


CONTROL VALVE

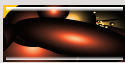
- OUR ORIGINAL SPECIAL PLUG SHAPE REDUCES EFFECTS OF FLUID VISCOSITY AND ALLOWS FOR HIGHLY ACCURATE FLOW CONTROL (IDEAL FOR CORROSIVE FLUID).
- USE OF HIGH-PERFORMANCE ALL ELECTRONIC SERVO ACTUATOR (ELECTRICALLY DRIVEN)
- EMBEDDED WITH ELECTRONIC LIMITER AND OVERLOAD PROTECTION CIRCUIT FOR ALL CYCLE TIME.



COMPATIBLE ACTUATOR **AUTOMATIC**



TYPE AV
For detailed specifications, see **P.120**



TYPE M
For detailed specifications, see **P.129**

MODEL LIST	ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES	POSITIONER
AUTOMATIC	A	CV	*	*	*	*	F	*	***	1	**
	A AUTOMATIC VALVE	CV CV	PNEUMATIC V TYPE AV ELECTRIC M TYPE M	PNEUMATIC F DOUBLE ACTING G AIR TO OPEN ELECTRIC 1 Single-Phase 100V 2 Single-Phase 200V D DC24V	U U-PVC F PVDF	E EPDM F Viflon®F FKM-F C Viflon®C FKM-C	F FLANGED	1 JIS10K D DIN A ANSI	015 15mm ? 100 100mm	1 LUBRICANT FREE	PNEUMATIC 01 EP POSITIONER 02 PIP POSITIONER 03 EIP FR SET 04 PIP FR SET

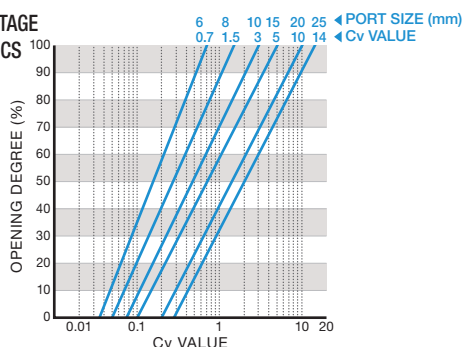
NOTE DIN standard type is U-PVC 15 and 25 mm only. ANSI standard type is U-PVC 15, 25 and 50 mm only.

* Specify only in the case of pneumatic type.

Cv VALUE PER OPENING DEGREE GRAPH

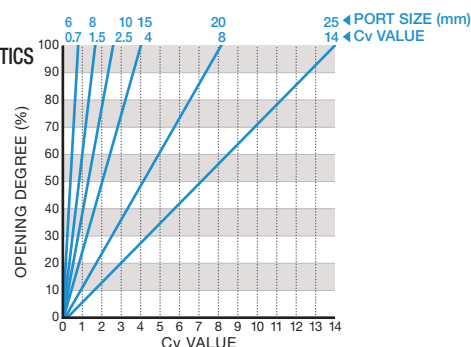
15 mm, 25 mm STANDARD Cv VALUE TYPE

EQUAL-PERCENTAGE CHARACTERISTICS



SIZE (mm)		25					
		15					
PORT SIZE [mm]		6	8	10	15	20	25
Cv VALUE		0.7	1.5	3	5	10	14
RANGEABILITY		20:1	30:1	40:1	50:1	50:1	50:1
STROKE (mm)	SIZE 15 mm	17	16	17	18	-	-
	SIZE 25 mm	17	16	16	16	22	24

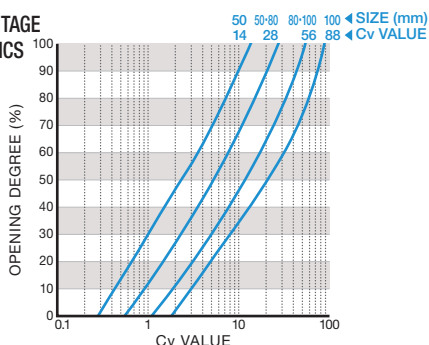
LINEAR CHARACTERISTICS



SIZE (mm)		25					
		15					
PORT SIZE [mm]		6	8	10	15	20	25
Cv VALUE		0.7	1.5	2.5	4	8	14
RANGEABILITY		20:1	25:1	30:1	40:1	40:1	50:1
STROKE (mm)	SIZE 15 mm	16	16	15	16	-	-
	SIZE 25 mm	16	16	14	15	20	25

