Air unit

Air unit components

Overview

Air units consist of modularized and integrated various air components which are necessary for pneumatic control and actuator drive between filter regulators and valves. The conventional design and piping man-hour are dramatically changed.



CONTENTS

Product introduction	876
Custom air unit	881
Air unit custom order product	927
Valve air unit	929
Air unit components	939
▲Safety precautions	966



Sensor/ controller

Total air system

Main line unit

Ending

Clean air unit Air unit High polymer membrane air dryer

CXU Series

F.R.L. unit Pneumatic auxiliary components

Next-generation pneumatic unit





Modules of various pneumatic components including filter regulators and valves essential to pneumatic control and actuator drive have been packaged in the air unit CXU Series. The conventional design/piping man-hour will be dramatically reduced.



F.R.L

Pneumatic

auxiliary components Air unit

Precision

Pressure sensor

Sensor/ controlle

Total air system

Main line unit

Ending

unit

No piping, no complicated work

Space saving without piping

Ordering a single unit completes the whole work without complicated piping design and piping work. Space saving and well-organized without piping and tube.

Installation of individual devices is not necessary and therefore no installation dimension error due to tightening pipes occurs.



High quality

No screw-in part is included and therefore external leakage can be prevented. Entry of foreign matter during piping can be prevented.

Flexible combination

Unrestricted in vertical/horizontal direction.

Vertical and horizontal piping can be changed flexibly. Direct connection of solenoid valve is possible. It is easy to lay out and requires less piping design work. (AIR UNIT custom order product)

Flexible change and expansion

Module connection enablesflexible change and expansion of pneumatic components. The unit can be attached/detached from the front of the equipment and easy to maintain.









Series variation

Air unit

Custom air unit (custom combination model no.)

Precision			Ser	ies	
components	Model	Model no		2000	Page
Pressure sensor	Woder	Model no.	1000	3000 4000	Fage
Sensor/ controller	CXU10 Series	CXU10-UN-	•		884, 885
Main line unit	CXU13 Series	CXU13-UN-			890, 891
Ending	CXU30 Series	CXU30-UN-		•	886 to 889

Clean air unit custom order product

nit			Ser	ries	
mer e	Model	Model no.	1000	2000 3000 4000	Page
	Air unit custom order product	CXUZ-FL	•	•	928

Valve air unit (model no. for manifold)

		Sei	ries			
Model	Model no.	1000	2000 3000 4000	Page		
2 port pilot operated solenoid valve	CXU10-GEXA	•		930		
5 port pilot operated valve	CXU30-M4G2		•	934		

Air unit components	(single uni	t model	no.)
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Air unit components (single unit mo	odel no.)				Air unit components
		Se	ries		Precision
Model	Model no.	1000	2000 3000 4000	Page	components Pressure sensor
2 port pilot operated solenoid valve	CXU10-EXA	•		942	Sensor/ controller
2 part direct acting colonaid valve	CXU10-FAB3	•		944	Air system Main line unit
2 port direct acting sciencia valve	CXU30-FAB4U		•	946	Ending
2 port pilot kick type solenoid valve	CXU30-ADK		•	948	Clean
2 port pilot operated solenoid valve	CXU30-FAD		•	950	- air unit
5 port pilot operated valve	CXU30-4G2		•	952	High polymer membrane air dryer
Module check valve	CXU10-CHV	•		958	
	CXU10-D4	•		960	-
4-way distributor	CXU30-D4		•	960	-
Tura adapter	CXU10-TA	•		962	-
Turn adaptor	CXU30-TA		•	962	-
Masking adaptor	CXU10-MA	•		963	
Module conversion adaptor	CXU13-CA		•	964	

CXU Series Series variation

F.R.L. unit

Pneumatic auxiliary components

Custom unit

Model no. for custom combinations

Overview

Complicated pneumatic components can be configured by purchasing customized units. Work such as piping is eliminated and the unit can be used immediately.

Features

- Flexible combinations
 Flexible layouts reduce the
 man-hours required for design.
- (2) Simplified order placement Units can be purchased using only one form, making order placement and delivery management easy.
- (3) Reduced man-hours FR components and solenoid valves are connected as a module, eliminating work such as piping.
- (4) Space saving
 Piping free and fitting free simple design.
 Compact design that fits into

limited spaces. (5) Front access

Units can be easily mounted/ removed and added from the front. The maintenance operation is also easy.

Descriptions of icons

(1) Dedicated model no.

For custom order

for custom

combinations The model no. that includes -UN is dedicated for custom combinations. Applicable components cannot be purchased individually.

(2) Face to face

dimensions Face to face dimensions are shown in icons.

Screw free open type

Face to

face 56 mm

(3) Cannot be used at terminals

Since no connection screw is provided, a masking adaptor or piping adaptor is required for use at terminals.

CONTENTS

- <F.R.L components, solenoid valve>
- Filter/regulator
- Reverse filter/regulator
- Air filter
- Oil mist filter
- High performance oil mist filter
- Regulator
- Reverse regulator
- Lubricator
- Mechanical pressure switch
- Shut-off valve
- Slow start valve
- 2 port direct acting solenoid valve
- 2 port pilot kick type solenoid valve
- 2 port pilot operated solenoid valve
- 5 port pilot operated valve
- <Distributor, adaptor>
- Module check valve
- Distributor
- Turn adaptor
- Piping adaptor
- L type piping adaptor
- Masking adaptor
- Module conversion adaptor
- <Joiner, bracket>
- Joiner
- T type bracket

F.R.L. Pneumatic auxiliary components

Air unit

Precision components

Pressure sensor

Sensor/ controller

Total air system

Main line unit

Ending

Clean air unit Air unit High polymer membrane air dryer

CKD

881

Series variation

F.R.L. unit

Pneumatic auxiliary components

Custom unit

<F.R.L components, solenoid valve>

components	[-	Madula	1								
Precision components	Series	Model no.	Module		P		size (1)		Page	
Droceuro			1000 Series 3000 Serie	s φ 4	φ6	φ8	1/8	1/4	3/8	1/2	_	
sensor	Filter/regulator	W2000										
Sensor/		W3000	Ĭ					ŏ	Ŏ		892	
controller	Ŵ	W4000	l l									
Total	Reverse filter/regulator	W1100					\bullet					
system		W2100									894	
Main line	l l	W4100										
unit	Air filter	F1000			<u> </u>			ŏ				
Ending		F2000						Ŏ			006	
Linding		F3000									090	
		F4000	•	_								
	• Oil mist filter	M1000										
Clean air unit	1	M2000			-				Ĭ		898	
Air	Ψ.	M4000	Ŏ					Ŏ	Ŏ			
unit	High performance oil mist	MX1000										
High polymer	filter	MX3000									900	
membrane air dryer		MX4000										
	Pequiator	R1000							-			
	• Regulator	R2000						Ŏ			000	
		R3000									902	
		R4000							\bullet			
	Reverse regulator	R1100										
		R2100 R3100			-						904	
		R4100	Ĭ					Ŏ	Ŏ	\bullet		
	Lubricator	L1000										
		L3000									906	
	E.	14000			-							
		P4000			-						007	
	switch			-					•		907	
		PTI00-UN	•				-				908	
		P4100-UN	•	_	<u> </u>				•	•		
	Shut-off valve	V1000									909	
		V3000								\bullet	000	
		V3010							\bullet	\bullet	910	
	Slow start valve	V3301										
	15 163										911	
		V3321							\bullet	\bullet		
	• 2 port pilot operated											
	solenoid valve										012	
											312	
	• 2 port direct acting	CXU10-FAB3-UN									913	
	solenoid valve										044	
		CXU30-FAB4U-UN									914	
	2 port pilot operated	CXU30-ADK-UN									915	
	solenoid valve										010	
		CXU30-FAD-UN									916	
	• 5 port pilot operated											
	valve	CXU30-4G2-UN									917	
	210										517	
88	4 UKD											

<distributor, adaptor=""></distributor,>											F.R.L.
Carias	Madalaa	Mo	dule		Por	t size	e (O	UT)		Dawa	Pneumatic
Series	Model no.	1000 Series	3000 Series	φ6	φ8	1/8	1/4	3/8	1/2	Page	auxiliary components
Module check valve											Air unit components
	CXU10-CHV-UN	•								920	Precision components
	,										Pressure sensor
	D101-UN	•				•	•				Sensor/ controller
	D401-UN						•	\bullet	\bullet	921	Total air
	D300						•	\bullet			system Main
Turn adaptor	CXU10-TA-UN	•									unit
	CXU30-TA-UN		•							922	Ending
Piping adaptor	A100-UN	•				•	•	•			Clean
	A400-UN		•				•	•	•	923	air unit Air
L type piping adaptor	A101-UN	•				•	•				unit High polymer
	A401-UN		•				•	•	•	923	air dryer
Masking adaptor	CXU10-MA-UN	•									
	CXU30-MA-UN		•							924	
Module conversion adaptor	CXU13-CA-UN									925	

<Joiner, bracket>

Sorioo		Madalina	Module Height to pipe center		center	Daga		
Series		woder no.	1000 Series 3000 Se	ries 4	40	45	55	гауе
T type bracket set	Π	B110-UN	•		•			
		B110-UN-H						926
		B310-UN				\bullet		
Note: T type bracket sets of different height of	annot be combined.	B410-UN					ullet	
 Joiner 	0	C1000-J100-UN	•					026
		C4000-J400-UN	•					920

CXU series Series variation





CXU10 Series custom combination specifications 1000 Series based Quantity Contact Set Issue date 1 1 Slip no. Delivery date Your company name Contact



Indicate the installation position in order from the left as seen from the front.

Purchase order no

For products with the * mark, indicate up or down. Indicate up or down for the regulator's knob direction, and the port up/down for other components.

other components.			¥		┥						Er
Part name	Face to face dimensions	Model no.	Direction			Installati	on positi	on		Field for engineers] └─
Filter regulator	40	W1000W									
T liter regulator	40	W1100W									
Air filter	40	F1000W									aii
Oil mist filter	40	M1000W									
High performance oil mist filter	40	MX1000W									Ai
Dogulator*	40	R1000W									
Regulator	40	R1100W									High
Lubricator	40	L1000W									aird
Pressure switch	28	P1100-UNW		*2					*2		
Shut-off valve	40	V1000W					1		1		1
2 port pilot operated solenoid valve	40	CXU10-EXA-UN-		*2					*2		
2 port direct acting solenoid	40	CXU10-FAB3-UN-		*2					*2		
valve	40	CXU10-FAB3-UN-		*2					*2		
Module check valve*	56	CXU10-CHV-UN-00		*2					*2		
Distributor*	28	D101-UN-00-W		*2					*2		
Turn adaptor	10	CXU10-TA-UN-00									
Piping adaptor	21.5	A100-UNW									
L type piping adaptor*	28	A101-UNW									1
Masking adaptor	10	CXU10-MA-UN-00									
											-
T type bracket set	*1	B110-UN-W									7
T type bracket set	*2	B110-H-UN-W									1
Joiner set		C1000-J100-UN-W									1

*1: The distance from pipe center to fixing face is 40 mm.

*2: The distance from pipe center to fixing face is 45 mm.

*3: When using a product at the end of the combination, a piping adaptor (A100-UN, A101-UN) or masking adaptor (CXU10-MA) shall be used at its end. (The horizontal direction port does not have threads.)

Engineer Comment Field							

Approval	Inspector	Contact

885

CKD

F.R.L. unit

Pneumatic auxiliary components

Air unit components

Precision components

Pressure sensor Sensor/ controller

Total air system

Main line unit



Contact		Quantity	Se	et				Issue	date			/ /	Pne
Slip no.		Delivery date	/	_				Your	compa	ny nam	ne		auxi
				_				Conta	act				
								Purch	nase or	der no			AIL
													Der
Model no.													Pre
CXII3	0 - 10												
			\square										Pre
		V	_										Se
		Flow direction											0
		Biank Left \rightarrow Right \downarrow eff	H										To
													Sy
For products with the * mark in	dicate un or dou	ND .			ndicate the	inetall	ation nos	ition in or	der from	the left a	s soon fro	om the front	M
ndicate up or down for the reg	ulator's knob dire	ection, and the port up/down	for other			 	auon pos			life feit a	s seen no		ur
components.													
	1	1	•			•						1	, Ei
Part name	Face to face dimensions	Model no.	Direction				Installation	on positio	n T	1		Field for engineers	┨└─
	50	W2000W											-
Filter regulator		W2100W											
	63	W3100W											- C
	50	F2000W						+					
Air filter	63	F3000W											A
	50	M2000W						1					- u
Oil mist filter	63	M3000W											Hię
High performance oil mist filter	63	MX3000W											air
	50	R2000W											
Regulator*		R2100W											
	63	R3000W											_
		R3100W											-
Lubricator	63	L3000W											-
Pressure switch	31.5	P4000VV		*2							*2		-
	51.5	V3000W		2							2		-
Shut-off valve	63	V3010W						1			1		-
		V3301W-						1					1
Slow start valve	63	V3321W-											-
2 port direct acting solenoid	50	CXU30-FAB4U-UN-8L-		*2							*2]
valve	50			2							2		
2 port pilot operated solenoid	63	CXU30-FAD-UN-00-		*2							*2		
valve													-
2 port pilot kick type solenoid	63	CXU30-ADK-UN-00-		*2							*2		
		CXU30-4G2-UN-			\vdash								-
5 port pilot operated valve	56	CXU30-4G2-UN-		*2			1			1	*2		1
Distributor*	31.5	D401-UN-00W		*2							*2]
Distributor	42	D300W											
Turn adaptor	22.5	CXU30-TA-UN-00											
Piping adaptor	*3	A400-UNW											4
L type piping adaptor*	31.5	A401-UNW					<u> </u>			<u> </u>	ļ		-
Masking adaptor	21.5	CXU30-MA-UN-00			$ \vdash $			-	-				-
					├								-
					\vdash								-
		l						l	I				_
T type bracket set	*1	B310-UN-W											
		C4000 1400 LINLW											1

*1: The distance from pipe center to fixing face is 45 mm.
*2: When using a product at the end of the combination, a piping adaptor (A400-UN, A401-UN) or masking adaptor (CXU30-MA) shall be used at its end. (The horizontal direction port does not have threads.)
*3: 20 mm for port size 8, 10 and 15, while 25 mm for 20.

Engineer Comment Field						

Approval	Inspector	Contact



ontact		Quantity	Se	et			Issue d	ate		/ /
lip no.		Delivery date	/	<u> </u>			Your co	mpany nai	ne	
				_			Contac	t		
Madalina							Purcha	se order no).	
	• · · ·									
CXU3	0 — UI									
		↓								
		Flow direction								
		Blank Left → Righ	t							
		X1 Right \rightarrow Lef	ť							
or products with the * mark	, indicate up	or down.		Indic	ate the ins	stallation	position in	order from t	he left as	seen from the front.
dicate up or down for the	regulator's kn	ob direction, and the port	up/down fo	r						
ther components.			¥		. ↓					
Part name	Face to face dimensions	Model no.	Direction			Installati	on position			Field for engineers
	63	W3000W								ļ
ilter regulator		W3100W								ļ
	80	W4000W					+		_	
		W4100W							_	
hir filter	63	F3000W					+			
	80	F4000W					+		_	
)il mist filter	80	M4000W				+	+			<u> </u>
ligh performance oil mist	63	MX3000W				+	+			
lter	80	MX4000W				+	+			
		R3000W								
	63	R3100W								
Regulator*	0.7	R4000W								
	80	R4100W								
	63	L3000W								
_ubricator	80	L4000W								
Pressure switch	80	P4000W								
	31.5	P4100-UNW		*2					*2	
Shut-off valve	63	V3000W								ļ
		V3010W							_	ļ
Slow start valve	63	V3301W-							_	
		V3321W-					+			
port direct acting solenoid alve	50	CXU30-FAB4U-UN-8L-		*2					*2	
nort nilot kick type coloraid							+		-	
alve	63	07030-ADK-UN-UU-		*2					*2	
port pilot operated solepoid		CXU30-FAD-UN-00-								
alve	63			*2					*2	
		CXU30-4G2-UN-								
port nilot operated value	56			*2					*0	
port pilot operated valve	50	CXU30-4G2-UN-		-					2	
Distributor*	31.5	D401-UN-00W		*2					*2	ļ
istributor	42	D300W					+			
urn adaptor	22.5	CXU30-TA-UN-00					+			
riping adaptor	*3	A400-UNW					+			
type piping adaptor*	31.5	A401-UNW					+			
asking adaptor	21.5	CAU30-IVIA-UN-UU				-	+		_	
							+			
						-	+			
		1			1					

*1: The distance from pipe center to fixing face is 55 mm.
*2: When using a product at the end of the combination, a piping adaptor (A400-UN, A401-UN) or masking adaptor (CXU30-MA) shall be used at its end. (The horizontal direction port does not have threads.)
*3: 20 mm for port size 8, 10 and 15, while 25 mm for 20.

Engineer	Comment Field	

Approval	Inspector	Contact



				- 1- 1				L	,	,			
Contact		Quantity	Se	et				Issue	e date			1	/
Slip no.		Delivery date	1	_				Your	compa	ny name	;		
								Cont	tact				
								Purc	hase or	der no.			
Model no													
	~ · · ·												
CXU1	3 — UI	N — (—											
		★											
		Flow direction											
		Blank Left → Right	_										
		X1 Right → Left											
For products with the * mark indic	cate up or down				Indicate the	installatio	n nosition in	order fro	om the left a	s seen from t	the front		
Indicate up or down for the regula	tor's knob directior	n, and the port up/down for other c	omponents.		indicate the		ii position in		une leit a	3 36611 110111	ane nom.		
			\perp			\downarrow							
Part name	Eace to face dimensions	Model no	Direction			V	Installation					Field for er	nineers
	40: 1000	W 000W	Direction		1			. positiOl		1			-ginoc13
Filter regulator	50: 2000 63: 3000	W 100W											
Air filter	40: 1000 50: 2000	F 000W											
	63: 3000												
Oil mist filter	40: 1000 50: 2000	M 000W											
	63: 3000 40	MX1000W			+		+ +			+ +			
High performance oil mist filter	63	MX3000W			1				-	1			
	40: 1000	R 000W											
Regulator	63: 3000	R 100W											
_ubricator	40	L1000W											
	63	L3000W											
Pressure switch	28	P4000W P1100-UNW							-				
	31.5	P4100-UNW		*2							*2		
	40	V1000W											
Shut-oil vaive	63	V3000W											
Slow start valve	63	V3301W-											
		V3321W-							_				
2 port pilot operated solenoid valve	40	CAUIU-EAA-UN-		*2							*2		
0 part direct acting colonaid value	40	CXU10-FAB3-UN-		*0							*0		
2 port direct acting solenoid valve	40			2							2		
2 port direct acting solenoid valve	50	CXU30-FAB4U-UN-8L-		*2							*2		
					+					+ +			
2 port pilot kick type solenoid valve	63	07030-ADK-UN-UU-		*2							*2		
		CXU30-FAD-UN-00-		4-7	1						+5		
2 port pilot operated solenoid valve	63			*2							*2		
		CXU30-4G2-UN-											
5 port pilot operated valve	56	CX1120 4C2 LIN		*2						──┤	*2		
		CAU30-4G2-UN-											
		CXU10-CHV-UN-00			+					+ +			
Module check valve*	56			*2							*2		
Module conversion adaptor	16	CXU13-CA-UN-00		*2							*2		
Distributor*	28	D101-UN-00W	-	*2			<u>↓ </u>			↓]	*2		
Distributor	31.5	D401-UN-00W								+			
Journator	10	CXU10-TA-UN-00			-								
Furn adaptor	22.5	CXU30-TA-UN-00			1					1 1			
Dining adaptor	21.5	A100-UNW											
iping adaptor	*3	A400-UNW											
type piping adaptor*	28	A101-UNW							_	_ ↓			
	31.5	A401-UNW											
Masking adaptor	10	CXU10-MA-UN-00			+					+ - +			
	21.0									+ +			
					1					1 1			
T type bracket set	*1	B110-H-UN-W											
Γ type bracket set	*1	B310-UN-W											
Joiner set		C1000-J100-UN-W											
loiner set		C4000-J400-UN-W											

*1: The distance from pipe center to fixing face is 45 mm.
*2: When using a product at the end of the combination, a piping adaptor (A*00-UN, A*01-UN) or masking adaptor (CXU*0-MA) shall be used at its end. (The horizontal direction port does not have threads.)
*3: 20 mm for port size 8, 10 and 15, while 25 mm for 20.

