR Female nut (With pure ring)	—	○

2 Connection In case XR65

6	3/8" MCG Male
7	1/2" MCG Male
8	3/8" MCG Female nut
9	1/2" MCG Female nut
J	3/8" VCR Male nut
K	1/2" VCR Male nut
L	3/8" VCR Female nut ^{*2}
M	1/2" VCR Female nut ^{*2}
N	3/8" UJR Male nut
P	1/2" UJR Male nut
Q	3/8" UJR Female nut (With pure ring)
R	1/2" UJR Female nut (With pure ring)

X	R	6	3	For low flow rate
X	R	6	4	For medium flow rate
X	R	6	5	For large flow rate

Model

Pressure regulator



Type No.

1 Pressure sensor

- 0 Without sensor
- 1 1 pc. Secondary side (Heat-resistant cable 3 m include)
XR64 • 65 only
- 2 2 pcs. Primary and secondary side (Heat-resistant cable 3 m include)
XR64 • 65 only

3 Gas contact part

- 1 Body: 316L st.st.
Pressure sensor: 316L st.st. +SiO₂ coat

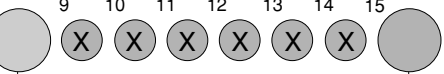
4 Input (Primary)

- 1 1 MPa
- 2 5 MPa
- 3 20 MPa

Model	Input (Primary) MPa	Max. flow L/min (normal)
XR63	1	20
XR64	1 For low pressure	50
	3 For high pressure	50 (Output (Secondary) 0.01 ~ 0.3MPa) 100 (Output (Secondary) 0.02 ~ 0.7MPa)
XR65	5	500

*1 Compatible with VCR *2 Bearings are not included

Additional spec. (Option)



8 Other additional spec.

- 0 Nil
- 1 Please specify your requirement
Sensor cable length specification
(XR64 • 65 only)

6 Seat material

- C CTFE resin
- F Special fluorine resin (CO₂ business)
- P Polyimide resin (N₂O business)

5 Out put(Secondary)

- 1 0.01 ~ 0.3MPa
- 2 0.02 ~ 0.7MPa

15 Document

- 0 Nil
- 1 Please specify your requirement
Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

The contents in the catalogue are subject to change without notice.

NK NAGANO KEIKI CO., LTD.



UEDA FACTORY (JQA-0794)
MARUKO FACTORY (JQA-0789)

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