50 mm - 100 mm STANDARD Cv VALUE TYPE

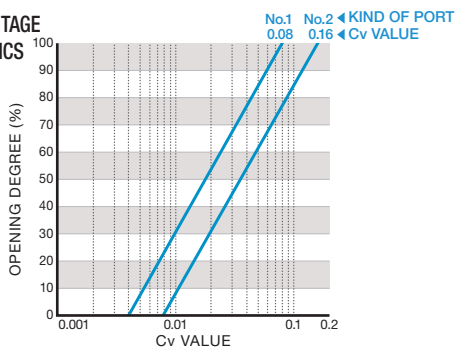
EQUAL-PERCENTAGE CHARACTERISTICS



SIZE (mm)		50		80		100	
KIND OF PORT		S	L	S	L	S	L
Cv VALUE		14	28	28	56	56	88
RANGEABILITY		50:1	50:1	50:1	50:1	50:1	50:1
STROKE (mm)		26	28	30	28	32	28

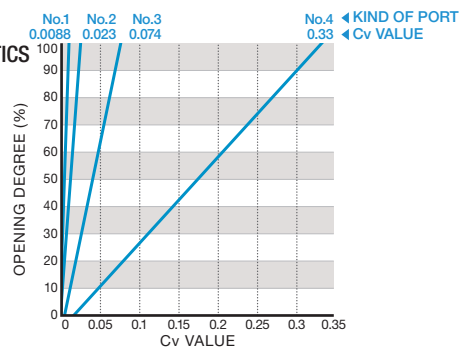
15 mm SMALL Cv VALUE TYPE

EQUAL-PERCENTAGE CHARACTERISTICS



SIZE (mm)		15	
KIND OF PORT		No.1	No.2
Cv VALUE		0.08	0.16
RANGEABILITY		20:1	20:1
STROKE (mm)		16	16

LINEAR CHARACTERISTICS



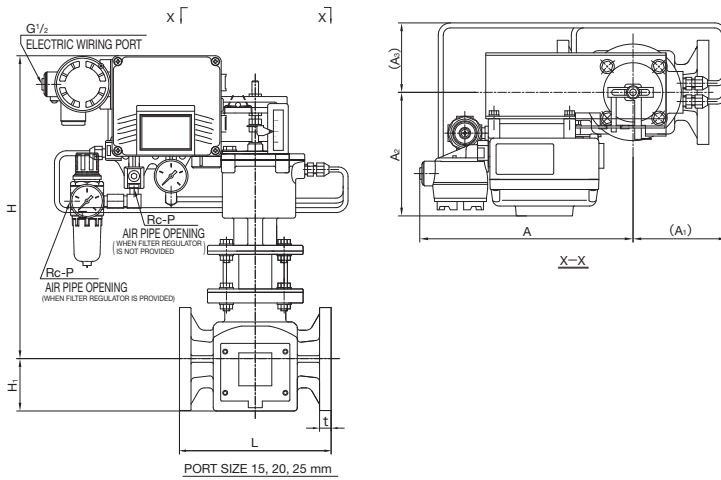
SIZE (mm)		15			
KIND OF PORT		No.1	No.2	No.3	No.4
Cv VALUE		0.0088	0.023	0.074	0.33
RANGEABILITY		15:1	15:1	15:1	15:1
STROKE (mm)		16	16	16	16

TYPE AV

CONTROL VALVE

TYPE—ACWV

CONNECTION / FLANGED—JIS, DIN, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	U-PVC BODY	PVDF BODY
15mm (1/2inch)	AVU-1DA	AVF-1DA
25mm (1inch)	AVU-2DA	AVF-2DA

For detailed specifications, see **P.119**

JIS, DIN (Unit: mm)

mm	H		H ₁		A	A ₁		A ₂	A ₃	P	JIS10K, DIN PN10	
	U-PVC	PVDF	U-PVC	PVDF		U-PVC	PVDF				L	t
15	337	325	51	49.5	259	130	110	150	70	1/4	160	12
25	368	354	63	66.5	259	130	110	150	70	1/4	164	14

ANSI (UNIT: inch)