Engineer Comment Field					





Note on model no. selection

- Note 1: The R1 pressure switch with display section is black.
- Note 2: Select options for each drainage, bowl material, element, and regulator sections. When selecting options for several items, list options in order from the top.
- Note 3: Refer to page 258 for the auto-drain use conditions.
- Note 4: A manual drain cock is attached to all drainage types.
- Note 5: Refer to page 98 for max. processing flow rate when option "Y" is selected.
- Note 6: When the option "T6" is selected, only "Blank" or "R2" can be selected for the attachment (D) (attached). The digital pressure sensor PPX mounting port (Rc1/8) is assembled with ventilated.

Dialitaye	F	Automatic drain with manual override (NO type: Exhaust w/o pressurized)				
Note 3	F1	Automatic drain with manual override (NC type: No exhaust w/o pressurized)				•
	Blank	Polycarbonate bowl	\bullet	\bullet	\bullet	
Bowl	Z	Nylon bowl	\bullet	\bullet	\bullet	
material	М	Metal bowl			\bullet	
	M1 Note 4	Metal bowl with manual drain cock		\bullet		
Floward	Blank	5 μm	\bullet			
Element	Y Note 5	0.3 μm (submicron)			\bullet	
Pressure	Blank	0.05 to 0.85 MPa	\bullet	\bullet		
range	L	0.05 to 0.35 MPa				
Pressure	Blank	Relief mechanism				
relief	Ν	Nonrelief type				
	Blank	With standard pressure gauge (G401)				
Dunanum	Т	Without pressure gauge (gauge port is assembled with sealed)				
Pressure	Т8	Pressure gauge mounting port is assembled with ventilated				
Pressure gauge	T6 Note 6	Digital pressure sensor PPX attachment option				
	R1 Note 1	Pressure switch with display PPD mounted	\bullet		\bullet	
Flow	Blank	Standard flow (left \rightarrow right)				
direction	X1	Reverse flow (right \rightarrow left)				
DAt	tachment	(attached)				
E	Blank	Not attached				
(G45P	G45D-8-P10 (L: G45D-8-P04)	\bullet	\bullet	ullet	
(G49P	G49D-8-P10 (L: G49D-8-P04)				
(G59P	G59D-8-P10 (L: G59D-8-P04)				
(G40P	G40D-8-P10 (L: G40D-8-P04)	•			\bullet
(G52P	G52D-8-P10 (L: G52D-8-P10)	•	•		•
R	2 Note 6	Digital pressure sensor: PPX-R10N-6M				



Filter/regulator Series

Dimensions



Attached		>	K		Y					
pressure gauge	W1000	W2000	W3000	W4000	W1000	W2000	W3000	W4000		
G45P	(74)	(73.5)	(70)	(75)	φ 39	φ 39	φ	39		
G49P	(73.5)	(73)	(69.5)	(74.5)	φ 43.5	φ 43.5	φ 43.5			
G59P	(76)	-	(72)	(77)	φ 52	-	φ 52			
G40P	(75.5)	(75)	(71.5)	(76.5)	φ 42.5	φ 42.5	φ4	2.5		
G52P	(86)	(85.5)	(82)	(86)	φ 52.5	φ 52.5	φ 52.5			
R2	(74)	(73)	(69.5)	(75)	□30	□30		30		

Optional dimensions

Metal bowl (option)



Drain discharge port





Dimensions table

Model no	F1M	М	M1
woder no.	Α	В	С
W2000	-	-	147
W3000	163.5	143.5	154
W4000	187	166.5	177



Air unit compon

Reverse filter/regulator Standard white series W1100/W2100/W3100/W4100-W Series

New series of 5 µm elements for dust removal and 0.3 µm elements for tar removal, with back flow function Port size: Rc1/8 to Rc1/2



A Model no.

CAD

ROH





D Attachment (attached)

Note on model no. selection

- Note 1: The R1 pressure switch with display section is black.
- Note 2: Select options for each drainage, bowl material, element, and regulator sections. When selecting options for several items, list options in order from the top.
- Note 3: Positions of a check valve and pressure gauge cannot be changed. If the IN and OUT direction must be reversed, indicate "X1" at the end of the option field.
- Note 4: Refer to page 258 for the auto-drain use conditions.
- Note 5: A manual drain cock is attached to all drainage types.
- Note 6: Refer to page 98 for max. processing flow rate when option "Y" is selected.
- Note 7: When option "T6" is selected, only "Blank" or "R2" can be selected for the pressure gauge (attached). The digital pressure sensor PPX mounting port
 - (Rc1/8) is assembled with ventilated.

			/1100	/2100	/3100	4100
S	vmbol	Descriptions	15	3	3	3
BPc	ort size					
	6	Rc1/8				
	8	Rc1/4		•	•	•
	10	Rc3/8		•	•	•
	15	Rc1/2			•	•
O Or	otion	No	ote	2.1	lot	е 3
	Blank	Manual drain cock				
Drainage	F	Automatic drain with manual override (NO type: Exhaust w/o pressurized)		-	•	•
Note 4	F1	Automatic drain with manual override (NC type: No exhaust w/o pressurized)		۲	•	•
	Blank	Polycarbonate bowl	•	-	•	•
Bowl	z	Nylon bowl		٠	•	•
material	м	Metal bowl			•	•
	M1 Note 5	Metal bowl with manual drain cock		•	•	•
_	Blank	5 μm		•	•	•
Element	Y Note 6	0.3 µm (submicron)			•	•
Pressure	Blank	0.05 to 0.85 MPa		•	•	
range	L	0.05 to 0.35 MPa		•	•	
Pressure	Blank	Relief mechanism		ullet		
relief	Ν	Nonrelief type		\bullet		
	Blank	With standard pressure gauge (G401)		lacksquare		
D #444	Т	Without pressure gauge (gauge port is assembled with sealed)		lacksquare		
Pressure	Т8	Pressure gauge mounting port is assembled with ventilated		ullet		
gauge	T6 Note 7	Digital pressure sensor PPX attachment option		٠		•
	R1 Note 1	Pressure switch with display PPD mounted				•
Flow	Blank	Standard flow (left \rightarrow right)				
direction	X1	Reverse flow (right \rightarrow left)		lacksquare		lacksquare
DAt	tachment	(attached)				
E	Blank	Not attached				
G45P		G45D-8-P10 (L: G45D-8-P04)		ullet		•
(G49P	G49D-8-P10 (L: G49D-8-P04)		ullet		•
(G59P	G59D-8-P10 (L: G59D-8-P04)				
(G40P	G40D-8-P10 (L: G40D-8-P04)		ullet		
(G52P	G52D-8-P10 (L: G52D-8-P10)		\bullet	ullet	ullet
R2 Note 7		Digital pressure sensor: PPX-R10N-6M				

Digital pressure sensor: PPX-R10N-6M



Filter/regulator Series

Dimensions



φ 52

φ 42.5

φ 52.5

30

Optional dimensions

(76)

(75.5)

(86)

(74)

(75)

(85.5)

(73)

Metal bowl (option)

G59P

G40P

G52P

R2



Drain discharge port



Drain discharge port

(77)

(76.5)

(86)

(75)

(72)

(71.5)

(82)

(69.5)

Dimensions table

φ 42.5

φ 52.5

□30

Madalina	F1M	F1M M		
model no.	Α	В	С	
W2100	-	-	147	
W3100	163.5	143.5	154	
W4100	187	166.5	177	

φ 52

φ 42.5

φ 52.5

30



- options in order from the top. Note 2: Refer to page 258 for the auto-drain use conditions
- Note 3: A manual drain cock is attached to all drainage types.

Dimensions



Y

Blank

X1

Flow

direction

0.3 µm (submicron)

Standard flow (left \rightarrow right)

Reverse flow (right \rightarrow left)

•

Air Filter Series

Dimensions





Dimensions table

Madalina	F1M	М	M1
woder no.	Α	В	С
F2000	-	-	147
F3000	164	143.5	154
F4000	187	166.5	177







Oil mist filter Standard white series

M1000/M2000/M3000/M4000-W Series

Face to face 40 mm

M3000

Face to face 63 mm

CAD

G

Face to face 50 mm

M4000

Face to face 80 mm

A model no.

Ideal for circuits susceptible to oil, including measuring and instrumentation circuits Port size: 1/8 to 1/2



Precision components Pressure sensor Sensor/ controller

Total air system

Main line unit

Ending

Clean air unit

Air unit

High polymer membrane air dryer

F.R.L. unit

Pneumatic auxiliary components

Air unit compon



- mantle, and flow direction sections. When selecting options for several items, list options in order from the top.
- Note 2: NO auto-drain cannot be selected.
- Note 3: Refer to page 258 for the auto-drain use
- conditions. Note 4: A manual drain cock is attached to all drainage types.
- Note 5: Combination with option F1 is not possible. Note 6: This cannot be selected with "M" and "X".
 - e b: I his cannot be selected with "M" and "X". Replace the element before the differential pressure indicator's color changes completely to red.

The differential pressure indicator functions only when the compressed air is flowing. Please note that it does not function only by being pressurized.

			M1000	M2000	M3000	M4000
Symbol		Descriptions				
B Port size						
6		Rc1/8	ullet			
8		Rc1/4	ullet	ullet	\bullet	lacksquare
10		Rc3/8				lacksquare
15		Rc1/2				
C Option				1	lot	e 1
Drainage	Blank	With manual drain cock	\bullet		\bullet	•
Note 2, Note 3	F1	Automatic drain with manual override (NC type: No exhaust w/o pressurized)	ullet	lacksquare	\bullet	•
	Blank	Polycarbonate bowl	ullet	lacksquare	\bullet	•
Douri motorial	Z	Nylon bowl	lacksquare		\bullet	
Bowi material	М	Metal bowl			\bullet	
	M1 Note 4	Metal bowl with manual drain cock			ullet	
Mantia	Blank	M type (nominal 0.01 µm; remaining oil 0.01 mg/m ³ or less)	ullet		\bullet	•
wantie	S	S type (nominal 0.3 µm; remaining oil 0.5 mg/m ³ or less)	lacksquare		\bullet	
(element)	X Note 5	X type (deodorization; remaining oil 0.03 mg/m ³)	lacksquare		\bullet	
Differential pressure indicator	Q1 Note 6	With differential pressure indicator				•
Flow dine stien	Blank	Standard flow (left \rightarrow right)	lacksquare		ullet	
Flow direction	X1	Reverse flow (right \rightarrow left)				

Dimensions



Oil Mist Filter Series

Dimensions



Metal bowl (option)



Dimensions table

Madalina	F1M	М	M1
Model IIO.	Α	В	С
M2000	-	-	147
M3000	164	143.5	154
M4000	187	166.5	177



High performance oil mist filter Standard white series

MX1000/MX3000/MX4000-W Series

Secondary side oil concentration 0.001 mg/m³ Optimal for optical device such as optical type positioning device, laser processing systems

Port size: 1/8 to 1/2

JIS symbol



MX1000

Face to face 40 mm

MX3000

Face to face

63 mm



Cl ai

Ai ur High mer air d

F.R.L. unit

Pneumatic

auxiliary components

Air unit compon

Components								_	
Pressure	How to order						(A) M	lodel	no.
sensor	MX3000-8-W-2	7					8	00	00
Sensor/ controller							1X10	1X30	1X40
Total	(White type)		[S	ymbol	Descriptions	2	2	2
air system		l <u> </u>		BPo	rt size				
Main	A Model no. B Port size				6	Rc1/8	\bullet		
unit					8	Rc1/4	ullet	\bullet	\bullet
					10	Rc3/8		\bullet	\bullet
Ending					15	Rc1/2			\bullet
				C Op	otion			No	te 1
		C Option	l l	Drainage	Blank	With manual drain cock		•	\bullet
Clean air unit				Note 2, Note 3	F1	Automatic drain with manual override (NC type: No exhaust w/o pressurized)	\bullet		\bullet
Air					Blank	Polycarbonate bowl		\bullet	\bullet
unit				Bowl	Z	Nylon bowl		\bullet	\bullet
High polymer		ala afia a	r	material	М	Metal bowl		•	\bullet
membrane air dryer	A Note on model no. s	selection			M1 Note 4	Metal bowl with manual drain cock		•	\bullet
	Note 1: Select options for each drain	age, bowl material		Flow	Blank	Standard flow (left \rightarrow right)	\bullet	\bullet	\bullet
	and differential pressure dete When selecting options for se	ection. everal items, list	c	direction	X1	Reverse flow (right \rightarrow left)	•	\bullet	\bullet

When selecting options for several items, list options in order from the top.

Note 2: NO auto-drain cannot be selected. Note 3: Refer to page 258 for the auto-drain use conditions.

Note 4: A manual drain cock is attached to all drainage types.

Dimensions





Drain discharge port

900

Oil Mist Filter Series

Dimensions



F.R.L. Pneumatic auxiliary components Air unit components Precision				Regulator Standa R1000/R2 Compact, pressur Port size: Rc1/8 to JIS symbol	ard wh 000 e gaug o Rc1/2	hite serie /R30 ge embe 2	s 00/R4000-W S dded ROHS E	21000 ace to face 40 mm 33000 ace to face 63 mm		R200 Face to 1 50 mm R400 Face to 1	
Components	How to order							A	Mod	el n	0.
Sensor/	R3000-8-	• W - (L	_)-(G4	9P				31000	\$2000	\$3000	 4000
Total		/hite type)			S	Symbol	Descriptions				ŕ
air system					BPo	ort size					
Main	A Model no.	ort size				6	Rc1/8	\bullet			
unit						8	Rc1/4	\bullet	•		•
Ending						10	Rc3/8		•		•
Linuing						15	Rc1/2				•
		-									
					COp	otion	- - -		Ν	ote	1
Clean			© Option		C Op Pressure	otion Blank	0.05 to 0.85 MPa		N •	ote	1
Clean air unit			• Option		COp Pressure range	otion Blank L	0.05 to 0.85 MPa 0.05 to 0.35 MPa	•	N	ote	
Clean air unit			C Option		C Op Pressure range Pressure	otion Blank L Blank	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism	•	N	ote	
Clean air unit Air unit		l	Option		COR Pressure range Pressure relief	otion Blank L Blank N	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type		N • • •	ote	
Clean air unit Air unit High polymer membrane			Option		COr Pressure range Pressure relief	otion Blank L Blank N Blank	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401)			ote	
Clean air unit Air unit High polymer membrane air dryer		1	Option		C Or Pressure range Pressure relief Pressure	otion Blank L Blank N Blank T	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed)				
Clean air unit Air unit High polymer membrane air dryer			Option		Pressure range Pressure relief Pressure gauge	otion Blank L Blank N Blank T T8 T8	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roard stapet pressure gauge attacted option (pressre gauge port is assembled with vertilated)				
Clean air unit Air unit High polymer membrane air dryer			Option		Pressure range Pressure relief Pressure gauge	otion Blank L Blank N Blank T T8 T6 Note 2	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Rond stepet pressure gauge attacted option (pressure gauge port is assembled with rentiated Digital pressure sensor PPX attachment option				
Clean air unit Air unit High polymer membrane air diyer			Option		Pressure range Pressure relief Pressure gauge	otion Blank L Blank N Blank T T8 T6 ^{Note 2} R1 ^{Note 3}	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Rand stepel pressure gauge atacket option (pressure gauge port is assembled with reliated Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted				
Clean air unit Air unit High polymer membrane air dryer			Option		C Or Pressure range Pressure relief Pressure gauge Flow	otion Blank L Blank N Blank T T6 Note 2 R1 Note 3 Blank	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Rand stepel pressure gauge atached option (pressure gauge port is assembled with reliabled Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left → right) Provences flow (right → left)				
Clean air unit Air unit High polymer membrane air dryer			Option		COR Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T6 Note 2 R1 ^{Note 3} Blank X1	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Rond stepet pressure gauge attached optin (pressure gauge port is assembled with reliabled) Digital pressure gauge attached optin (pressure gauge port is assembled with reliabled) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left)				
Clean air unit Air unit High polymer membrane air dyer			Option	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T8 T6 ^{Note 2} R1 ^{Note 3} Blank X1	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roard staped pressure gauge attacted option (pressure gauge to its assembled with netitided) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached)				
Clean air unit Air unit High polymer membrane air dyer			Option	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T R1 Note 3 Blank X1 ttachment Blank	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roud steppi pressure gauge (gauge port is assembled with sealed) Roud steppi pressure gauge (gauge port is assembled with sealed) Roud steppi pressure gauge (gauge port is assembled with sealed) Digital pressure gauge atached option (pressure gauge port is assembled with sealed) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached) Not attached				
Clean air unit Air unit High polymer membrane air dryer	▲ Note on mo	del no. s	Option election	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T 8 T6 Note 2 R1 ^{Note 3} Blank X1 tachment Blank G45P	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roud stept pressure gauge attacked option (pressure gauge port is assembled with vertilated) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached) Not attached G45D-8-P10 (L: G45D-8-P04)				
Clean air unit Air unit High polymer membrane air dryer	Note on mo Note 1: When selecting	del no. s	Option Option election	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T8 T6 Note 2 R1 Note 3 Blank X1 tachment Blank G45P G49P	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roud staped pressure gauge atabet option (pressure gauge to its assembled with reliated) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached) Not attached G45D-8-P10 (L: G45D-8-P04) G49D-8-P10 (L: G49D-8-P04)				
Clean air unit Air unit High polymer membrane air dryer	Note 1: When selecting options in order	del no. s options for se from the top.	Option Option election veral items, I	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T8 T6 ^{Note 2} R1 ^{Note 3} Blank X1 tachment Blank G45P G49P G59P	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Rord staped pressure gauge (gauge port is assembled with sealed) Digital pressure gauge atacted optin (pressure gauge port is assembled with sealed) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached) Not attached G45D-8-P10 (L: G45D-8-P04) G59D-8-P10 (L: G59D-8-P04) C40D & P410 (L: C40D & P04)				
Clean air unit Air unit High polymer membrane air dyer	Note 1: When selecting options in order Note 2: When option "TG "R2" can be selecting	del no. s options for se from the top.)" is selected, >cted for the p	Option Option election veral items, I only "Blank" ressure gauge	Attachment (attached)	Pressure range Pressure relief Pressure gauge Flow direction	otion Blank L Blank N Blank T T8 T6 Note 2 R1 Note 3 Blank X1 tachment Blank G45P G49P G59P G40P G52P	0.05 to 0.85 MPa 0.05 to 0.35 MPa Relief mechanism Nonrelief type With standard pressure gauge (G401) Without pressure gauge (gauge port is assembled with sealed) Roud steed pressure gauge (gauge port is assembled with sealed) Digital pressure gauge (gauge port is assembled with sealed) Digital pressure gauge (gauge port is assembled with sealed) Digital pressure sensor PPX attachment option Pressure switch with display PPD mounted Standard flow (left \rightarrow right) Reverse flow (right \rightarrow left) (attached) G45D-8-P10 (L: G45D-8-P04) G49D-8-P10 (L: G59D-8-P04) G40D-8-P10 (L: G40D-8-P04) G52D-8-P10 (L: G52D-8-P10)				

The digital pressure sensor PPX mounting port (Rc1/8) is assembled with ventilated.