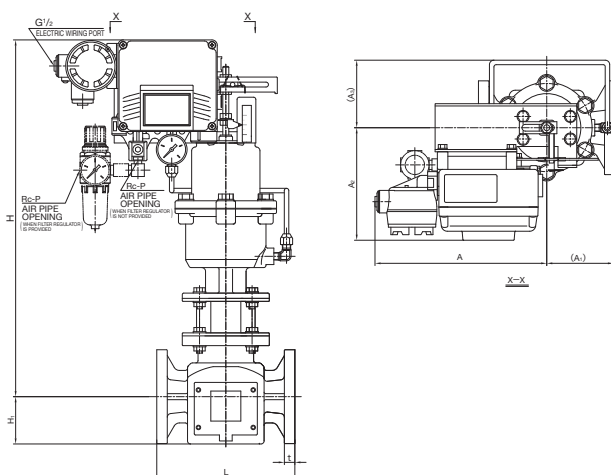
inch	mm	H		H ₁		A	A ₁		A ₂	A ₃	P	ANSI CLASS150	
		U-PVC	PVDF	U-PVC	PVDF		U-PVC	PVDF				L	t
1/2	15	13.27	12.79	2.01	1.95	10.20	5.12	4.33	5.91	2.76	1/4	6.30	0.47
1	25	14.49	13.92	2.48	2.62	10.20	5.12	4.33	5.91	2.76	1/4	6.46	0.55

TYPE AV

CONTROL VALVE

TYPE—ACWV

CONNECTION / FLANGED—JIS, DIN, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	U-PVC BODY	PVDF BODY
15mm (1/2inch)	AVU-1A0	AVF-1A0
25mm (1inch)	AVU-2A0	AVF-2A0

For detailed specifications, see **P.119**

JIS, DIN (Unit: mm)

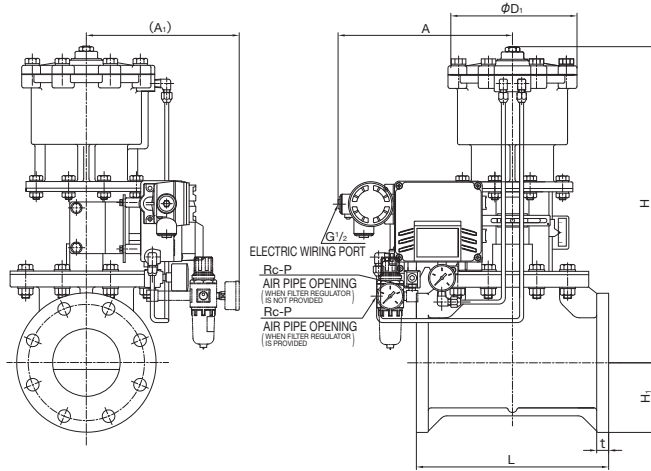
mm	H		H ₁		A	A ₁		A ₂	A ₃	P	JIS10K, DIN	
	U-PVC	PVDF	U-PVC	PVDF		U-PVC	PVDF				L	t
15	438	423	51	49.5	229	89	86	150	90	1/4	160	12
25	475	458	63	66.5	229	89	86	150	90	1/4	184	14

ANSI (UNIT: inch)

inch	mm	H		H ₁		A	A ₁		A ₂	A ₃	P	ANSI CLASS150	
		U-PVC	PVDF	U-PVC	PVDF		U-PVC	PVDF				L	t
1/2	15	17.24	16.67	2.01	1.95	9.02	3.50	3.37	5.91	3.54	1/4	6.30	0.47
1	25	18.70	18.03	2.48	2.62	9.02	3.50	3.37	5.91	3.54	1/4	7.24	0.55

TYPE AV

CONTROL VALVE TYPE—ACV CONNECTION / FLANGED—JIS, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	U-PVC BODY	
50mm (2inch)	AVU-3DA	
80mm (3inch)	AVU-4DA	
100mm (4inch)	AVU-5DA	

For detailed specifications, see **P.119**

JIS (Unit: mm)