Note 3: The R1 pressure switch with display section is black.



Regulator Series

Dimensions





Note 3: When option "T6" is selected, only "Blank" or "R2" can be selected for the pressure gauge (attached). The digital pressure sensor PPX mounting port (Rc1/8) is assembled with ventilated.

Note 4: The R1 pressure switch with display section is black.



Regulator Series

Dimensions







148

Option with manual cock

Maintenance dimension Option with manual cock



Mechanical pressure switch Standard white series

P4000-W Series

Wide pressure setting range covers 0.1 to 0.8 MPa Port size: Rc1/4 to Rc1/2







F.R.L. unit

Pneumatic auxiliary components

Air unit components

Precision components

High polymer membrane air dryer

How to order

			Pressure
P4000 - 8 - W - 1N			sensor
			Sensor/ controller
(White type)	Symbol	Descriptions	Total
	A Port si	ze	system
A Port size	8	Rc1/4	Main
	10	Rc3/8	unit
	15	Rc1/2	
	B Option		Ending
B Option	Blank	Without indicator light	
	1N	100/200 VAC with indicator light	
	3N	24 VDC with indicator light	air unit
	Т	Without pressure gauge	Air
			unit

Dimensions



Refer to modular design F.R.L. for specifications, internal structure, and safety precautions.





52

45

09

22

1

Weight 190 g

37.5

Port size

8: Rc1/4

10[.] Rc3/8

15: 1/2

Refer to modular design F.R.L. for specifications and safety precautions.

Weight 126 g

M3

908 **CKD**

67

<u>∞</u>

Port size

6: Rc1/8

8: Rc1/4

õ

5.5

ŝ

45

光

16

55

1

2



Shut-off valve Standard white series

V1000/V3000-W Series

F.R.L unit Easy exhaust. Prevent residual pressure accidents in pneumatic lines Port size: Rc1/8 to Rc1/2 V1000 V3000 auxiliary components







Air unit components Precision components

Pneumatic

How to order Pressure sensor V3000 **X1** S 8 **W** -(Sensor/ controller Symbol Descriptions Total (White type) air A Model no. system A Model no. V1000 For CXU10 Series Main line unit V3000 For CXU30, CXU40 Series **B**Port size Ending B Port size V1000 V3000 Rc1/8 6 8 Rc1/4 0 • Clean air unit Rc3/8 10 A Select the reverse Rc1/2 15 regulator (R*100-W) or Air unit reverse filter regulator C Option (W*100-W) when installing Option High polyme membrane Blank None the V*000-W onto the X1 IN/OUT reverse flow (right \rightarrow left) air dryer primary side of the regulator or filter regulator. D Attachment (attached) D Attachment Blank Not attached

Dimensions

•V1000





* EXH port is dedicated for installation of the silencer.

V3000

s

Silencer





* EXH port is dedicated for installation of the silencer.



Shut-off valve with locking hole (OSHA compliant)

V3010-W Series

Prevent residual pressure accidents in pneumatic lines Port size: 1/4 to 1/2

JIS symbol

How to use

Regular use

Suction





Exhaust

OSHA (Occupational Safety and Health Administration)

US Safety Standards related to worker safety are established.

<Regulations of Lockout/Tagout> When maintaining machinery, the air source shall be closed with a shut-off valve, and residual pressure shall be discharged. If a third party inadvertently operates the valve during such operation and compressed air is applied, the cylinder, etc., could move suddenly and injure personnel. This standard states that, "All valves used for such purposes shall have a key or a structure which can be locked with a key."

Air unit High polymer membrane air dryer

F.R.L unit

Pneumatic auxiliary components

Air unit compon

Precision components

Pressure sensor

Sensor/ controller

Total

System Main line unit

Ending

Clean air unit

air



Note 2

Dimensions

During maintenance work

Knob

pressure is released.

Valve can be locked where residual

•V3010





EXH Rc3/8

* EXH port is dedicated for installation of the silencer.

Descriptions	С
V3010-8-W	Rc1/4
V3010-10-W	Rc3/8
V3010-15-W	Rc1/2

A Note on model no. selection

Note 1: Contact CKD for locking at the air supply position.

Note 2: The silencer element is not made of flame resistant resin.

Select the reverse regulator (R*100-W) or reverse filter regulator (W*100-W) when installing V3010-W onto the primary side of the regulator or filter regulator.

S

Silencer




2 port pilot operated solenoid valve for compressed air

CXU10-EXA-UN Series NC (normally closed) type, diaphragm structure type JIS symbol OUT Modular connection with 1000 Series enabled Ideal for modular component blow valves $\overline{\mathbf{A}}$

RoHS IN

order CAD Fxnandab

Screw fre open type

or custor

Precision components How to order

F.R.L unit

Pneumatic auxiliary component

Air unit compor



Refer to air unit components on pages 942 to 943 for specifications and internal structure.

В



2 port direct acting solenoid valve

CXU10-FAB3-UN Series

NC (normally closed) type Nodular connection with 1000 Series enabled Ideal for modular component blow valves

ROH

JIS symbol

IN

For custom order

F.R.L. unit

Pneumatic

Screw free open type

Both sides

40 mm

CAD



CKD



Refer to air unit components on pages 946 to 947 for specifications and internal structure.



2 port pilot kick type solenoid valve

CXU30-ADK-UN Series

NC (normally closed) type Diaphragm structure Modular connectable to 2000, 3000 or 4000 Series Suitable for modular component master valves





Face to face

63 mm

For custom

order

CAD

Air unit components

How to order				components
CXU30-ADK-UN-00-F	2C)-(3)			Pressure sensor
	\uparrow \uparrow			Sensor/ controller
		Symbol	Descriptions	Total
		A Sealan	t material	air
A Se		Blank	Nitrile rubber	system
* Dedicated model no. for custom		F	Fluoro rubber	line
combinations.			-41	unit
Applicable components cannot be	B Coil option	BColl ob	btion	
purchased individually.		2C	Grommet lead wire *1	Ending
Refer to page 948 for the model no.		2HS	DIN terminal box with light/surge suppressor (Pg11)	
of your order.		© Rated	voltage	
	C Rated voltage	1	100 VAC 50/60 Hz, 110 VAC 60 Hz	Clean
		3	24 VDC	air unit
				Air
		*1: The coil op	tion 2C can be selected only for rated voltage [1].	unit
				High polymer
				air dryer
				,
Dimonsiona				
				-
-		_		

Grommet lead wire type
 CXU30-ADK-UN-00-*2C-*

 With DIN terminal box (Pg11) type CXU30-ADK-UN-00-*2HS-*





Refer to air unit components on pages 948 to 949 for specifications and internal structure.



Refer to air unit components on pages 950 to 951 for specifications and internal structure.



5 port pilot operated valve CXU30-4G2-UN Series

5 port solenoid valve for modular connection with 2000, 3000, 4000 Series



RoHS



open type

Air unit compon

How to order					Precision components
CXU30-4G2-UN	- (3)(3)-(C6)-(E20 S-3			Pressure sensor
		\top \uparrow \uparrow			Sensor/ controller
			Symbol	Descriptions	Total
A Model no.	B Solenoid valve (1) solenoid position	BSolenc	bid valve (1) solenoid position	air
	Note 2, Note 4, N	lote 5	0	No solenoid valve; masking plate	Main
			1	2-position single; with exhaust malfunction prevention valve	line
			2	2-position double; with exhaust malfunction prevention valve	
			3	3-position all ports closed	Ending
* Dedicated model no. for o	custom		4	3-position ABR connection; with exhaust malfunction prevention valve	
combinations.			5	3-position PAB connection	
Applicable components c	annot be		C Solenc	oid valve (2) solenoid position	Clean
Purchased Individually.	Solenoid vi	alve (2) solenoid position	0	No solenoid valve; masking plate	air unit
no. of vour order.			1	2-position single; with exhaust malfunction prevention valve	Air
, , , , , , , , , , , , , , , , , , ,			2	2-position double; with exhaust malfunction prevention valve	unit
			3	3-position all ports closed	High polymer membrane
			4	3-position ABR connection; with exhaust malfunction prevention valve	air dryer
			5	3-position PAB connection	
			Port si	ze (OUT)	İ
	D Poi	t size (OUT)	C4	α 4 push-in fitting	
			C6	(0.6 push-in fitting	
A N (CI 6	φ 6 push-in fitting L type (facing rear)	
Note on model i	no. selection		C8	(0.8 push-in fitting	
Note 1: The fitting that can be	mounted on the R1 port is]
the same as GWS*-8-3	S. on prevention value is	Electrical	Electri		
provided as standard.		connections	В	DIN terminal box (Pg7) with surge suppressor/light	
3-position all ports close	sed and PAB connection		E20	E type connector lead wire (500 mm) with surge suppressor/light	1
are not provided with t	he exhaust malfunction		 Option 	L	
Refer to page 974 for	details on the exhaust	Option	Blank	None	
malfunction prevention	n valve.		S	2 silencers (SLW-8S) attached]
voltage is changed for	solenoid valves (1), (2),		GRated	voltage	1
the product is process	ed as a customized order.	GRated	1	100 VAC (rectifier circuit integrated)	1
Note 4: Refer to dimensions for valves (1) (2)	or positions of solenoid	voltage	3	24 VDC	1
Note 5: When masking plates	are used for all solenoid		_	· ·	1

Refer to page 957 for the solenoid valve model no. list.

但



valves, electrical connections and rated voltage

options are to be left blank.



Refer to air unit components on pages 952 and 954 for specifications and internal structure.

CXU30-4G2-UN Series





23.5

47.5

38

33





CKD



Module check valve CXU10-CHV-UN Series

Completely blocks reverse flow of fluid such as compressed air Modular connectable to FRL1000 Series Intermediate take-out of air with branching port



How to order

F.R.L unit

Pneumatic auxiliary components

Air unit

Precision components

air



Dimensions

CAD



Refer to air unit components on page 958 for specifications and internal structure.



Distributor Standard white series

D401-UN-W/D300-W Series

Applicable for pipe branching Port size: Rc1/8 to Rc1/2



D401

Face to face

31.5 mm

auxiliary components Air unit components

F.R.L. unit

Pneumatic







Dimensions

• D300







Cross section A-A

Applications (D401-00-W)

Front



Rc3/8 (10)

Rc1/2 (15)

37.5 60

Cross section A-A



Air unit compon

Precision components

Turn adaptor CXU10-TA-UN/CXU30-TA-UN Series

Converts module fitting section by 90 degrees Direction of module components can be change



CAD Rof order

How to order How to use Pressure sensor CXU10)- TA - UN - 00 Sensor/ controller Symbol Descriptions Total A Model no. air system A Model no. CXU10 1000 Series Main line unit CXU30 3000 Series Dedicated model no. for custom Ending combinations. Applicable components cannot be purchased individually. Refer to page 962 for the model no. of Clean air unit your order. Air unit A Note on model no. selection Note 1: CXU30-TA can be connected to 2000, 3000, or High polymer membrane 4000 Series. air dryer

Internal structure and parts list/dimensions

• CXU10-TA-UN





Cross section A-A



Тор

Α

• CXU30-TA-UN

45

45

А



Cross section A-A



Side

Front

10

36

Side





Dimensions and applications

Model no.: A100-UN-6, 8, 10-W

Piping adaptor

Piping adaptor/L type piping adaptor Standard white series



Precision components *Dedicated model no. for custom combinations. Applicable components cannot be purchased individually. Pressure sensor Applications Sensor/ controlle A400-UN-8, 10, 15, 20-W Total air system Main line unit Model no. Port size Applicable model С Others Ending Α В D A100-UN-6-W Rc1/8 A100-UN-8-W Rc1/4 1000 Series 21.5 13.5 40 36 A100-UN-10-W Rc3/8 Clean air unit A400-UN-8-W Rc1/4 2000 Numbers A400-UN-10-W Rc3/8 3000 4000 20 6 Air unit 50 45 in () are A400-UN-15-W Rc1/2 Series Series (25) (11)

A400-UN-20-W

Rc3/4

L type piping adaptor

Port size



Sy	mbol	Descriptions						
AM	lodel n	0.						
Α	101	L type piping adaptor						
A	401	L type piping adaptor						
BPort size								
		A101	A401					
6	Rc1/8	•						
8	Rc1/4	• •						
10	Rc3/8	•						
15	Rc1/2		•					

· Applicable model: A101-UN-6. 8-W...1000-W Series • A401-UN-8, 10, 15-W...2000, 3000, 4000-W Series

Dimensions





A401-UN



Applications



F.R.L. unit Pneumatic auxiliary component

Air unit compon

for Rc3/4

High polyme membrane

air dryer



How to order CXU10-MA-UN-00 CXU30-MA-UN-00

*Dedicated model no. for custom combinations. Applicable components cannot be purchased individually.

Ending Internal structure and parts list/dimensions

36

Α

10.5

Front





Pressure sensor

Sensor/ controller Total air system Main line unit

Cross section A-A

• CXU30-MA-UN-00





Front

Cross section A-A

No.	Parts name	Model no.
1	Module conversion adaptor	CXU13-CA-00
2	O-ring	JASO-2013
3	Masking adaptor	CXU10-MA-00



Module conversion adaptor CXU13-CA-UN Series

Connectable to 1000, 2000, 3000 or 4000 Series



How to order CXU13-CA - UN - 00

* Dedicated model no. for custom combinations. Applicable components cannot be purchased individually. Refer to page 964 for the model no. of your order.

Dimensions

• CXU13-CA-UN-00



Тор



Cross section A-A





Front

Side

Clean air unit Air unit High polymer membrane air dryer

F.R.L. unit

Pneumatic auxiliary components

Air unit compon

Precision components

Pressure

Sensor/ Controller

air system

Main line unit

Ending



Joiner set

Model no.: C1000-J100-UN-W C4000-J400-UN-W



Model no.	Applicable model	Α	В	С	D	
C1000-J100-UN-W	1000 Series	10	36	26	M3.5	
C4000 1400	2000 Series					
	3000 Series	21	44	32	M5	
UN-W	4000 Series					

Air unit custom order product

Overview

CKD customizes all air unit combinations.

Module connections in the vertical direction which are not available with customized units are also supported.

Features

- (1) Unrestricted in vertical/ horizontal direction Vertical and horizontal piping can be changed flexibly. Solenoid valves can also be connected to the desired position.
- (2) Unlimited flexibility Module components not listed in this catalog are also available.
- (3) Reduced man-hours All components are connected as modules, eliminating work such as piping.



CONTENTS

 Air unit custom order product CXUZ Series 928



Sensor/ controller

Total air system Main line unit

Ending



How to order

CXUZ-FL

Air unit custom order product **CXUZ Series**

Precision components Pressure sensor Sensor/ controller Total air system Main line unit Ending

Dedicated model no. 6-digit number will be issued for each product.

Air unit components can be combined in accordance with applications and space. Contact CKD for combinations.

Clean air unit

Air unit

High polymer membrane air dryer

Related products (compatible module combination products)

	CXU10 (Applicable model: 1000 Series)							
Model	Precision regulator	Electro pneumatic regulator						
Model no.	RP1000 RPE1000	EVD-1000						
Catalog no.	CB-024SA CC-1072A	CB-024SA						

	CXU30 (Applicable model: 2000, 3000, 4000 Series)								
Model	3 port solenoid valve with spool position detector	Precision regulator	Electro pneumatic regulator						
	SNP	RP2000	EVD-3000						
Model no.									
Catalog no.	CC-1080A	CB-024SA	CB-024SA						

Valve air unit

Model no. for manifold

Overview

In valve air units, the solenoid valve is connected to components such as regulators.

Work such as piping is eliminated and the unit can start operation immediately.

Features

- Simplified order placement
 Units can be purchased using only
 one form, making order placement
 and delivery management easy.
- (2) Reduced man-hoursFR components and solenoid valves are connected as a module,

eliminating work such as piping. (3) Space saving Piping free and fitting free simple

design. Compact design that fits into limited spaces.

Descriptions of icons

(1) Easy to select models



Complex options are eliminated to allow easier selection even for the first order.

Series Variation <solenoid valve>



CONTENTS	
2 port pilot operated solenoid valve	930
CXU10-GEXA Series	
5 port pilot operated valve	934
CXU30-M4G2 Series	

	Volt	age		Conr	nectior	n port		FR o	compo	nent	Electric	al conn	ections
Series Model no.		24 VDC 100 VAC (Port size (OUT)			Regulator Filter regulator		ter Ilator	mmet lead	oe connector	terminal box	
			3/8	φ4	φ6	φ8	1/4	R2000	W2000	W3000	Gro	E ty	DIN
 2 port pilot operated solenoid valve CXU10-GEXA Easy Manifold 	•	•	•		•	•		•	•		•		•
 5 port pilot operated valve CXU30-M4G2 Easy Manifold 	•	•	•	•	•	•		•		•			•

Precision components Pressure

Sensor/ controller

Total air system

Main line unit

Ending



2 port pilot operated solenoid valve for compressed air Model no. for manifold

CXU10-GEXA Series

NC (normally closed) type





JIS symbol



Ending

air

F.R.L unit

Air unit compon

Precision components

(example) CXU10-GEXA-C6-R-3-2C-3



OUT OUT OUT ≳⊗ ∞াশ)ਅ⊡≊IIII¦ਅ⊠≊III¦ਅ

Specifications	s							
Descriptions	5	CXU10-GEXA						
Working fluid			Compre	ssed air				
Operating pressure different	tial MPa		0.01	to 0.7	Note 3			
Max. working pressure	e MPa		0.	7				
Proof pressure	MPa		1.()5				
Fluid temperature	°C		0 to	55				
Ambient temperatur	re °C		-5 to	55				
Atmosphere		Place fre	e of corrosive gas, ex	plosive gas and wa	ter splash			
Valve structure			Pilot operated dia	phragm structure				
Valve section leakage cm ³ /mi	in(ANR)	10 or less						
Mounting orientation	n		Fre	ee				
Port size (IN)			IN: R	c3/8				
Port size (OUT)		Push-in fitting ϕ 6	Push-in fitting ϕ 6 L type	Push-in fitting ϕ 8	Push-in fitting ϕ 8 L type			
C[dm ³ /(s·bar)] N	lote 2	1	.6	3	.0			
b		0.	37	0.	32			
Electrical specific	ation							
Rated voltage		100 VAC, 24 VDC Note 1						
Rated power	VA	1.2						
Power consumption W D	C	0.6						
Thermal class		В						
Degree of protection	n		d wire type: IPX0 wit	h DIN torminal box:				
(IEC standards 529)		Leau wire type. IFAU, with DIN terminal DOX. IPAS						

Note 1: The voltage fluctuation range is ±10%.

Note 2: Effective cross-sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

Note 3: When using with an extremely small flow rate or when the solenoid valve's secondary side is restricted, set the pressure so that the pressure difference does not fall below 0.01 MPa with the valve opened. (Refer to cautions on pages 969 to 973.) Contact CKD if the differential pressure before/after the solenoid valve with the valve opened is small.

Regulator specifications		
Set pressure MPa	0.05 to 0.7 Note 4, 5	
Pressure relief	Relief mechanism	
Port size	Rc3/8	_
Ambient temperature/fluid temperature °C	5 to 60	
Filter specifications		
Filtration rating µm	5	
Drain capacity cm ³	12.0	_
Port size	Rc3/8	

Note 4: The set pressure range is limited by the working pressure of CXU10-EXA.

Note 5: When "F1" with an auto-drain is selected, min. operating pressure differential must be 0.15 MPa.

Weight

Weight	(Unit: kg)
Descriptions	Descriptions
FR components (including T type brackets and joiners)	
A: Piping adaptor	0.21
R: Regulator	0.58
RT8: Regulator (without pressure gauge)	0.57
W: Filter regulator	0.7
WT8: Filter regulator (without pressure gauge)	0.69
2 port solenoid valve	
CXU10-EXA (discrete valve and joiner) Note 6	0.11

Weight is calculated as FR component used + 2 port solenoid valve × number of stations.

Note 6: Weight of models with DIN terminal box is +20 g.

CXU10-GEXA Series

How to order

How to order					F.R.L.
CXU10-GEXA-C6-R-3-2C-3					Pneumatic
					auxiliary components
	Syn	nbol		Descriptions	Air unit
	APo	ort siz	e (OUT)		components
	C	6	φ 6 push-i	in fitting	Precision
	C	L6	φ 6 push-i	in fitting L type	components
	C	8	φ 8 push-i	in fitting	Pressure
	C	L8	φ 8 push-i	in fitting L type	sensor
	B FF	R com	ponent o	ptions	Sensor/
B FR component options		Α	Piping ada	aptor (Rc3/8)	Total
	is st	R	Regulator	(R2000-10-W-X2 Note 2)	air
	por		Regulator	(R2000-10-W-T8X2 Note 2)	Main
	le q	RIS	Without p	ressure gauge (port Rc1/4 ventilated)	line
	0	w	Filter regu	Ilator (W2000-10-W-F1 Note 2)	unit
	Note		Filter regu	Ilator (W2000-10-W-F1T8 Note 2)	Ending
	1	W18	Without p	ressure gauge (port Rc1/4 ventilated)	
	D : 17	Blank	IN side lef	ft	
	Direction	X	IN side rig	ıht	Clean
	OSolenoid valve station no.		tation no.	air unit	
Solenoid valve station no.		1	1 station		Air
	t	o	to		High polymor
	4	4	4 stations		membrane
	DCo	oil opt	ion Not	e 3, Note 4	all ulyci
D Coil option	2	С	Standard	Lead wire (without surge suppressor)	
	2	н		DIN terminal box (Pg7), with light (included in terminal box)	
			Option	DIN terminal box (Pg7), with light/surge	
	21	IS		suppressor (included in terminal box)	
	B R	ated v	oltage		
Rated voltage		1	100 VAC		
		3	24 VDC		

A Note on model no. selection

- Note 1: The standard filter regulator is the NC auto-drain type. Specify A unless the component option R, RT8, W, WT8 is selected. Multiple FR component options cannot be selected.
- Note 2: Model no. for IN side left (FR component direction option "Blank").
- Note 3: Refer to the table on the right for available combinations of the coil option and voltage.
- Note 4: Contact CKD for models with M12 connector cables.

option 1 3 2C • • 2H • • 2HS • Select from the combinations indicated with • above.

Voltage

Coil

Internal structure

Model no.	Detailed page
CXU10-EXA	943 page
CXU10-TA	962 page
CXU10-MA	963 page
R2000	127 page
W2000	83 page

CXU10-GEXA Series

CAD

Dimensions F.R.L. unit

Pneumatic auxiliary components

Air unit

High polymei membrane

air dryer

• Grommet lead wire type CXU10-GEXA-*-A-*-2C-* Cartridge fitting: Straight type





Optional dimensions table

Α

27

27

Option

C6

CL6

C8

CL8



Enlarged view of bracket section

С

31

32

D

37

39

Е

18.5

21

Configured product table

No.	Product name	Model no.
1	Piping adaptor Note 1	(FR component option -A)
2	T type bracket	B110-W
3	Turn adaptor	CXU10-TA-00
4	2 port pilot operated solenoid valve	CXU10-EXA-*
5	Turn adaptor	CXU10-TA-00
6	Masking adaptor	СХU10-МА-00-В

Note 1: Configuration of products may differ depending on FR component options.

Note 2: Mounting directions of custom units and brackets, and solenoid valves differ.

Cartridge fitting: Elbow type



n: Solenoid valve station no.

With DIN terminal box (Pg7) type CXU10-GEXA-*-A-*-2HS-*





в

Push-in fitting φ 6

Push-in fitting ϕ 6

Push-in fitting ϕ 8

Push-in fitting ϕ 8



932

CXU10-GEXA Series

Dimensions



FR component option: Regulator type CXU10-GEXA-*-^R_{RT8}-*-*-*

CAD



Pressure gauge dimensions table			
Pressure gauge (optional)	x	Y	
G45D	(73.5)	φ 39	
G49D	(73)	φ 43.5	
G59D	(75.5)	φ 52	
G40D	(75)	φ 42.5	
G50D	(75)	φ 52.5	
G41D	(73.5)	φ 42	
G52D	(85.5)	φ 52.5	

Ending

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Precision components

Pressure

sensor

Sensor/ controller

Total

air system

Main line unit

Clean air unit Air unit High polyme membrane air dryer



Pressure gauge dimensions table

Pressure gauge (optional)	x	Y
G45D	(73.5)	φ 39
G49D	(73)	φ 43.5
G40D	(75)	φ 42.5
G41D	(73.5)	φ 42
G52D	(85.5)	φ 52.5

● FR component option: Reverse flow CXU10-GEXA-*-^R_{RT8} X-*-*-*



Note: When the reverse flow option X is selected, the IN side and FR component are on the right. The figure on the left is for the regulator.



optional)	^	•
G45D	(73.5)	φ 39
G49D	(73)	φ 43.5
G40D	(75)	φ 42.5
G41D	(73.5)	φ 42



Air unit compon

Precision components



5 port pilot operated valve

CXU30-M4G2 Series

Simple order as a manifold with a regulator connected



Common specifications

_				
Pressure sensor	Des	criptions	S	Descriptions
	Valve type	e and ope	ration	Pilot operated soft spool valve
Sensor/ controller	Working f	luid		Compressed air
	Max. workin	ig pressure	MPa	0.7
lotal air	Min. workin	g pressure	MPa	0.2 (2-position, 3-position)
system	Proof pre	ssure	MPa	1.05
Main	Fluid tem	perature	°C	5 to 55
unit	Ambient t	emperatu	re °C	5 to 55
	dtmosphere			Place free of corrosive gas, explosive gas
Ending				and water splash
	Port sizo	A/B port		Push-in fitting φ 4, φ 6, φ 8
	FUILSIZE	R1/R 2 p	ort	Rc1/4
	Manual o	perating d	evice	Non-locking/locking common type
Clean air unit	Pilot exha	aust metho	bd	Main valve/pilot valve common exhaust type
	Lubricatio	n N	lote 1	Not required
Air	Degree of p	rotection	Note 2	Dust proof
umi	Vibration/sh	ock resistan	ce m/s ²	50 or less/300 or less
High polymer	N			

Descriptions

Electrical specification

Descri	ptions	Descriptions
Rated voltage	DC	24
V	AC	100
Rated voltage flu	ctuation range	±10%
Holding current	24 VDC	0.023 (0.025)
Note 3 A	100 VAC	0.010 (0.012)
Power consumption	24 VDC	0.55 (0.6)
Note 3	100 VAC	0.55 (0.6)
Apparent power VA	100 VAC	1.0 (1.2)
Thermal class		В
Temperature rise °C		50
Surge suppressor		Standard
Indicator		With indicator light (standard)

(unit: kg)

Note 3: Values in () apply when a light is attached.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

membrane air dryer

Excessive or intermittent lubrication results in unstable operation.

Note 2: Avoid water drops or oil, etc. during use. IP65 (jet-proof type) applies for DIN terminal box specifications.

Note that the specified adaptive cord O. D. and tightening torque must be used for fixing.

JIS symbol







(R1)(P)(R2) 3-position ABR connection





(R1)(P)(R2) 3-position PAB connection



КГ

Weight occrintic

	Becchiption	B00		
FR com	ponents (including T type I			
A: F	Piping adaptor			0.54
R: F	Regulator			0.80
RT8	B: Regulator (without p	ressure gauge)		0.79
W: I	-ilter regulator			1.06
WT8	3: Filter regulator (without	ut pressure gauge)		1.05
5 port valve: Solenoid position			Discrete valve	Valve sub-base
No solenoid valve: Masking plate			0.02	
	Single	E type connector	0.08	
2 nocition	Single	DIN terminal	0.10	
2-20510011	Devible	E type connector	0.10	0.32
Double		DIN terminal	0.14	
2 position	All ports closed	E type connector	0.11	
S-position All ports closed	DIN terminal	0.15		

Weight is calculated as FR component used + solenoid valve (1) to (4) + valve sub-base.

Flow characteristics

Solenoid position		P→A/B		A/B→R1/R2	
		C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
2	-position	2.3	0.29	1.8	0.24
	All ports closed	2.1	0.27	2.3	0.27
3-position	ABR connection	2.1	0.34	1.7	0.2
	PAB connection	2.2	0.34	2.4	0.29

Note 1: Effective cross-sectional area S and sonic conductance C are converted as $S \doteq 5.0 \times C$.

Note 2: Values for 2-position and ABR connection are the values when the exhaust malfunction prevention valve is integrated.

Regulator specifi	cations	
Set pressure	MPa	0.2 to 0.7 Note 3
Pressure relief		Relief mechanism
Port size		Rc3/8
Filter specification	ons	
Filter specification	ons µm	5
Filter specification Filtration rating Drain capacity	ons µm cm³	<u>5</u> 45

Note 3: The set pressure range is limited by the working pressure of CXU30-4G2.





- Multiple FR component options cannot be selected. Note 5: Model no. for IN side left (FR component direction option "Blank").
- Note 6: 2 silencers (SLW-8S) are attached to one sub-base.
- Note 7: Refer to dimensions for positions of solenoid valves (1) to (4).
- Note 8: When masking plates are used for all solenoid valves, electrical connections and rated voltage options are to be left blank.

Internal structure

Model no.	Detailed page
CXU30-4G2	954 page
CXU10-MA	963 page
CXU13-CA	964 page
R2000	127 page
W3000	83 page



Configured product table

No.	Product name	Model no.
1	Piping adaptor Note 1	(FR component option -A)
2	T type bracket	B310-W
3	5 port pilot operated valve	CXU30-4G2-*
4	T type bracket	B310-W
5	Module conversion adaptor	CXU13-CA-00
6	Masking adaptor	CXU10-MA-00

Note 1: Configuration of products may differ depending on FR component options.

Solenoid valve and number of module sub-base

Model no.	Number of solenoid valves	Number of module sub-base
CXU30-M4G2-(1)(2)	2	1
CXU30-M4G2-(1)(2)(3)(4)	4	2

Note: The masking plate quantity is included in the solenoid valve quantity. There are 2 solenoid valves for each module sub base.

Dimensions



 DIN terminal box type (B) Cartridge fitting: Straight type 2-position single

CAD





Double, 3 position

Pneumatic auxiliary components Air unit components

F.R.L. unit

Precision components

Pressure sensor

Sensor/ controller

Total air system

Main line unit

Ending

Clean air unit
Air unit
High polymer membrane air dryer

Note: DIN terminal box assembly is shipped facing inward.

• ϕ 6 push-in fitting L type (facing rear)



● FR component option: Regulator type CXU30-M4G2-**-*-^R_{RT8} -*-*



Pressure gauge dimensions table

Pressure gauge (optional)	x	Y
G49D	(73)	φ 43.5
G59D	(75.5)	φ 52
G40D	(75)	φ 42.5
G50D	(75)	φ 52.5
G41D	(73.5)	φ 42
G52D	(78.5)	φ 52.5

CKD

Ī

937

CAD

Dimensions

• FR component option: Filter regulator type

CXU30-M4G2-**-*-^W_{WT8} -*-*



Air unit

High polymer membrane air dryer

F.R.L. unit

Pneumatic auxiliary components

Air unit components

Precision components



Pressure gauge dimensions table

Pressure gauge (optional)	x	Y
G49D	(69.5)	φ 43.5
G59D	(72)	φ 52
G40D	(71.5)	φ 42.5
G50D	(71.5)	φ 52.5
G41D	(70)	φ 42
G52D	(75)	φ 52.5

 FR component option: Reverse flow CXU30-M4G2-**-*-R_{T8} X-*-*



Note: When the reverse flow option X is selected, the IN side and FR component are on the right. The solenoid valve is arranged in order from the left. The figure on the left is for the regulator.

Air unit components

Model no. for discrete item

Overview

Air unit components can be easily added on to existing units or can be conveniently purchased during maintenance.

Also, general components can be purchased together and assembled with air unit components.

Features

(1) Module connection of solenoid valves

2 port and 5 port valves can be connected to conventional FRL components.

(2) Easy connection using a joiner

> Conventional piping materials and tubes are not used, so there is no possibility of foreign objects entrance or pressure loss.

(3) Various module components Modules can be split into 4 directions, twisted 90 degrees, or resized.

Descriptions of icons

IN side

(1) Gasket connection on

IN gasket

A gasket is required for connecting module concavities.



(2) Cannot be used at terminals

Since no connection screw is provided, a masking adaptor or piping adaptor is required for use at terminals.



stations

IN structures are used on both sides of the module connection section, making it easy to expand stations.

(4) Main inline

Inline The component can be used as main inline. This structure is the opposite of the expandable type.



CONTENTS 2 port pilot operated solenoid valve 942 CXU10-EXA Series 2 port direct acting solenoid valve 944 CXU10-FAB3 Series 2 port direct acting solenoid valve 946 CXU30-FAB4U Series 2 port pilot kick type solenoid valve 948 CXU30-ADK Series 2 port pilot operated solenoid valve 950 CXU30-FAD Series 5 port pilot operated valve 952 CXU30-4G2 Series 958 Module check valve CXU10-CHV Series 4-way distributor 960 CXU10-D4 Series CXU30-D4 Series Turn adaptor 962 **CXU10-TA Series** CXU30-TA Series Masking adaptor 963 CXU10-MA Series Module conversion adaptor 964 CXU13-CA Series Bracket, joiner, O-ring/gasket, pipe plug 965 B-W J-W ORING GASKET CXU-PP

unit	
Pneumatic auxiliary components	
Air unit	

EDI

Precision components

Pressure sensor

Sensor/ controller

Total air system

line unit

Ending

Main

Clean air unit Air unit High polymer membrane air dryer

Series variation

Air unit components

F.R.L. unit

Pneumatic auxiliary components

Air unit components	<solenoid valve=""></solenoid>				
Precision components Pressure	Series	Major applications	JIS symbol	Model no.	
Sensor Sensor/ controller	2 port pilot operated solenoid valve Rester Sterifie	For air blow		CXU10-EXA	
System Main line unit	2 port direct acting solenoid valve IN gasket Scentre (gentype	For air blow		CXU10-FAB3	
Ending	2 port direct acting solenoid valve In gasket Upgate	For air blow		CXU30-FAB4U	
Air unit High polymer	2 port pilot kick type solenoid valve	Main ON/OFF		CXU30-ADK	
mëmbrane air dryer	2 port pilot operated solenoid valve	Main ON/OFF		CXU30-FAD	
	5 port pilot operated valve IN gasket Scentze Scentze	For driving cylinder	(example) CXU30-4G2-13-C6-B-1	CXU30-4G2	

<Distributor, adaptor>

Series	Major applications Examples		Model no.	
Module check valve N Sasket Grew Free gentps	Back-flow prevention		CXU10-CHV	
• 4-way distributor	4 way branch		CXU10-D4	
Service Note 2	4 way branch	T	CXU30-D4	
Turn adaptor	Turning the second de OON		CXU10-TA	
gasker Sizen tee goen type	running the module 90	U	CXU30-TA	
 Masking adaptor 	Masking the module	A HEL	CXU10-MA	
Module conversion adaptor	Connection of 1000 Series and 3000 Series		CXU13-CA	

CXU series Series variation

F.R.L. unit
Pneumatic auxiliary components
Air unit components

Note 1: Effective cross-sectional area S and sonic conductance C are converted as S \doteqdot 5.0 × C							Air unit components					
	Мо	dule			Port s	size (OUT)		Flow characteristics	_	Precision
	1000 Series	3000 Series 4000	φ4	φ6	φ8	1/8	1/4	3/8	1/2	C[dm ³ /(s·bar)] Note 1	Page	Pressure
	•			•	•					1.4 to 3.2	942	Sensor/ controller
	•			•	•					1.2	944	system Main line unit
		•					•			2.1	946	Ending
		•								11	948	Clean air unit Air unit
		•								18	950	membrane air dryer
		•	•	•	•					2.2 to 2.7	952	

Note 2: There is a port size for CXU30-D4.

Мос	dule	Port size	
1000 Series	2000 3000 Series 4000	3/8	Page
•			958
•			960
		-	
 •	•		962
•			963
			964



2 port pilot operated solenoid valve for compressed air

Screw fre open type

IN

aasket

Fxnandab

CAD

RoHS

OUT

IN

CXU10-EXA Series

NC (normally closed) type, diaphragm structure type JIS Modular connection with 1000 Series enabled Ideal for modular component blow valves

Precision components

Air unit

F.R.L. unit

Pneumatic auxiliary components

Pressure sensor

Sensor/ controller
Total air system
Main line unit

Ending

Clean air unit Air unit High polymer membrane

air dryer

Specifications					
Descriptions	CXU10-EXA				
Working fluid		Compressed air			
Operating pressure differential MPa	a	0.01 to	0.7	Note 4	
Max. working pressure MPa	a	0.	7		
Proof pressure MPa	a	1.(05		
Fluid temperature °C	;	0 to	55		
Ambient temperature °C	;	-5 to	o 55		
Atmosphere	Place fre	Place free of corrosive gas, explosive gas and water splash			
Valve structure		Pilot operated diaphragm structure			
Valve section leakage cm ³ /mir	ı	10 or less			
Mounting orientation	Free				
Port size (IN)	None				
Port size (OUT)	Push-in fitting ϕ 6	Push-in fitting ϕ 6 L type	Push-in fitting ϕ 8	Push-in fitting ϕ 8 L type	
C[dm ³ /(s·bar)] Note 2	2 1	1.6 3.0			
b	0.	0.37		0.32	
Weight g Note 3	98	95	98	100	
Electrical specification				·	
Rated voltage	100 VAC (50/60 Hz), 24 VDC Note 1				
Apparent power VA	1.2				
Power consumption W DC	0.6				
Thermal class	В				
Degree of protection					
(IEC standards 529)	Lead wire type: IPAU, with DIN terminal box: IPA5				

Note 1: The voltage fluctuation range is ±10%.

Note 2: Effective cross-sectional area S and sonic conductance C are converted as $S \doteq 5.0 \times C$.

Note 3: Weight with DIN terminal box is +20 g.

Note 4: When using with an extremely small flow rate or when the solenoid valve's secondary side is restricted, set the pressure so that the pressure difference does not fall below 0.01 MPa with the valve opened. (Refer to cautions on pages 969 to 973.) Contact CKD if the differential pressure before/after the solenoid valve with the valve opened is small.