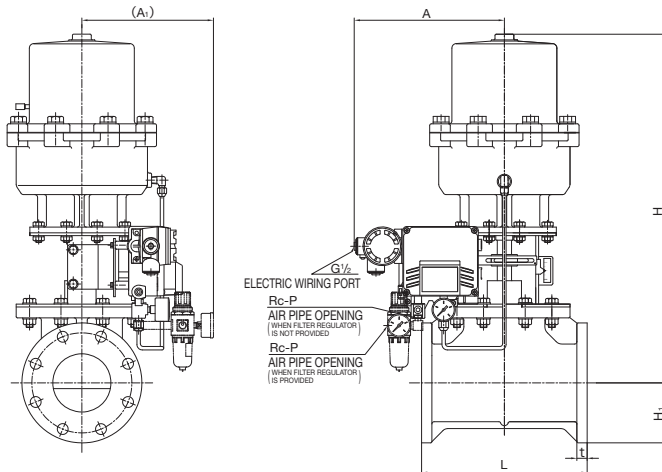
mm	D ₁	H	H ₁	A	A ₁	P	JIS10K	
							L	t
50	147	381	77.5	256	229	1/4	200	16
80	147	420	92	261	230	1/4	240	18
100	208	477	105	266	230	1/4	290	18

ANSI (UNIT: inch)

inch	mm	D ₁	H	H ₁	A	A ₁	P	ANSI CLASS150	
								L	t
2	50	5.79	15.00	3.05	10.08	9.02	1/4	7.87	0.63

TYPE AV

CONTROL VALVE TYPE—ACV CONNECTION / FLANGED—JIS, ANSI



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE	
	U-PVC BODY	
50mm (2inch)	AVU-3AO	
80mm (3inch)	AVU-4AO	
100mm (4inch)	AVU-5AO	

For detailed specifications, see **P.119**

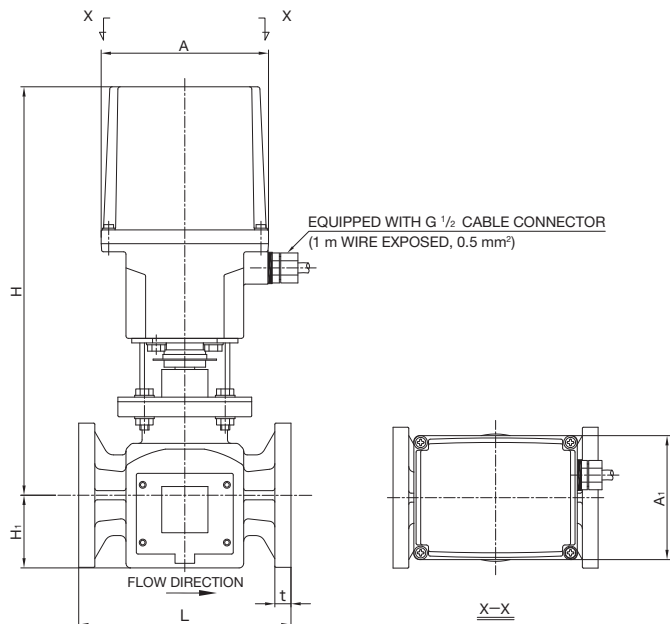
JIS (Unit: mm)

mm	H	H ₁	A	A ₁	P	JIS10K	
						L	t
50	469	77.5	256	229	1/4	200	16
80	562	92	261	230	1/4	240	18
100	611	105	266	230	1/4	290	18

ANSI (UNIT: inch)

inch	mm	H	H ₁	A	A ₁	P	ANSI CLASS150	
							L	t
2	50	18.46	3.05	10.08	9.02	1/4	7.87	0.63

TYPE M
 Single-Phase 100V
 Single-Phase 200V
 DC24V



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
15mm (1/2inch)	MSP6-□4
25mm (1inch)	MSP6-□6