How to order

CXU1	0-EXA - C6-2C-	1				
			Symbol		Descriptions	
			A Port siz	e (OUT)		
	A Port size (OUT)			φ 6 push-in fitting		
			CL6	φ 6 push-ii	n fitting L type	
			C8	φ 8 push-in fitting		
			CL8	φ 8 push-in fitting L type		
			B Coil opt	tion Note	1, Note 2	
B Coil option		2C	Standard	Lead wire (without surge suppressor)		
		Voltage	2H		DIN terminal box (Pg7), with light (included in terminal box)	
Note on model no. selection		2HS	Option	DIN terminal box (Pg7), with light/surge		
				suppressor (included in terminal box)		
Note: The joine are enclo	er set (joiner, bolt, O-ring) and 1 ga used.	asket	© Voltage	Note 1		
Coil	Voltage		1	100 VAC	50/60 Hz	
Option	1 3		3	24 VDC		
2C	• •		Note 1: Refer to option a	o the table on and voltage.	the left for available combinations of the coil	

Note 2: Contact CKD for models with M12 connector cables.

Select from the combinations indicated with
above.

KD

2H

2HS

CXU10-EXA series

Internal structure and parts list



Dim	ens	ions

Grommet lead wire type CXU10-EXA-*-2C-* Cartridge fitting: Straight type

CAD

300





Cartridge fitting: Elbow type





No.	Parts name	Material	
1	Cover (Note 1)	РВТ	РВТ
2	Bush	NBR	Nitrile rubber
3	Coil assembly	-	-
4	Stuffing	PPS	Polyphenylene sulfide
5	Diaphragm assembly	H-NBR/PPS	Hydrogenated nitrile rubber/polyphenylene sulfide
6	Body	PA66	Polyamide resin
7	Spring	SUS	Stainless steel
8	Valve body	РВТ	РВТ
9	Gasket	H-NBR	Hydrogenated nitrile rubber
10	Pin	SUS	Stainless steel
11	Cartridge fitting		

Note 1: PA66, polyamide are used if DIN terminal box is attached.

Clean air unit Air unit High polymer membrane air dryer

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Precision components

Pressure

Sensor/ controller

Total air system Main line unit

Ending





Optional dimensions table

Option	Α	В	С	D	Е
C6	27	Push-in fitting ϕ 6	-	-	-
CL6	-	Push-in fitting ϕ 6	31	37	18.5
C8	27	Push-in fitting ϕ 8	-	-	-
CL8	-	Push-in fitting ϕ 8	32	39	21

CKD 943





2 port direct acting solenoid valve

CXU10-FAB3 Series

Screw free open type

IN

gasket

Expandabl

CAD

RoHS

JIS symbol

IN

OUT

NC (normally closed) type JIS Modular connection with 1000 Series enabled Ideal for modular component blow valves

Precision components Pressure

Sensor/ controller

Total air system

Main line unit

Ending

Clean air unit Air unit High polymer membrane

air dryer

Specificatio	ns		
Descriptio	ns	CXU10-FAB3	
Working fluid		Compressed air	
Operating pressure different	ential MPa	AC: 0 to 1.0, DC: 0 to 0.6	
Max. working press	ure MPa	1.0	
Proof pressure	MPa	1.5	
Fluid temperature	e °C	AC: 5 to 60, DC: 5 to 40	
Ambient tempera	iture °C	AC: 5 to 60, DC: 5 to 40	
Atmosphere		Place free of corrosive gas, explosive gas and water splash	
Valve structure		Direct acting poppet structure	
Valve section leakage	cm ³ /min	10 or less	
Mounting orienta	tion	Free	
Port size (IN)		None	
Orifice size	mm	3	
C[dm ³ /(s·bar)]	Note 1	1.2	
b		0.56	
Weight	kg	0.25	
Electrical specif	ication		
Rated voltage		100 VAC, 24 VDC	
Rated power VA	50 Hz	At holding: 7.5, when starting: 20	
	60 Hz	At holding: 5.5, when starting: 17	
Power consumption W	50 Hz	4.0	
	60 Hz	3.4	
	DC	6.5	
Thormal aloo		P	

Thermal class

Note 1: Effective cross-sectional area S and sonic conductance C are converted as $S \doteq 5.0 \times C$.



A Note on model no. selection

Note: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.

CXU10-FAB3 Series

Internal structure/dimensions

Internal structure and parts list

• CXU10-FAB3



No. Parts name Material Sensor/ controller Class B molded coil 1 Coil assembly Total 2 Plunger assembly SUS, NBR Stainless steel/nitrile rubber air system 3 O-ring NBR Nitrile rubber Main line unit 4 sus Stainless steel Spring 5 PA66 Body Polyamide resin 6 Pin SUS Stainless steel Ending 7 Cartridge fitting

Dimensions

Grommet lead wire type CXU10-FAB3-*-2C-* Cartridge fitting: Straight type

CAD





• With DIN terminal box (Pg11) type CXU10-FAB3-*-2HS-*





Cartridge fitting: Elbow type





Optional dimensions table

Option	Α	В	С	D	Е
C6	27	Push-in fitting ϕ 6	-	-	-
CL6	-	Push-in fitting ϕ 6	31	37	18.5
C8	27	Push-in fitting ϕ 8	-	-	-
CL8	-	Push-in fitting ϕ 8	32	39	21

Clean air unit Air unit

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Precision components

Pressure sensor

High polymer membrane air dryer





2 port direct acting solenoid valve

CXU30-FAB4U Series

NC (normally closed) type Modular connectable to 2000, 3000 or 4000 Series Interchangeable with GFAB actuator assembly JIS symbol OUT UT IN ROHS CAD Expended

crew fre

Sensor/ controller Total air system

Main line unit Ending

High polymer membrane air dryer

Specificatio	ns		
Descriptio	ns	CXU30-FAB4U	
Working fluid		Compressed air	
Operating pressure differ	rential MPa	AC: 0 to 1.0, DC: 0 to 0.9	
Max. working press	ure MPa	1.0	
Proof pressure	MPa	1.5	
Fluid temperature	e °C	AC: 5 to 60, DC: 5 to 40	
Ambient tempera	iture °C	AC: 5 to 60, DC: 5 to 40	
Atmosphere		Place free of corrosive gas, explosive gas and water splash	
Valve structure		Direct acting poppet structure	
Valve section leakage cm	³ /min(ANR)	10 or less	
Mounting orienta	tion	Free	
Dant aina	IN	None	
Port size	OUT	Rc1/4	
Orifice size	mm	4	
C[dm³/(s·bar)]	Note 1	2.1	
b		0.34	
Weight	kg	0.55	
Electrical specif	fication		
Rated voltage		100 VAC, 24 VDC	
Rated power VA	50 Hz	At holding: 15, when starting: 40	
	60 Hz	At holding: 11, when starting: 35	
Power consumption W	50 Hz	7.5	
	60 Hz	6.5	
	DC	8.0	
Thermal class		В	

Note 1: Effective cross-sectional area S and sonic conductance C are converted as $S \doteq 5.0 \times C$.



A Note on model no. selection

Note: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.
CXU30-FAB4U Series

Internal structure/dimensions

Internal structure and parts list

• CXU30-FAB4U



No.	Parts name	Material	
1	Coil assembly	Class B mold	led coil
2	Plunger assembly	SUS, NBR	Stainless steel/nitrile rubber
3	O-ring	NBR	Nitrile rubber
4	Spring	SUS	Stainless steel
5	Body	PPS	Polyphenylene sulfide
6	Gasket	NBR	Nitrile rubber
7	Plate	SUS	Stainless steel
8	Body	ADC12	Aluminum die casting
9	O-ring	NBR	Nitrile rubber
10	Base plate	SPCC	Steel plate
11	O-ring	NBR	Nitrile rubber

Clean air unit Air unit High polymer membrane air dryer

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Precision components

Pressure sensor

Sensor/ controller

Total air system

Main line unit

Ending

Dimensions

Grommet lead wire type
 CXU30-FAB4U-8L-2C-*

CAD





With DIN terminal box (Pg11) type CXU30-FAB4U-8L-2HS-*







2 port pilot kick type solenoid valve

CXU30-ADK Series

NC (normally closed) type Diaphragm structure Modular connectable to 2000, 3000 or 4000 Series Suitable for modular component master valves



Precision components Pressure

Air unit compon

F.R.L. unit

Pneumatic auxiliary components

components	Specifications				
Pressure sensor	Descriptio	ns	CXU30-ADK		
Sensor/ controller	Working fluid		Compressed air		
	Operating pressure differe	ntial MPa	AC: 0 to 1.0, DC: 0 to 0.7		
Total	Max. working pressu	re MPa	2		
aır system	Proof pressure (water pres	ssure) MPa	4		
Main	Fluid temperature (N	ote 1) °C	Nitrile rubber: -10 to 60, fluoro rubber: 5 to 60		
unit	Ambient tempera	iture °C	-10 to 60		
E a alla a	Atmosphere		Place free of corrosive gas, explosive gas and water splash		
Enaing	Valve structure		Pilot kick type poppet, diaphragm structure		
	Valve section leakage	cm ³ /min	10 or less		
	Mounting orientation		Free		
Clean air unit	Port size		None		
	Orifice size mm		12		
Air unit	C[dm ³ /(s·bar)] (Note 2)		10.4		
Hiah polymer	b		0.46		
měmbrane air drver	Weight kg		0.65		
	Electrical specification				
	Rated voltage		100 VAC, 24 VDC		
	Apparent power	50 Hz	24.0		
	VA	60 Hz	19.0		
	Dowor	50 Hz	10.0		
		60 Hz	8.0		
		DC	11.0		
	Thermal class		В		

Note 1: No freezing.

Note 2: Effective cross-sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.



Note 1: The coil option 2C is available for rated voltage [1] only.

A Note on model no. selection

Note: The joiner set (joiner, bolt, O-ring) is enclosed.

CXU30-ADK Series Internal structure/dimensions

Internal structure and parts list

• CXU30-ADK



				Pressure
No.	Parts name	Material		sensor
1	Core assembly	SUS	Stainless steel	Sensor/
2	Shading coil	Cu	Copper	controller
3	Coil	—	_	Total
4	Plunger assembly	SUS	Stainless steel	air system
5	Plunger spring	SUS	Stainless steel	Main
6	Kick spring	SUS	Stainless steel	unit
7	Stuffing	С	Bronze casting	
8	Sealant	NBR (FKM)	Nitrile rubber (fluoro rubber)	Ending
9	Diaphragm assembly	SUS/NBR SUS/FKM)	Stainless steel/nitrile rubber (stainless steel/fluoro rubber)	
10	O-ring	NBR (FKM)	Nitrile rubber (fluoro rubber)	
11	Body	ADC	Aluminum die casting	Clean
12	Plate cover	ABS	ABS resin	air unit

Air unit High polymer membrane air dryer

Dimensions

Grommet lead wire type CXU30-ADK-00-*2C-*

CAD





Pressure sensor

CKD



2 port pilot operated solenoid valve

CXU30-FAD Series

NC (normally closed) type Diaphragm structure Modular connectable to 2000, 3000 or 4000 Series

JIS symbol Screw free OUT open type CAD Inline IN RoHS

Precision components

Pressure sensor

Air unit compor

F.R.L. unit

Pneumatic auxiliary components

Sensor/ controller
Total air system

Ending

Main line unit

Clean air unit Air unit

Linh r	olum
пун	JUIYIII
memb	orane
air dn	/er

Specificatio	ns				
Descriptio	ns	CXU30-FAD			
Working fluid		Compressed air			
Min. operating pressure different	ential MPa	0.1	Note 2		
Max. operating pressure differ	ential MPa	0.7			
Max. working pressu	re MPa	0.7			
Proof pressure	MPa	1.4			
Fluid temperature	e °C	-10 to 60 (no freezing)			
Ambient tempera	ture °C	-10 to 60	-10 to 60		
Atmosphere		Place free of corrosive gas, explosive gas and water splash			
Valve structure		Pilot operated type diaphragm structure			
Valve section leakage cr	n³/min(ANR)	10 or less			
Mounting orienta	tion	Free			
Port size		None			
Orifice size	mm	15			
C[dm³/(s·bar)]	Note 1	18			
b		0.4			
Weight	kg	0.5			
Electrical speci	fication				
Rated voltage		100 VAC, 24 VDC			
Apparent power 50 Hz		7.5			
VA 60 Hz		5.5			
Power	50 Hz	4.0			
consumption W	60 Hz	3.4			
	DC	6.5			
The sum of slave					

Thermal class

Note 1: Effective cross-sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

Note 2: Depending on use, such as using with an extremely small flow rate or when the solenoid valve's secondary side is restricted, operation may be unstable at pressure differences 0.1 MPa or lower.

How to order CXU30-FAD-00 - (X1)-(2C)-(3 Symbol Descriptions A Flow direction option A Flow direction option Blank Standard flow (left \rightarrow right) X1 Reverse flow (right \rightarrow left) B Coil option **B** Coil option 2C Grommet lead wire 2HS DIN terminal box with light/surge suppressor (Pg11) C Rated voltage C Rated voltage 100 VAC 50/60 Hz, 110 VAC 60 Hz 1 3 24 VDC

A Note on model no. selection

Note: The joiner set (joiner, bolt, O-ring) is enclosed.

CXU30-FAD series Internal structure/dimensions

Internal structure and parts list





No.	Parts name	Material	
1	Coil assembly	Class B molded coil	
2	Plunger assembly	SUS, NBR	Stainless steel/nitrile rubber
3	O-ring	NBR	Nitrile rubber
4	Spring	SUS	Stainless steel
5	Stuffing	ADC	Aluminum die casting
6	Diaphragm	U	Urethane rubber resin
7	Body	ADC	Aluminum die casting
8	Plate cover	ABS	ABS resin

Dimensions

IN

Grommet lead wire type
 CXU30-FAD-00-*-2C-*

28

.

CAD



• With DIN terminal box (Pg11) type CXU30-FAD-00-*-2HS-*





CXU30-FAD-00-X1-2C-*

63





Precision components Pressure sensor Sensor/ controller

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Total air system Main line unit

Ending

Clean air unit Air unit High polymer membrane air dryer



5 port pilot operated valve

CXU30-4G2 Series

5 port solenoid valve connectable to 2000, 3000 or 4000 Series



Screw free



Pressure 2-position single sensor 4 2 (A) (B) Sensor/ controller а Total $\left| \begin{array}{c} \uparrow \\ 1 \end{array} \right|_{3}$ system 5 Main line unit (R1)(P)(R2) 2-position double

JIS symbol



Clean air unit Air unit

High polymer membrane air dryer

Air unit compon

Precision components

air

Ending

(R1)(P)(R2)

3-position all ports closed 4 2 (A)(B) а É т -

1 5 3 (R1)(P)(R2)



3-position PAB connection



(example) CXU30-4G2-13-C6-B-1



Common specifications

Descriptions		Descriptions	
Valve type and operation		Pilot operated soft spool valve	
Working flui	d	Compressed air	
Max. working p	oressure MPa	0.7	
Min. working p	ressure MPa	0.2 (2-position, 3-position)	
Proof pressu	ure MPa	1.05	
Fluid temper	rature °C	5 to 55	
Ambient terr	nperature °C	-5 to 55 (no freezing)	
Atmosphere		Place free of corrosive gas, explosive gas and water splash	
	A/B port	Push-in fitting φ 4, φ 6, φ 8	
Port size	P port	None (connectable with 3000 Series)	
	R1/R 2 port	Rc1/4	
Manual oper	rating device	Non-locking/locking common type	
Pilot exhaust method		Main valve/pilot valve common exhaust type	
Lubrication Note 1		Not required	
Degree of prot	ection Note 2	Dust proof	
Vibration/shock	resistance m/s ²	50 or less/300 or less	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive or intermittent lubrication results in unstable operation.

Note 2: Avoid water drops or oil, etc. during use.

IP65 (jet-proof type) applies for DIN terminal box specifications.

Note that the specified adaptive cord O. D. and tightening torque must be used for fixing.

Electrical specification

Descriptions		Descriptions
Rated voltage	DC	24
v	AC	100
Rated voltage fluctuation range		±10%
Holding current	24 VDC	0.023 (0.025)
Note 3	100 VAC	0.010 (0.012)
Power consumption	24 VDC	0.55 (0.6)
Note 3	100 VAC	0.55 (0.6)
Apparent power VA	100 VAC	1.0 (1.2)
Thermal class	SS	В
Temperature rise °C		50
Surge suppressor		Standard
Indicator		With indicator light (standard)
N	· · · · · · · · · · · · · ·	and the second

Note 3: Values in () apply when a light is attached.

Weig	jht			(Unit: kg)
			De	escriptions
Solenoid position			Discrete valve	Valve sub-base
No solenoid valve; masking plate			0.02	
2-position	Single	E type connector	0.08	
		DIN terminal	0.10	
	Double	E type connector	0.10	0.32
		DIN terminal	0.14	
3-position	All ports	E type connector	0.11	
	closed	DIN terminal	0.15	

Weight is calculated as discrete valve used (1) + discrete valve (2) + valve sub-base.

CXU30-4G2 Series Flow characteristics/how to order

F.R.L. Pneumatic auxiliary components Air unit

Precision components

Pressure

sensor

Sensor/ controlle

Flow characteristics

Solenoid position		P→A/B		A/B→R1/R2	
		C[dm³/(s/bar)]	b	C[dm³/(s/bar)]	b
2-position		2.3	0.29	1.8	0.24
	All ports closed	2.1	0.27	2.3	0.27
3-position	ABR connection	2.1	0.34	1.7	0.2
	PAB connection	2.2	0.34	2.4	0.29

Note 1: Effective cross-sectional area S and sonic conductance C are converted as $S \doteq 5.0 \times C$.

Note 2: Values for 2-position and ABR connection are the values when the exhaust malfunction prevention valve is integrated.



- Note 1: The fitting that can be mounted on the R1 port is GWS*-8-S.
- Note 2: The exhaust malfunction prevention valve is provided as standard. 3-position all ports closed and PAB connection are not provided with the exhaust malfunction prevention valve. Refer to page 974 for details on the exhaust malfunction prevention valve.
- Note 3: If the port size, electrical connection, option, or voltage is changed for solenoid valves (1), (2), the product is processed as a customized order.
- Note 4: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.
- Note 5: Refer to dimensions for positions of solenoid valves (1) and (2).
- Note 6: When masking plates are used for all solenoid valves, electrical connections and rated voltage options are to be left blank.

Refer to page 957 for the solenoid valve model no. list.

CXU30-4G2 Series

Internal structure and parts list

• 2-position single

F.R.L. unit Pneumatic auxiliary components Air unit components Precision components Pressure sensor

Sensor/ controller

Total air system

Main line unit

Ending



No.	Parts name	Material
1	E type connector socket assembly	-
2	Coil assembly	-
3	Pilot exhaust check valve	Nitrile rubber
4	Piston D assembly	-
5	Manual operating device	Resin
6	Piston room	Resin
7	Manual protection cover	Resin
8	Spool assembly	-
9	Plate	Resin
10	Body	Aluminum alloy die-casting
11	Piston S assembly	-
12	Сар	Resin
13	Module sub-base	Aluminum alloy die-casting
14	Fitting adaptor	Resin
15	Cartridge type push-in fitting	-
16	DIN terminal box assembly	-

Clean air unit Air unit



E type connector type E



E type connector type E Ø 6 Ø 9 8 10 0 2 4 6 3 ł 669-13 ۷. 1 Н Ð

DIN terminal box type B



3-position



0

CXU30-4G2 Series

CKD

955

CXU30-4G2 Series



terminal

assembly

is shipped

facing

inward.

box

 DIN terminal box type (B) Cartridge fitting: Straight type



φ 6 push-in fitting L type (facing rear)



CXU30-4G2 Series

Solenoid valve model no. table

Solenoid valve model no. table

Option			Solonoid volvo model no
Solenoid valve switching classification	Electrical connections Rated voltage		Solenoid valve model no.
0			4G2-MP
	D	1	4GB219-00-BH-1
1	D	3	4GB219-00-BH-3
I	F20	1	4GB219-00-E20H-1
	E20	3	4GB219-00-E20H-3
	Р	1	4GB229-00-BH-1
2	Б	3	4GB229-00-BH-3
2	F 20	1	4GB229-00-E20H-1
	E20	3	4GB229-00-E20H-3
	В	1	4GB239-00-B-1
2		3	4GB239-00-B-3
3	E20	1	4GB239-00-E20-1
		3	4GB239-00-E20-3
	Р	1	4GB249-00-BH-1
4	Б	3	4GB249-00-BH-3
4	E20	1	4GB249-00-E20H-1
		3	4GB249-00-E20H-3
F	В	1	4GB259-00-B-1
		3	4GB259-00-B-3
J	E20	1	4GB259-00-E20-1
	⊏20	3	4GB259-00-E20-3

F.R.L. unit
Pneumatic auxiliary components
Airunit

Air unit components

Precision components

Pressure sensor

Sensor/ controller

Total air system

Main line unit

iii

Ending

Clean air unit Air unit High polymer membrane air dryer



Module check valve **CXU10-CHV** Series

Completely blocks reverse flow of fluid such as compressed air

Modular connectable to FRL1000 Series Intermediate take-out of air with branching port



Specifications

-			
Pressure sensor	Descript	ions	Descriptions
Sonsori	Working fluid		Compressed air
controller	Max. working pressure MPa		1.0
Total	Min. working pre	ssure MPa	0.03
air system	Proof pressure	MPa	1.5
Main line unit Ambient temperature/fluid temperature °C			None
		d temperature °C	5 to 60
	Weight	kg	0.08
Ending	Effective cross- (IN ⇒ bra	inching port) mm ²	28
,	sectional area (IN ⇒	OUT) mm ²	28

Clean air unit

F.R.L. unit

Pneumatic auxiliary components

Air unit compon

Precision components



ow to order			
CXU10-CHV - 00 - 6 - A			
	Symbol	Descriptions	
	A Port si	ize	
A Port size	Blank	No piping adaptor	Note 1
	6	Piping adaptor (Rc1/8") assembled	Note 2
	8	Piping adaptor (Rc1/4") assembled	Note 2
	10	Piping adaptor (Rc3/8") assembled	Note 2
	MA	Masking adaptor attached	Note 3
	B Option	1	
B Option	Blank	No option	
	A	Fluoro rubber specifications	

A Note on model no. selection

Note 1: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.

Note 2: 1 piping adaptor, the joiner set (joiner, bolt, O-ring), and 2 gaskets are enclosed.

Note 3: A masking adaptor, the joiner set (joiner, bolt, O-ring), and 1 O-ring are enclosed.

How to use



CXU10-CHV Series

Internal structure/dimensions

Internal structure and parts list



			Pneumatic auxiliary components
No.	Parts name	Material	Air unit
1	Body	Polyamide	components
2	Valving element	Nitrile rubber (fluoro rubber)	Precision
3	Valve guide	Polyacetal	components
4	Coil spring	Stainless steel	Pressure
5	Cover	Aluminum alloy	
6	Stopper pin	Stainless steel	Sensor/
7	O-ring	Nitrile rubber (fluoro rubber)	

*Materials in () apply when the option "A" (fluoro rubber specification) is specified.

F.R.L. unit

Ending

Clean air unit

Air unit

High polymer membrane air dryer





Safety precautions

CAUTION

Check the JIS symbol on the body and pipe accordingly.





4-way distributor CXU10-D4/CXU30-D4 Series

Module fitting section branching to 4 directions Fitting section can be mounted and removed from 1 direction Pressure gauge mounting port provided



Specifications

-				
Pressure sensor	Description	າຣ	CXU10-D4	CXU30-D4
Concori	Working fluid		Compre	ssed air
controller	Max. working pressu	ire MPa	1.	0
Total	Proof pressure	MPa	1.	5
aır system	Branching fitting quantity		4	
Main	Port size		None	Rc3/8, Rc1/2
unit	Ambient temperature/fluid tem	perature °C	5 to	60
	Weight	kg	0.1	0.3
Ending				

How to use



:0

Clean air unit Air unit High polymer membrane air dryer

Precision components



How to order

CXU30-D4 - 15	5 - T6		
JIS symbol		Symbol	Descriptions
Rc3/8		Option	
	A Option	Blank	Without pressure gauge port (blanking plug mounted)
Rc1/2 Rc1/2		Т6	Pressure gauge port Rc1/8
Rc3/8		Т8	Pressure gauge port Rc1/4
		G401	With pressure gauge (G401)
		R1	Pressure switch with display PPD mounted

A Note on model no. selection

Note 1: CXU30-D4 can be connected to 2000, 3000 or 4000 Series.

Note 2: There are four connection sections, so the joiner set and gaskets shall be purchased and assembled separately.

Note 3: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.



CXU10-D4/CXU30-D4 Series

Internal structure/dimensions

Internal structure and parts list

• CXU10-D4





components
Precision components
Pressure sensor
Sensor/ controller
Total air system

F.R.L. unit

Pneumatic auxiliary components

Air unit

Main line unit

Ending

Clean air unit
Air unit
High polymer membrane air dryer

No	Dorto nomo	Material			
NO. Farts hame		CXU10-D4	CXU30-D4		
1	Body	Polyamide resin	Aluminum alloy die-casting		
2	Blanking plug assembly	PBT resin, nitrile rubber, steel			
3	Gauge plug assembly	Polyamide resin, nitrile rubber, steel			
	Pressure gauge (G401)	PBT resin, nitrile rubber, polyacetal resin, polycarbonate resin, brass, stee			

Dimensions

• CXU10-D4



CAD



• CXU30-D4





Optional dimensions table

Option	X
Т6	25.5
Т8	25.5
G401	25.5
R1	40

Optional dimensions table

Option	Х
Т6	30.5
Т8	30.5
G401	30.5
R1	45



Turn adaptor CXU10-TA/CXU30-TA Series

How to use

Converts module fitting section by 90 degrees Direction of module components can be changed





Specifications

Pressure sensor	Description	IS	CXU10-TA	CXU30-TA			
Q a ma a mi	Working fluid		Compressed air				
controller	Max. working pressu	re MPa	1.0				
Total air system	Proof pressure	MPa	1	.5			
	Port size		None				
Main line unit	Ambient temperature/fluid temp	erature °C	5 to	o 60			
	Weight	kg	0.03	0.12			

Ending

F.R.L. unit

Pneumatic auxiliary components

Air unit components

Precision components

How to order



CXU10)- TA - 00

	Symbol	Descriptions					
	A Model no.						
A Model no.	CXU10	1000 Series					
	CXU30	3000 Series					

A Note on model no. selection

- Note 1: CXU30-TA can be connected to 2000, 3000, or 4000 Series.
- Note 2: The joiner set (joiner, bolt, O-ring) and 1 gasket are enclosed.

Internal structure and parts list/dimensions

● CXU10-TA • CXU30-TA A တိ 45 A Α A Тор Cross section A-A Тор Cross section A-A 36 45

Side

No.	Porto nomo	Material				
	Parts name	CXU10-TA	CXU30-TA			
1	Body	Polyamide resin	Aluminum alloy die-casting			

Side

962	СК	D

10

Front



Front





Masking adaptor **CXU10-MA** Series

Used for masking the fitting section of 1000 Series



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lir unit	
omnononto	

Precision components

Pressure sensor

Sensor/ controller Total air system Main line unit

F.R.L. unit

Pneumatic auxiliary

Specifications					
Descriptions	CXU10-MA				
Working fluid	Compressed air				
Max. working pressure MPa	1.0				
Proof pressure MPa	1.5				
Port size	None				
Ambient temperature/fluid temperature °C	5 to 60				
Weight kg	0.02				



How to order



A Note on model no. selection

Note 1: 1 O-ring is included. Note 2: A hexagon nut for fixing the T type bracket is included with the T type bracket.

Internal structure and parts list/dimensions



Optional dimensions table

Option	A	В	С
В	40	60	-
BH	45	65	Identification "H"



Precision components



Module conversion adaptor

CXU13-CA Series

Connectable to 1000, 2000, 3000 or 4000 Series



Specifications

_				
Pressure sensor	Descriptions	CXU13-CA		
Canaari	Working fluid	Compressed air		
controller	Max. working pressure MPa	1.0		
Total air system	Proof pressure MPa	1.5		
	Port size	None		
Main line unit	Ambient temperature/fluid temperature °C	5 to 60		
	Weight kg	0.04		

Ending

How to order



High polymer membrane air dryer

CXU13-CA - 00

Note: CXU13-CA can be connected to 2000, 3000, or 4000 Series.

C1000-J100, C4000-J400 joiner set (joiner, bolt, O-ring), and 1 gasket are enclosed.

Internal structure and parts list/dimensions

• CXU13-CA





Тор



Front

Cross section A-A



Side

No.	Parts name	Material
1	Body	Aluminum alloy die-casting

How to use





C

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Bracket/joiner **B-W/J-W** Series O-ring/gasket/pipe plug

ORING/GASKET/CXU-PP Series RoHS CAD

F.R.L. unit Pneumatic auxiliary components

Air unit components

Precision components **Dimensions and applications** Pressure T type bracket set sensor Model no.: B110-W/B110-H-W/B310-W/B410-W Sensor/ controller Applications Total air system Center of Note: By using B110-H-W, 1000 Series can be adjusted Port size Main line unit to the same height as 3000 Series \mathcal{O} Model no. В С Applicable model Α D E F G н κ J U B110-W 1000 Series 45 35 10 100 5.5 7.5 16 25 7.5 JAS0-2013 40 Ending B110-H-W 1000 Series 45 35 10 100 5.5 7.5 16 30 7.5 JAS0-2013 45 2000 Series B310-W 60 45 7 27 JISB2401-P21 45 10 125 14 22 7 3000 Series Clean air unit B410-W 4000 Series 60 45 10 125 7 14 22 37 7 JISB2401-P21 55 Air unit Joiner set Model no.: C1000-J100-W C4000-J400-W High polyme membrane air dryer Example



Model no.	Applicable model	Α	В	С	D	E
C1000-J100-W	1000 Series	10	36	26	M3.5	JAS0-2013
24000	2000 Series					119
1400 W/	3000 Series	21	44	32	M5	DIG D2401 D21
J400-VV	4000 Series					D2401-F21

O-ring, gasket



		Material: NBR		
Model no.	Applicable model	Standards		
C1000-ORING	1000 Sorios	JASO-2013		
C1000-GASKET	1000 Selles	For CKD		
C4000-	2000 Sorios	JIS		
ORING	2000 Series	B2401-P21		
C4000-	4000 Series	For CKD		
GASKET	4000 Selles			
The sales unit is 5 pieces/set.				

Pipe plug



	Material: Steel
Model no.	Thread standards
CXU-PP-6	R1/8
CXU-PP-8	R1/4
CXU-PP-10	R3/8
CXU-PP-15	R1/2

Note: 5 pipe plugs are included in one set.





Safety Precautions for Fluid Control Components

Refer to the "General Purpose Valves (No.CB-03SA-1)" for cautions on general fluid control components. Always read this section before use.

Specific cautions: 2 port direct acting solenoid valve CXU10-FAB3, CXU30-FAB4U/2 port pilot operated solenoid valve CXU30-FAD/2 port pilot kick type solenoid valve CXU30-ADK

Design & selection

Main

line unit

Ending

Clean air unit

Air unit

High polymer membrane

air dryer

F.R.L unit

Pneumatic auxiliary components

Air unit compon

1. Safety design

A WARNING

This product cannot be used as an emergency shut-off valve.

The valves listed in this catalog are not designed as valves to ensure safety such as emergency shut-off valves. When using in such a system, always take separate measures that will accurately ensure safety.

Take measures to prevent harm to operators or objects if this product fails.

- Leakage current from other fluid control components When using a PLC having a CR circuit to absorb the surge voltage generated from a switching element, etc., the leakage current could adversely affect the operation of the solenoid valve. Keep leakage current to less than the value given in the safety precautions for each product in this catalog or the value given for each product.
- Min. operating pressure differential Use the pilot valve at a pressure higher than the min. operating pressure differential within the specifications listed

in this catalog. (CXU30-FAD)

2. Working fluid

A WARNING

Quality of fluid

Foreign matter such as rust or dirt in fluid causes operation faults or leaks, and lowers product performance. Provide measures to remove foreign matter.

Fluid temperature

Use the product within the fluid temperature range.

3. Working environment

WARNING

- Only explosion proof solenoid valves and air operated valves can be used in an explosive atmosphere.
 Explosion proof solenoid valves are not available for air units.
 Select from General Purpose Valves (No.CB-03SA-1).
- When using with AC voltage, a beat may occur depending on working conditions.

If the beat is a problem because of the working environment, select DC voltage.

Do not use this product in a corrosive gas atmosphere or an atmosphere that could affect the component materials.

- Do not use this product near a heat generating source or in a location where it may be exposed to radiation heat.
- Use this product within the specified ambient temperature range.
- When using this product in a cold climate, take necessary anti-freeze measures.
 When wrapping insulation around the solenoid valve, etc., do not wrap around the coil section.
- Take appropriate safeguards for degree of protection listed in the catalog specifications.
- Take appropriate safeguards when using this product in places where oil or spatter from welding, etc. could come in contact

4. Securing of space

Securing of maintenance space Secure sufficient space for maintenance and inspection.

5. Leakage current

Leakage current from other fluid control components

When operating the solenoid valve with a programmable controller, etc., check that the output leakage current from the programmable controller is within the following specifications.



Voltage Model no.	100 VAC	200 VAC	12 VDC	24 VDC
CXU10-FAB3 CXU30-FAB4U CXU30-FAD	6 mA or less	3 mA or less	1 mA or less	2 mA or less
CXU30-ADK	6 mA or less	3 mA or less	2 mA or less	1 mA or less

Installation & adjustment

1. Installation

- Always thoroughly read the instruction manual before installing this product.
- Do not apply external force to the coil during installation.
- After installing, check for leaks from pipes and for wire connections, and check that the product is correctly installed.
- 2. Piping

- If the pipe vibrates when the solenoid valve is opened and closed, securely fix the piping.
- The solenoid valve may chatter depending on the circuit. Contact CKD if chattering occurs.
- If the piping cross-section area on the fluid inlet is reduced, the operation may become unstable due to a differential pressure fault during valve operation. The piping on the fluid inlet must have a size that matches the valve port size, and must have no restricted sections. (CXU30-FAD, CXU30-ADK)

3. Wiring

- Use this product within the allowable voltage range. Use outside of the allowable voltage range may lead to operation faults or coil damage.
- Provide a circuit breaker, such as a fuse, on the control circuit to protect electrical equipment.
- If the electric circuit system is vulnerable to solenoid surge, use a solenoid with surge suppressor (optional), or insert a surge absorber, etc. in parallel to the solenoid.
- As a guide, use a wire with a nominal cross section of 0.5 mm² and over. Make sure that excessive force is not applied on the lead wire.
- Use of a switching circuit which does not generate contact chattering will increase the durability of solenoid valves and motor driven valves.

During use & maintenance

1. Maintenance & inspection

A WARNING

Do not touch coils or actuators with hands or body while the power is ON or immediately after it is turned OFF.

The solenoid valve's coil and actuator will heat up when energized. Depending on the product, directly touching them could cause burns.

- Do not touch the electrical wiring connections (bare live parts) with hands or body when they are energized. There is a risk of electric shock. Touching electrical wiring connections while power is ON could lead to electrical shocks.
- Use this product within the max. working pressure and max. operating pressure difference range.
- To ensure optimum use, inspect the product every six months. This frequency varies with the frequency of use.

- Do not use valves as footing or place any heavy objects on top of the valves.
- When using the product with continuous energizing and low frequency, contact CKD.
- If the product has not been in use for over one month, perform a test run before starting actual operation.
- Read the instruction manual thoroughly before starting maintenance to ensure correct operation.
- Always turn the power OFF and release any fluids or pressure before starting maintenance.
- Pay attention to clogging of the filter.

F.R.L. Pneumatic auxiliary components Airunit components Precision

nge. Precision components Pressure sensor Sensor/ controller Total air system

Ending

Main

line unit

0...

air unit
Air unit
High polymer membrane air dryer

CXU series

CXU Series





Safety Precautions for Fluid Control Components

Always read this section before use. Read safety precautions in "General Purpose Valves (catalog no. CB-03-1SA)" as well.

Specific cautions: 2 port pilot operated solenoid valve for compressed air CXU10-EXA Series

Design & selection

1. Checking the specifications

A WARNING

- Use this product in accordance with the specifications range. Use with pressure or temperature exceeding the specifications range may result in damage or operation faults. (Refer to specifications)
 - Contact CKD when using fluids other than compressed air.
- Working fluid Active gases cannot be used, so contact CKD when these applications are required.
- If the product is used under conditions where the pressure difference between the primary side and secondary side while the valve is open is below 0.01 MPa, the diaphragm may vibrate, which can result in early breakage. When using under conditions where there is a chance that the differential pressure or flow rate can become very small as described below, it is recommended that the pilot air external exhaust type be used. Contact CKD for details.
 - When the primary or secondary side of solenoid valve has a needle valve
 - When multiple solenoid valves connected in parallel piping are opened at the same time (The drop in solenoid valve source pressure causes the pressure difference between the primary side and the secondary side to diminish.)

2. Safety design

A WARNING

Take measures to prevent harm to operators or objects if this product fails.

Check leakage current to prevent malfunction caused by leakage current from other fluid control components. When using a programmable controller, leakage current may affect the solenoid valve and cause a malfunction. Note that the values that are affected by leakage current depend on the solenoid valve.



- Using 24 VDC 1.8 mA or less ■ Observe the following precautions when using nylon tubes or urethane tubes for piping material.
 - Use flame-resistant tubes where spatter could scatter.
 When using the standard push-in fitting on the spiral tube, fix the base of the tube with a hose band. Rotation occurs, causing a reduction in holding force.

3. Working environment

Use clean air.

- If the compressed air contains synthetic fluid with chemical or organic solvent, salt, or corrosive gas, do not use such compressed air as it can cause damage and/or operation failure.
- The ozone content in the compressed air should be 0.1 ppm or less. Higher ozone content may cause problems such as operation failure and leakage.
- Protection property (IPX5) of DIN terminal box connection type IPX5 (IEC60529 (IEC529:1989-11)) standards are applied to the test. Avoid use in conditions where water or cutting oil directly contacts the valve.

Explanation of IPX5 protection property symbols and test method

- Degree of protection
 - Note: IP-X5 is based on the following test method.
- IEC (International Electrotechnical Commission) standards

(IEC60529[IEC529: 1989-11])

	Degre	e of protection (Ir	nternational Prote	ction)
1st characteristic no. (protection grade	2nd characteristic no. (protection grade for trespass of water)			
for foreign solid)	Grade	Degree of	protection	Overview of test method (fresh water is used)
	5	Protection against water jets = $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$	No harmful effects occur even when water is sprayed with nozzles from all directions.	Using the following test device, spray water for 1 minute per 1 m ² of test sample (exterior) surface area from all 2.5 to 3 m directions, for a total of 3 minutes and over. Water discharge nozzle bore size: \$6.3 mm

СКД

Sensor/ controller Total air

F.R.L. unit

Pneumatic auxiliary components

Air unit compone

Precision components

Pressure

sensor

System Main line unit

Endina

Clean

air unit

Air unit

High polyme membrane

air dryer

CXU Series



Clean air unit

Air unit

High polymei membrane

air dryer

4. Durability

Using the solenoid valve with continuous energizing can cause a deterioration of performance. Contact CKD when using the solenoid valve under such conditions.