For detailed specifications, see **p.129**

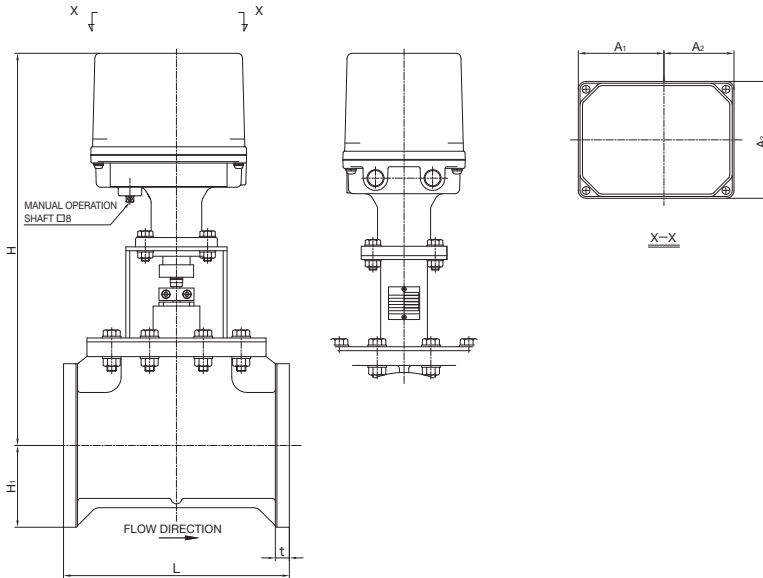
■ JIS (Unit: mm)

mm	H		H ₁		A	A ₁	JIS10K, DINPN10	
	U-PVC	PVDF	U-PVC	PVDF			L	t
15	335	372.5	51	49.5	145	110	160	12
25	354	366	63	66.5	145	110	184	14

■ ANSI (UNIT: inch)

inch	mm	H		H ₁		A	A ₁	ANSI CLASS150	
		U-PVC		U-PVC				L	t
1/2	15	13.19		2.01		5.71	4.33	6.30	0.47
1	25	13.94		2.48		5.71	4.33	7.24	0.55

TYPE M
 Single-Phase 100V
 Single-Phase 200V
 DC24V



ACTUATOR SELECTION CHART

SIZE	ACTUATOR TYPE
50mm (2inch)	PSN1
80mm (3inch)	PSN3
100mm (4inch)	PSN3

For detailed specifications, see **P.129**

■ JIS (Unit: mm)

							JIS10K	
mm	H	H ₁	A ₁	A ₂	A ₃	L	t	
50	433.5	77.5	101	81	140	200	16	
80	450.5	92	101	81	140	240	18	
100	503.5	105	110	90	160	290	18	

■ ANSI (UNIT: inch)

							ANSI CLASS150	
inch	mm	H	H ₁	A ₁	A ₂	A ₃	L	t
2	50	17.07	3.05	3.98	3.19	5.51	7.87	0.63



- LIGHTWEIGHT AND COMPACT SIZE DUE TO PLASTIC ACTUATOR
- AIR PIPING IS COMPATIBLE WITH NAMUR STANDARD.
- OPTIONS ARE EASILY REMOVABLE/REPLACEABLE AND CAN BE MOUNTED LATER (EXCEPT POSITIONER).
- EQUIPPED WITH STOPPER THAT CAN BE ADJUSTED AT FULL CLOSED POSITION.



DOUBLE ACTING	ACTUATOR TYPE				UNIT
	AN-1DA	AN-2DA	AN-3DA	AN-4DA	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	2.6	2.7	9.6	9.8	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4				

AIR TO OPEN	ACTUATOR TYPE				UNIT
	AN-1AO	AN-2AO	AN-3AO	AN-4AO	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	0.8		3.4		NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4				

AIR TO CLOSE	ACTUATOR TYPE				UNIT
	AN-1AS	AN-2AS	AN-3AS	AN-4AS	
OPERATING PRESSURE	0.4-0.6				MPa
AIR CONSUMPTION	1.8	1.9	6.1	6.3	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4				

OPTION COMBINATION

COMBINATION NO.	1 *4	2 *4	3	4 *4	5	6	7	8	9
SOLENOID VALVE *1	○	—	—	○	○	—	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	○	—	○
SPEED CONTROLLER *2	◎	○	—	◎	◎	○	◎	—	—
LIMIT SWITCH *3	—	—	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	○	○

*1 Equipped with a built-in speed controller and bypass valve.

*2 ◎ indicates solenoid valve-dedicated type.

*3 When using the limit switch at 1 to 100 mA or 5 to 30V, contact our sales office in your area.

*4 The "full opening adjustment" and "manual override (air to open only)" are available only for the combination No. 1, 2 and 4.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
POSITIONER	YTC	<ul style="list-style-type: none"> • E/P: INPUT SIGNAL CURRENT DC 4-20 mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
MANUAL OVERRIDE	ASAHI YUKIZAI	
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	

TYPE AV (MODEL: AV)



- EQUIPPED WITH STOPPER THAT CAN BE ADJUSTED AT FULL CLOSED POSITION.
- AIR PIPING IS COMPATIBLE WITH NAMUR STANDARD.