5. Pneumatic pressure source

ACAUTION

Install a pneumatic filter just before using the pneumatic component in the circuit.



- Do not supply other than compressed air.
- Use clean compressed air that does not contain corrosive gases.
- Use the dry compressed air that does not cause moisture inside the piping.



- Temperature drop in the pneumatic piping or components generates drainage.
- Operation faults could occur if drainage enters the air flow rate path in pneumatic components and temporarily blocks passage.
- Drainage could cause rust, making the pneumatic device fail.
- Use compressed air that does not contain oxidized oil, tar, carbon, etc., from the air compressor.
 - If oxidized oil, tar, or carbon enters the air compressor and solidifies, resistance at the sliding section will increase, and could lead to operation faults.
- Use compressed air that does not contain solid foreign matter.
 - Any solid foreign matter in the compressed air can enter the pneumatic components and cause wear, locking, or internal leakage in the sliding parts.

6. Surge suppressor

KD

The surge suppressor attached to a solenoid valve serves the purpose of protecting the output contact for operating solenoid valve. The protective effect on other peripheral components cannot be expected; unprotected components can be subject to damage or malfunction caused by surge. In contrast, surge can also be absorbed by other components, which may result in a burn-out or other damage. Please note the following points. The surge suppressor regulates the solenoid valve surge voltage that can reach a few hundred volts to a lower voltage level that the output contact can tolerate. Depending on the output circuit that is being used, this may be insufficient, resulting in damage or malfunction. Before use, check the surge voltage limiting level of your solenoid valve, and the output component proof pressure and circuit composition or return delay time, in order to determine whether or not to use the component. If necessary, implement a separate antisurge protection. This solenoid valve with surge suppressor can also suppress inverse voltage surge that occurs when the product is turned OFF, to the level shown in the table below.

Specifications voltage	Inverse voltage when OFF		
24 VDC	Approx. 47 V		

If the output unit is NPN type, always connect a contact protection circuit in order to avoid the risk of surge voltage equivalent to the sum of the voltage shown in the table above and the power supply voltage being applied to the output transistor.

<Output transistor protection circuit: Installation example 1>



<Output transistor protection circuit: Installation example 2>



When solenoid valves are connected in parallel with other components or solenoid valves, inverse voltage is applied to these components and/or solenoid valves when the solenoid valve is turned OFF. Even in the case of a solenoid valve for 24 VDC with surge suppressor, surge voltage may reach minus several tens of volts for some models, and this inverse voltage may cause damage to or malfunction in the other parallel-connected components. Avoid parallel connection with components that are vulnerable to inverse voltage (example LED indicator lights). Furthermore, in the case of operating multiple solenoid valves in parallel, surge from another solenoid valve may flow into the surge suppressor of a solenoid valve with surge suppressor, and with certain current value, cause the surge suppressor to burn out. Even in a parallel operation of multiple solenoid valves with surge suppressors, surge current can concentrate in the surge suppressor with the lowest limiting voltage and burn it out. Due to variations in surge suppressor limiting voltages among solenoid valves of the same model no., in the worst case the surge suppressor may burn out. Avoid parallel operation of multiple solenoid valves.



When a surge suppressor built into a solenoid valve is damaged by overvoltage or overcurrent from another solenoid valve, in most cases it turns into a state of short circuit. For that reason, large current flows when the output is turned ON after the damage is incurred. In the worst case, this may result in damage or fire in the output circuit and/or solenoid valve. Do not continue energizing in a state of malfunction. Additionally, to prevent large currents from continuing to flow, connect an overcurrent protection circuit to the power supply and drive circuit, or use a power supply with overcurrent protection.

7. 100 VAC specifications

100 VAC specifications have a built-in all wave rectified circuit.

Installation & adjustment

1. Installation

🛦 warning

- After mounting, do not clean or paint with water or solvent.
 - It is made of resin parts, and could be damaged.
- Make sure that the fitting and tube are not twisted or pulled, and that moment load is not applied.
- Make sure that the tube is not worn or damaged.
 Tubing could be crushed, break, or be dislocated.

2. Pre-operation confirmation

- When supplying compressed air after connecting pipes, do not apply high pressure suddenly.
 The pipe connection could dislocate causing the pipe tube to bounce and result in accidents.
- Before supplying compressed air after connecting pipes, check that there are no air leaks at any pipe connections.
 - Use the product after checking for air leaks by applying leak detection liquid on the piping connections.

3. Piping

- Connect piping so that connections are not dislocated by system movement, vibration, or tension.
- For tube used with push-in fitting, cut the tube to right angle by the dedicating tool.
- Confirm that the tube has been inserted properly, and make sure that there is no tension during use. The tube could be dislocated or damaged if there is any tension.
- Make sure that the fitting and tube are not twisted or pulled, and that moment load is not applied.
- Use the designated tube.
- Particularly in the case of super-flexible urethane tubes, attach insert sleeves for use.

If SSR is used to turn the solenoid valve ON and OFF, depending on the type of SSR, a return failure may occur to the solenoid valve.

Use caution when selecting SSRs. (It is recommended to consult with the relay or sequencer manufacturer.)

F.R.L. unit

(U Series

Pressure sensor

Sensor/ controller

Total air system

Main

Ending

Clean

air unit

Air unit

line unit

- Securely insert the tube to the tube end, and make sure that the tube cannot be pulled off.
- Cut the tube with a dedicated cutter, and cut at a right angle.

4. Lead wire connection

Connect the lead wire appropriately.

The following lead wire should be used:

Electrical connection symbol	Descriptions	Conductor size	Conductor sectional area	O. D. of insulator	O. D. of covering
Blank	Grommet lead wire	AWG#24	0.22 equiv.	1.42	-

5. DIN terminal box

A WARNING

As there is a risk of electric shock when assembling or disassembling the terminal box, perform the assembly and/or disassembly after turning off the power supply.

Disassembly

- Loosen screw (1) and pull cover (2) in the direction of screw (1) to remove the connector from coil assembly (12).
- Pull out screw (1) from cover (2).
- Notch (9) (next to the GDSN mark) can be found at the bottom of terminal block (3). Insert a compact flathead screwdriver in the gap between housing (2) and terminal block (3) and pry to remove terminal block (3) from cover (2) (Refer to Fig. 1). Remove the terminal block without applying excessive force. There is a risk of damage.
- Remove cable gland (4) and take out washer (5) and rubber packing (6).





Main line unit

Ending



Wiring Wiring preparation

- The applicable dimensions for cable (7) are as the VCTF2(3) core (bore size: ϕ 3.5 to 7.0 mm) defined in JIS C3306.
- · The length of the cable lead wire sheath pealing is 10 mm.
- · Both twisted wires and solid wires can be used for wiring.
- · When using a twisted wire, avoid connecting a pre-soldered wire
- · When using crimp sleeve (10) at the end of the twisted wire, select H0.5/6 (0.3 to 0.5 mm²) or H0.75/6 (0.75 mm²) made by Weidmüeller Japan, or an equivalent product. Crimp sleeves are not included.

Wiring

- Pass cable (7) through cable gland (4), washer (5), and rubber packing (6) in this order, and insert it into cover (2).
- · Connect to terminals 1 and 2. There is no polarity. • The recommended tightening torque is 0.2 to 0.25 N m.

Assembly

- Set the wired terminal block (3) on cover (2). (Push in until it clicks.)
- * Terminal block can be set in four different directions (Fig. 2). Insert rubber packing (6) and washer (5) in this order into the cable
 - through-hole in cover (2), and securely tighten cable gland (4). Remarks: The recommended tightening torque for cable gland is 1.0 to 1.5 N·m.
- Pull the cable to check that it does not disconnect. Place gasket (8) between the bottom part of terminal block (3) and the plug of coil assembly (12), insert the connector, insert screw (1) from over cover (2) and tighten it. Remarks: The recommended tightening torque for screws is 0.2 to 0.25 N·m.





During use & maintenance

1. COMMON

- Continuous energizing over a long period of time may deteriorate the performance of the solenoid valve. Furthermore, use caution under the following use conditions:
 - When the energized time exceeds non-energized time in intermittent energizing
 - When one energizing session exceeds 30 minutes in intermittent energizing

Consider heat dissipation when installing the product. Contact CKD when energizing this device continuously.

Instantaneous leakage

With the pilot operated 2 port valve, if sudden pressure is applied when the compressor starts with the valve closed, the valve may open for an instant causing fluid to leak. Caution is required during use.

Disassembly

Do not disassemble this valve. Once disassembled, the valve may not retain its valve performance.

The coil and AC rectifier stack generate heat while the valve is energized and stay hot during that time and immediately afterwards. Do not touch these parts with your hands and keep your body away from them.

Pressure difference

KΠ

Under the following conditions, make sure to set the pressure so that the pressure difference while the valve is open does not drop below 0.01 MPa. If a pressure difference of at least 0.01 MPa cannot be ensured while the valve is open, the diaphragm

may vibrate, which can result in early breakage.

- When a needle valve is mounted on the secondary side • When multiple solenoid valves connected in parallel piping (module and manifold connection) are opened at the same time (The drop in source pressure causes the pressure difference between the primary side and the secondary side to diminish.)
- If sufficient pressure difference between the primary side and the secondary side cannot be ensured while the valve is open, or if the pressure difference is unknown, the pilot air external exhaust type is recommended. Contact CKD for details.
- When installing the valve, make sure that no tension is applied to the coil lead wire.
- When carrying the product, hold the body. (Do not carry the product by holding the lead wire, making the product hang by the lead wire.)
- When the regulator and solenoid valve are directly coupled, the parts could mutually vibrate causing resonance and chattering.
- If the piping sectional area on the fluid inlet is reduced, the operation may become unstable due to a differential pressure fault during valve operation. For the fluid supply side, use piping of a piping size that matches the port size of the valve.
- Depending on your use conditions, the operation of the solenoid valve may become unstable after starting operation. Always perform a test run before using the product for actual operations.
- Avoid using the product for applications that involve the fittings continuously turning or swaying. Fittings may become damaged.

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During use & maintenance

2. CXU10-EXA standard product Internal exhaust specifications: Ensuring the min. operating pressure differential

Target model no.: CXU10- $\frac{\text{EXA}}{\text{GEXA}}$ -(port size) -0 (coil option) -(voltage symbol) Because this product is a pilot operated solenoid valve that opens and closes the valve based on differential pressure before and after the solenoid valve, a pressure difference ($\Delta P = P1 - P2$) of at least 0.01 MPa must be secured while the valve is open, in order to ensure that the valve open operation is performed correctly. If such pressure difference ΔP cannot be secured, the diaphragm may vibrate upon use, which can result in early breakage.

Pressure difference $\triangle P$ is determined by flow rate Q that flows in the solenoid valve. The larger flow rate Q is, the greater pressure difference $\triangle P$ is. The guideline values for the "required operating flow rate" for ensuring a pressure difference of at least 0.01 MPa while the valve is open are as shown in the figure below.



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Air unit

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P1: solenoid valve primary side, valve open pressure (MPa)

- (1) When selecting a product, check the above figure to make sure that the necessary pressure difference ΔP is secured with the required flow rate.
- (2) Note that particularly in the following cases the required pressure difference and flow rate may not be secured:
 When flow rate is reduced before/after the solenoid valve by using a needle valve, nozzle, or long piping
 - When air supply on the primary side of the solenoid valve is low (insufficient regulator capacity, installation of a needle valve, long piping, etc.)
 - When air consumption by a component sharing the air supply source (regulator, etc.) on the primary side of the solenoid valve increases constantly or temporarily
 - When the flow rate changes and declines due to the fluctuation of the source pressure of the air supply on the primary side of the solenoid valve
 - When multiple solenoid valves are opened at the same time
- (3) When opening multiple products at the same time while using with a manifold type, the components must be selected so that the following is satisfied for flow rate: Required operating flow rate for one station of solenoid valve × Number of stations that you wish to simultaneously open = Required operating flow rate for < supply flow rate</p>
 - (Example) When opening all of the 3-station manifolds at the same time while P1 is 0.3 MPa when the solenoid value is open.

Flow rate that can secure a pressure difference $\triangle P$ of at least 0.01 MPa when P1 is 0.3 MPa is approximately 110 L/min.

Required operating flow rate: 110 L/min. × Open station no.: 3 stations = Inlet required flow rate: 330 L/min or higher.

(4) If the required operating flow rate cannot be secured, or if the flow rate cannot be checked, consider the use of the pilot air external exhaust type (custom order product) or contact CKD.

3. Pilot air external exhaust specifications

With the custom order product, a small amount of pilot air is released outside of the product when the valve opens based on solenoid valve operation. Before using the product, consider the impact of the externally exhausted fluid on the ambient environment. Fluid exhaust sound is heard while the valve is operating. This is not a malfunction.





F.R.L unit

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Pneumatic components

Safety precautions

Always read this section before use. Refer to the "Pneumatic Valves (No.CB-023SA)" for cautions on general valves.

Pilot operated 5 port valve CXU30-4G2 Series

Design & selection

1. Surge suppressor

- The surge suppressor attached to a solenoid valve serves the purpose of protecting the output contact for operating solenoid valve. The protective effect on other peripheral components cannot be expected; unprotected components can be subject to damage or malfunction caused by surge. In contrast, surge can also be absorbed by other components, which may result in a burn-out or other damage. Please note the following points.
 - The surge suppressor regulates the solenoid valve surge voltage that can reach a few hundred volts to a lower voltage level that the output contact can tolerate. Depending on the output circuit that is being used, this may be insufficient, resulting in damage or malfunction. Before use, check the surge voltage limiting level of your solenoid valve, and the output component proof pressure and circuit composition or return delay time, in order to determine whether or not to use the component. If necessary, implement a separate antisurge protection. CXU30-4G2 Series solenoid valve with surge suppressor can also suppress inverse voltage surge that occurs when the product is turned OFF, to the level shown in the table below.

Specifications voltage	Inverse voltage when OFF		
24 VDC	Approx. 47 V		

- If the output unit is NPN type, always connect a contact protection circuit in order to avoid the risk of surge voltage equivalent to the sum of the voltage shown in the table above and the power supply voltage being applied to the output transistor.
- <Output transistor protection circuit: Installation example 1>



<Output transistor protection circuit: Installation example 2>



- When solenoid valves are connected in parallel with other components or solenoid valves, inverse voltage is applied to these components and/or solenoid valves when the solenoid valve is turned OFF. Even in the case of a solenoid valve for 24 VDC with surge suppressor, surge voltage may reach minus several tens of volts for some models, and this inverse voltage may cause damage to or malfunction in the other parallel-connected components. Avoid parallel connection with components that are vulnerable to inverse voltage (example LED indicator lights). Furthermore, in the case of operating multiple solenoid valves in parallel, surge from another solenoid valve may flow into the surge suppressor of a solenoid valve with surge suppressor, and with certain current value, cause the surge suppressor to burn out. Even in a parallel operation of multiple solenoid valves with surge suppressors, surge current can concentrate in the surge suppressor with the lowest limiting voltage and burn it out. Due to variations in surge suppressor limiting voltages among solenoid valves of the same model no., in the worst case the surge suppressor may burn out. Avoid parallel operation of multiple solenoid valves.
- When a surge suppressor built into a solenoid valve is damaged by overvoltage or overcurrent from another solenoid valve, in most cases it turns into a state of short circuit. For that reason, large current flows when the output is turned ON after the damage is incurred. In the worst case, this may result in damage or fire in the output circuit and/or solenoid valve. Do not continue energizing in a state of malfunction. Additionally, to prevent large currents from continuing to flow, connect an overcurrent protection circuit to the power supply and drive circuit, or use a power supply with overcurrent protection.

2. 100 VAC specifications

ACAUTION

100 VAC specifications have a built-in all wave rectified circuit. If an SSR is used to turn the solenoid valve ON and OFF, depending on the type of SSR, a return failure may occur to the solenoid valve.

Use caution when selecting SSRs. (It is recommended to consult with the relay or sequencer manufacturer.)

3. Exhaust malfunction prevention valve

CAUTION

- The exhaust malfunction prevention valve is a check valve. Note that when operating the cylinder rod directly without pressurized, the check valve opens and the cylinder rod does not move.
 - The solenoid valve for 2-position single, 2-position double, and 3-position ABR connection mounted to CXU30-4G2 is provided with the "exhaust malfunction prevention valve" as standard.
 - When using components that are affected by a small amount of leakage or pressure of low sliding cylinders, it may not function properly.
 - If the exhaust malfunction prevention valve is not required, contact CKD. Otherwise, change to the gasket "4G2-GASKET" in which the exhaust malfunction prevention valve is not integrated.

KD

CXU Series Individual precautions

Installation & adjustment

1. Lead wire connection

Lead wire standards differ depending on the type of electrical connections. Connect wires according to the lead wire to be used.

Electrical connection symbol Descriptions Conductor size Conductor sectional area O. D. of insulator

 E
 E type connector (with lead wire)
 AWG#26
 0.13 equiv.
 1.3

 For electrical connections, check that tension by lead wires is not applied to the solenoid valve coil.
 1.3

2. How to use E type connector

- E type connector has top and side connectors to which sockets can be connected either from the top or side directions. The socket assembly is enclosed with shipment. Select the connection direction based on the installation environment.
- How to mount and remove socket
 - When mounting the socket, hold the lever and socket with fingers and insert straight into the square window on the connector body. Align the lever jaw with the groove on the connector body and lock it. When mounting from the top, position the socket so that the lever faces the front. When mounting from the side, position the socket so that the lever is in an upward direction.
 - When pulling out the socket, press down the lever to release its jaw from the groove, then pull straight out.

Groove

0

Lever

Socket



- Strip about 3 mm of the lead wire end. Align the end of core wires, insert them into the contact terminal, and crimp with a crimp tool. When crimping, check that both the sheath and core wires are held, and 0 to 0.5 mm of the core wire end is visible.
- After crimping, position the contact terminal as shown below, and insert into the square window on the socket. The terminal locks when it is inserted to the end. After inserting, pull the terminal lightly to check that it is locked.



3. DIN terminal box

WARNING

As there is a risk of electric shock when assembling or disassembling the terminal box, perform the assembly and/or disassembly after turning off the power supply.

Disassembly

- Loosen screw (1) and pull cover (2) in the direction of screw (1) to remove the connector from coil assembly (12).
- Pull out screw (1) from cover (2).
- Notch (9) (next to the GDSN mark) can be found at the bottom of terminal block (3). Insert a compact flathead screwdriver in the gap between housing (2) and terminal block (3) and pry to remove terminal block (3) from cover (2) (Refer to Fig. 1). Remove the terminal block without applying excessive force. There is a risk of damage.
- Remove cable gland (4) and take out washer (5) and rubber packing (6).

Notch





Exploded view



Wiring

Wiring preparation

- \cdot The applicable dimensions for cable (7) are the VCTF2(3) core (ϕ 3.5 to 7.0) defined in JIS C3306.
- The length of the cable lead wire sheath pealing is 10 mm.
- $\cdot\,$ Both twisted wires and solid wires can be used for wiring.
- · When using a twisted wire, avoid connecting a presoldered wire.
- When using crimp sleeve (10) at the end of the twisted wire, select H0.5/6 (0.3 to 0.5 mm²) or H0.75/6 (0.75 mm²) made by Weidmüeller Japan, or an equivalent product. Crimp sleeves are not included.
- Wiring
 - Pass cable (7) through cable gland (4), washer (5), and rubber packing (6) in this order, and insert it into cover (2).
 Connect to terminals 1 and 2. There is no polarity.
 - The recommended tightening torque is 0.2 to 0.25 N·m.



F.R.L. unit

auxiliary component Air unit

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Installation & adjustment

- Assembly
 - Set the wired terminal block (3) on cover (2). (Push in until it clicks.)
 - Terminal block can be set in four different directions (Fig. 2).
 Insert rubber packing (6) and washer (5) in this order into the cable through-hole in cover (2), and securely tighten cable gland (4).
 - Remarks: The recommended tightening torque for the cable gland is 1.0 to 1.5 N·m.
 - Pull the cable to check that it does not disconnect.
 Place gasket (8) between the bottom part of terminal block (3) and the plug of coil assembly (12), insert the connector, insert screw (1) from over cover (2) and tighten it.

Remarks: The recommended tightening torque for screws is 0.2



Make sure that the fitting and tube are not twisted or pulled, and that moment load is not applied.

During use & maintenance

1. COMMON

- Continuous energizing over a long period of time may deteriorate the performance of the solenoid valve. Euclidean equation under the following use condition
- Furthermore, use caution under the following use conditions:
 When the energized time exceeds non-energized time in intermittent energizing
- When one energizing session exceeds 30 minutes in intermittent energizing
 Consider heat dissipation when installing the product.
 Contact CKD when energizing this device continuously.

2. Manual operating device

WARNING

- CXU30-4G2 Series is an internal pilot operated solenoid valve. If air is not supplied to the P port, the main valve will not switch even if the manual override is operated.
- A manual protection cover is provided as standard. The manual override is shipped with the manual protection cover closed, so the device is protected and cannot be seen at the delivery. Open the protection cover and operate the manual operating device. Note that the protection cover will not close unless the locking manual operating device is unlocked.
- The manual override is used for both non-locking and locking. The lock is applied by pressing down and turning the device. For locking, be sure to press down first and then turn. If turned without being pressed down, it could damage the manual operating device or air could leak.
- How to open and close manual protection cover Do not apply excessive force to the manual protection cover when opening and closing it. Excessive external force could cause failures. (Below 5 N)



CXU30-4G2 Series DIN terminal box



- How to operate manual override
 - Push non-locking operation Push it in the direction of the arrow until it stops.
 The manual operating device is unlocked when released.



Push/locking operation Push and turn it 90° in the direction of the arrow. The manual operating device is not unlocked even when released.



- When conducting manual operations, make sure that there are no people near the operating cylinder.
- 3. How to replace coil

WARNING

- E type connector coil assembly
 - Replace the coil by removing the set screws shown below. Loosening other screws could cause operation failures. When installing, check that the gasket is installed on the coil side and tightening torque is proper. Improper installation could result in air leakage or operation failures.
- DIN terminal box coil assembly

Replace the coil assembly by removing the set screws shown below. Loosening other screws could cause operation failures. When installing, check that the gasket is installed on the coil assembly side and tightening torque is proper. Improper installation could result in air leakage or operation failures.

The coil assembly of E-connector specifications and DIN terminal box specifications cannot be replaced.





Pneumatic components (F.R.L. unit (modular design))

Safety precautions

Always read this section before use. Refer to Intro 63 for pneumatic components general precautions.

Pneumatic components (F.R.L. unit (modular design))

Design & selection

1. COMMON

A WARNING

- This product is designed for industrial use. Do not use for medical purposes, or any system or circuit that concerns human life.
- Air filter, lubricator plastic bowl, lubricator' drip window, and pressure gauge lens.
 These parts are made of polycarbonate, and cannot be used in environments containing synthetic oil, organic solvents, chemicals, coolant, screw locking agent, leak detection solutions, or hot water, etc., or where these substances may come in contact with them.

Refer to page 983 for details on bowl chemical resistance.

Piping load torque

Make sure that no piping load or torque is applied to the body or pipes.

Series	1000	2000	3000	4000
Max. torque N·m	10	10	50	50



With the 1000 Series, application of a torque of 20 N \cdot m and over on piping is "hazardous" as the piping could be damaged. Use within the specified torque, even when using the piping adaptor.

CAUTION

Large drainage

Install the air dryer and drain discharger before the air filter.

If there is a large drainage from the compressor. Hot and highly humid air could shorten the device life or result in corrosion.

Dry air

Rubber parts for the regulator could deteriorate quickly, so use of a fluorine rubber valve assembly is recommended. Contact CKD when required.

- For compressor circuit of water lubrication method Take measures to prevent chlorine-based substances from entering the compressed air.
- Use the auto-drain under the working conditions below.

Failure to observe this could result in operation faults.

NO type automatic drain (exhaust without pressurized): For "F"

- Use a compressor with a capacity of 0.75 kW (90 l/min. [ANR]) and over.
- Set the working pressure to 0.1 MPa and over. (Air is purged with initial drainage until pressure reaches 0.1 MPa.)

NC type automatic drain (no exhaust without pressurized): For "F1"

A compressor with a capacity of 0.75 kw or less is available.

Set the working pressure to 0.15 MPa and over.

For 1000 Series NC automatic drain

Set the working flow rate to less than the max. working flow rate.

Avoid using this product in places with high vibration, such as where the compressor is installed, because air could leak from the drain discharge port when the float vibrates.

Avoid drain overflow. It may cause operation faults.

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F.R.L

unit

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2. Regulator, filter and regulator

A WARNING

Install a safety device where an output pressure exceeding the regulator's set pressure value could result in damage or faulty operation of secondary side devices.

The regulator cannot process residual pressure (secondary pressure removal) when primary pressure is released.

Use a regulator with a check valve when residual pressure must be processed.

In some cases, the regulator cannot be used for secondary side sealing circuits or balance circuits. Contact CKD for these applications.



Air unit

High polymer membrane air dryer

Set secondary pressure of the regulator to 85% or less of the primary side, or else the pressure drop could increase.

When using regulators in parallel as shown below, do not use the OUT side as a closed circuit. If a closed circuit is required, set a check valve at the regulator's OUT side.



3. Lubricator

A WARNING

Lubricator

Contact CKD for lubrication of the air motor and bearing. Also contact CKD when using this unit at a high frequency such as in a press machine.

If the working air quantity is low for the lubricator, oil may not drip. Check the min. air quantity required for dripping oil.

4. Pressure switch

When using a digital pressure sensor PPX or compact pressure switch PPD, avoid using it as a set with the lubricator. The switch is not a drip-proof structure, so operation could be disabled if the lubrication oil comes in contact with it.

5. Shut-off valve

WARNING

Cautions on shut-off valve

 EXH port is dedicated for installation of the silencer. Tighten with a torque of 3 N·m or less -- as far as is tightened manually. Avoid piping that applies piping load or torque, etc., to

Avoid piping that applies piping load or torque, etc., to EXH port.

 If exhaust is incomplete because of air quality, manually discharge air by operating the knob (turn and raise).

6. Module check valve

This valve cannot be used as a stop valve that has no leakage. Slight leakage is allowed in product specifications.



CXU series

Installation & adjustment

1. COMMON

CAUTION

- Avoid installing this product where it is subject to direct sunlight.
- Flush and wash pipes to be used. Dirt or foreign matters in piping will lower product performance.
- Check that foreign matters do not enter when tightening pipes or fittings.
 Make sure that no piping screw chips or sealant material enters the pipes when connecting the pipes and fittings. Dirt or foreign matters in piping will lower product performance.
- To use F.R.L. correctly
 - 1. Set the regulator pressure to increase. After setting the pressure, lock the handle. Check primary pressure carefully before setting the pressure.
 - 2. Check the arrow indicating the air inlet before connecting. A reverse connection could result in improper operation.
 - Install the air filter and the lubricator vertically with case facing downward. Emission defective and dripping of drain could not be checked.
 - 4. Use of the auto-drain where vibration is present could cause faults and malfunctions.

Drain piping of auto-drain should be piped under the following condition. Not doing so could cause malfunctions.

Use an inner diameter of ϕ 5.7 and over and piping of 5 m or less for the drainage section. Do not use vertical piping. Pipe so that no lateral load applies on the bowl.

Fix the hexagon side of the cock before screwing the fitting, etc., into the Rc1/8 female screw.

Piping screw-in torque Make sure that excessive torque is not applied on the body and piping when piping.



Drain piping

- The drain piping for the plastic bowl has a barbed nipple, and can be directly installed. However, confirm that the drain cock is closed before inserting the tube.
- Tightening torque of drain cock
 - Max. tightening torque of drain cock of a plastic bowl is as follows.
 - · 1000 Series: 0.1 N·m
 - \cdot Others: 0.5 N \cdot m
- Drain piping of metal bowl with auto-drain
 - Fix the cock's hexagonal face before screwing the fitting etc., into the drain discharge port female threads. If tightened without fixing the hexagonal face, it may result in breakage. When using the metal bowl with auto-drain, if the drain is piped with tightening fitting, manual operation is not possible.



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2. Regulator, filter and regulator

- Regulator, filter regulator
 - Lightly tighten (0.6 N·m or less) mounting screws for embedded pressure gauge G401-OP, G401, and gauge plug.
 - When installing the pressure gauge with a safety mark on the gauge plug, or when installing a general screw-in pressure gauge, tighten with a torque of 10 to 15 N·m or less.
 - Do not move or swing the product holding the adjustment knob on the regulator.
 - Check that pressure exceeding the pressure gauge's full scale is not applied because the pressure gauge could be damaged. (Pay special attention when using the fullscale 0.2 or 0.4 MPa pressure gauge.)

3. Lubricator

Adjustment of lubricator oil drip

Adjust the oil rate by turning the adjusting dome with bare hands. For closing, tighten with a torque of 0.5 N·m or less. The numbers (scale) on the dial are a guide used after adjustment, and do not indicate the oil drip rate.



4. Pressure switch

CAUTION

- Pressure switch (PPD) mounting method
- Separate the body from base.
- Install the O-ring.
 - * Refer to the dimension drawing for the direct mount type (PPD-****-1F-1)(PPD-****-1F-2) on the left, and install the O-ring to the O-ring groove with a clean finger.
- Install the base.
 - Install the base with two screws enclosed (M3). * Carefully install at the designated position in the designed direction while taking care not to dislocate the O-ring.
 - * Do not tighten one screw completely at once, and instead tighten the two screws so that they are balanced. (Tightening torque $0.5 \pm 0.1 \text{ N} \cdot \text{m}$)



Install the main unit to complete.

Confirm that there is no dirt or foreign matter in the base, and then insert the body. Make sure that the body does not catch on the base. Next, insert the two keys. While pressing the body exterior against the base with the head of the keys facing each other, insert the keys so that they are completely stored on the recesses on the base.



- Note) Insert two keys. Check that both keys are installed
- before pressurizing. Note) When changing the position or orientation of the PPD which has been installed once, install using the new keys, O-rings, and set screws enclosed with the option kit.

5. Pressure gauge

CAUTION

Pressure gauge

Repeated and sudden increases and decreases in pressure and pressure pulsation must be avoided because it could adversely affect pressure gauge service life. Either ease pressure fluctuation in the circuit or contact CKD so that a pressure gauge with a cushioning screw can be prepared. Applying pressure exceeding the pressure range could damage the pressure gauge.

XU Series Individual precautions

During use & maintenance

1. COMMON

🛕 WARNING

■ Regularly, once or more times in six months, check the air filter and lubricator's plastic bowl for cracks, damage, and other deterioration.

Cracks, damage or other deterioration could result in breakage, so if found, replace with a new bowl or with a metal bowl.

- Check the air filter, lubricator plastic bowl, and lubricator drip window periodically for contamination.
 - If parts are heavily contaminated or if transparency has dropped, replace with a new bowl or drip window.
 - Use a diluted neutral household detergent to wash parts, and then rinse well with clean water. Use of other agents could result in breakage.
- Removing bowl of filter and lubricator Before removing the bowl, the compressed air, discharge pressure in the bowl completely, and confirm that no residual pressure remains.

- Check the oil drip rate once a day. If the oil drip is faulty, problems could occur in the unit being lubricated.
- Do not branch the air into lubricating air and oilless air with a distributor. The lubricator oil could reverse flow.
- Performance could drop if the filter element is clogged. Regularly inspect and replace the element.
- Do not disassemble or modify the product.
- Read instructions and precautions enclosed with the product before use or maintenance.





Drainage is started when the cock is turned to the O side, and the discharge is stopped when the cock is turned in the S direction.

Tighten by hand in the S direction.

When the auto-drain is provided, drainage is discharged automatically when it accumulates. Drainage is also discharged manually.









(3)



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F.R.I

2.Filter/regulator

 Element of W1000 to W4000
 Inspect the valve assembly when it is removed during maintenance.
 Do not lose springs, etc., during maintenance.

Spring

3. Filter

A WARNING

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Clean air unit

Drain so that air filter drainage does not accumulate beyond the max.

Components could malfunction if drainage flows into the secondary side.



Metal bowl

Metal bowl

 The resin bowl must not be filled more than the "drain upper limit" or "MAX LEVEL" stamped on the bowl guard.

■ Submicron 0.3 µm element

This filter cannot be washed and reused. When the pressure drops to 0.07 MPa, replace the filter with a new one. (1000 Series are excluded.)

Oil mist filter

The mantle (element) life ends after one year (6000 hours) or when pressure drops to 0.1 MPa. (excluding the X type) Replace the mantle when life is reached. (Do not touch the urethane foam layer when replacing the mantle.)

4. Regulator, filter regulator

- Pull the pressure adjustment knob and release the lock before setting the regulator pressure. The regulator could be damaged if the pressure is set without releasing the lock.
- The set pressure changes from the initial set value based on the working environment and conditions, as well as aging of part materials. Periodically check the pressure, and should there be a change, reset the pressure accordingly.

5. Lubricator

WARNING

Use Class 1 turbine oil (no additive) ISO VG32 for the lubricator. Other oils could cause breakage or improper

operation.

Removing filling plug of lubricator

To prevent the filling plug from popping out, loosen the filling plug by one turn, and then completely depressurize the bowl before removing the filling plug.

Wipe away any dirt around the fill plug that could scatter.



- Close the filling plug after lubricating.
- Never remove the bowl without removing the filling plug (while the bowl is pressurized). (L3000 to L4000)
- With 1000 Series, never remove the bowl with the filling plug set to the SHUT side (while the bowl is pressurized). (L1000)

- Periodically replenish oil in the lubricator bowl so that it does not drop below the lower limit.
- When lubricating the L1000, pressure in the bowl is released by turning the filling plug. Refer to the section on During use & Maintenance, above, for details on using the fill plug. (Lubrication is done while pipes are pressurized.)

Check that there is no pressure in the bowl, remove the bowl and bowl guard, and then directly lubricate to the bowl.

Refer to the previous page for details on removing the bowl.

When lubricating the L3000 to L4000, loosen the fill plug slightly to release the pressure in the bowl, then remove the fill plug. Refer to the section above for details on using the fill plug.

(Removing the fill plug enables lubrication to be done while pipes are pressurized.)

Oil is supplied from the fill plug hole, and the bowl is directly lubricated by removing the bowl and bowl guard.

Refer to the previous page for details on removing the bowl.


CXU Series Individual precautions

FRL components

Chemical resistance of plastic

WARNING

- The chemical resistance of plastic parts is shown below.
- Avoid using products in an atmosphere where chemicals are contained in compressed air, the atmosphere, or where they could adhere to parts.
- Use in the above state could lead to bowl damage and accidents.
- Avoid using these types of chemicals or in an atmosphere containing these chemicals.
- A metal bowl is used if these chemicals must be used.

Chemical resistance of plastic bowl/body Use a metal bowl in an atmosphere containing the following chemicals. Check whether the testing solutions, sealants and adhesives contain the following chemicals.

Chemicals	Category of chemicals	Main products of chemicals	General usage examples	For polycarbonate bowl	For nylon bowl	For nylon body	Main line unit
Inorganic chemicals	Acid	Hydrochloric acid, sulfuric acid, hydrofluoric acid, phosphoric acid, chromic acid, etc.	Acid pickle for metals, acidic degreasing solution, coating treatment solution, etc.	×	×	×	Ending
	Alkaline	Alkali matters such as caustic soda, caustic potash, calcium hydroxide, aqueous ammonia, sodium carbonate	Alkaline degreasing solution for metals Soluble cutting oil, leakage detection agent	×	0	0	
	Inorganic salt	Sodium sulfide, sodium nitrate, potassium bichromate, sulfate of soda, etc.		×	0	0	Clean air unit
Organic chemicals	Aromatic hydrocarbon	Benzene, toluene, xylene, ethyl benzene, stylene, etc.	Contained in paint thinner (benzene, toluene, and xylene)	×	×	×	Air
	Chlorine aliphatic hydrocarbon	Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichlene, perchlene, carbon tetrachloride	Organic solvent-based washing solution for metals (trichlene, perchlene, carbon tetrachloride)	×	0	0	High polymer membrane air dryer
	Chlorinated aromatic hydrocarbon	Chlorobenzene, dichlorobenzene, benzene hexachloride (B/H/C), etc.	Agricultural chemicals	×	0	0	,
	Petroleum components	Solvent naphtha, gasoline, kerosene		×	0	0	
	Alcohol	Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol	Used as antifreezing agent Leakage detection agent	×	×	×	
	Phenol	Carbolic acid, cresol, naphthol, etc.	Disinfectant solution	×	×	×	
	Ether	Methyl ether, methyl ethyl ether, ethyl ether	Additive of brake oil	×	0	0	
	Ketone	Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc.		×	×	×	
	Carboxylic acid	Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc.	Dyes/oxalic acid used for aluminum processing, phthalic acid used for paint base Used as leakage detection agent	×	×	×	
	Ester	Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP)	Used as lubricant, synthetic oil, additive for rust preventing agent, plasticizer for synthetic resin	×	0	0	
	Oxyacid	Glycol acid, lactic acid, malic acid, citric acid, tartaric acid		×	×	×	
	Nitro compound	Nitro methane, nitro ethane, nitro ethylene, nitro benzene, etc.		×	0	0	
	Amine	Methylamine, dimethylamine, ethylamine, aniline, acetoacetanilide, etc.	Additive of brake oil	×	×	×	
	Nitrile	Acetonitrile, acrylonitrile, benznitrile, acetoylidyne nitrile, etc.	Raw material for nitrile rubber	×	0	0	

 $\bigcirc:$ Available, $\times:$ Not available (plastic will be damaged.)

auxiliary components Air unit componer

F.R.L. unit

Pneumatic

Precision components

Pressure sensor

Sensor/ controller

Total

air system



F.R.L unit

Pneumatic auxiliary components

Air unit compon

Precision

components Pressure

sensor

Sensor/ controller

air

unit

Air unit

air dryer

Pneumatic components (Air unit (CXU Series))

Safety precautions

Always read this section before use. Refer to Intro 63 for pneumatic components general precautions.

Air unit CXU Series

Design & selection

Use T type bracket at a regular interval. Single support joiners can be used for 3 or 4 stations, and double support joiners can be used for five or fewer stations.



Use three stations or less for single support

Use five stations or less for double support

■ When using a pilot operated 5 port valve (CXU30-4G2) at max. flow rate, use with three or less stations.

One station consists of two solenoid valves. Up to six solenoid valves can be used.



When using a 2 port pilot operated solenoid valve (CXU10-EXA) at max. flow rate As a reference, use one station when 1000 Series regulator is connected, and use up to four stations



Installation & adjustment

- With the 1000 Series combined unit, the bracket may twist or come off on one side. In this case, tighten and fix the bracket with screws so that it is mounted stably and no problem for use arise.
- CXU13-UN Note on model no. selection If 1000 Series and 3000 Series are combined together with single support, the joiner may be damaged by the load. Use double support.
- Tighten the fixing screw for the 1000 Series joiner with a torque of 1 to 1.2 N·m, tighten the fixing screw for the 3000 Series joiner with a torque of 3 to 4 N·m.

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