DOUBLE ACTING	ACTUATOR TYPE							UNIT
	AV-1DA	AV-2DA	AV-3DA	AV-4DA	AV-5DA	AV-6DA	AV-7DA	
OPERATING PRESSURE	0.4-0.6							MPa
AIR CONSUMPTION	10.3	11.9	20.7	36.6	67.3	87.3	214	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4				Rc3/8			

AIR TO OPEN	ACTUATOR TYPE					UNIT
	AV-1AO	AV-2AO	AV-3AO	AV-4AO	AV-5AO	
OPERATING PRESSURE	0.4-0.6					MPa
AIR CONSUMPTION	10.6	15.9	34.3	55.6	84.2	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4					

AIR TO CLOSE	ACTUATOR TYPE					UNIT
	AV-1AS	AV-2AS	AV-3AS	AV-4AS	AV-5AS	
OPERATING PRESSURE	0.4-0.6					MPa
AIR CONSUMPTION	9.4	11.7	26.5	38.4	60.5	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4					

OPTION COMBINATION

DIAPHRAGM VALVE TYPE 14 (65 mm - 100 mm)

COMBINATION NO.	1	2	3	4	5	6	7	8	9
SOLENOID VALVE *1	○	—	—	○	○	—	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	○	—	○
SPEED CONTROLLER	○	○	—	○	○	○	○	—	—
LIMIT SWITCH *2	—	—	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	○	○

DIAPHRAGM VALVE TYPE 15 / 72

COMBINATION NO.	1	2	3	4	5	6	7	8	9	10	11	12	13
SOLENOID VALVE *1	○	—	—	○	○	○	—	○	○	○	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	—	○	○	—	○	—	○
SPEED CONTROLLER	—	○	—	—	○	—	○	○	—	○	○	—	—
LIMIT SWITCH *2	—	—	○	—	—	○	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	—	—	—	—	—	○

*1 Equipped with a built-in speed controller and bypass valve.

*2 When using the limit switch at 1 to 100 mA or 5 to 30V, contact our sales office in your area.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V * 40-150 mm is compatible with NAMUR standard.
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
POSITIONER	YTC	<ul style="list-style-type: none"> • E/P: INPUT SIGNAL CURRENT DC 4-20 mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
MANUAL OVERRIDE	ASAHI YUKIZAI	
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	<ul style="list-style-type: none"> • POLYURETHANE PAINT



- OUR ORIGINAL SPECIAL PLUG SHAPE REDUCES EFFECTS OF FLUID VISCOSITY AND ALLOWS FOR HIGHLY ACCURATE FLOW CONTROL.

DOUBLE ACTING	ACTUATOR TYPE						UNIT
	U-PVC BODY	AVU-1DA	AVU-2DA	AVU-3DA	AVU-4DA	AVU-5DA	
	PVDF BODY	AVF-1DA	AVF-2DA	—	—	—	
OPERATING PRESSURE		0.4-0.7					MPa
AIR CONSUMPTION		0.6	0.7	2.1		6.3	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE		Rc1/4					

AIR TO OPEN	ACTUATOR TYPE						UNIT
	U-PVC BODY	AVU-1AO	AVU-2AO	AVU-3AO	AVU-4AO	AVU-5AO	
	PVDF BODY	AVF-1AO	AVF-2AO	—	—	—	
OPERATING PRESSURE		0.4-0.7					MPa
AIR CONSUMPTION		1.3	1.5	2.7	5.5	7.9	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE		Rc1/4					

OPTION COMBINATION

COMBINATION NO.	1	2
POSITIONER (E/P)	●	—
POSITIONER (P/P)	—	●
FILTER REGULATOR	○	○

● indicates that the feature is provided as standard.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
FILTER REGULATOR	KONAN	
POSITIONER	YTC	<ul style="list-style-type: none"> • E/P: INPUT SIGNAL CURRENT DC 4-20 mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	<ul style="list-style-type: none"> • POLYURETHANE PAINT

TYPE AI

- HAS SUFFICIENT DURABILITY TO WITHSTAND 500,000 CYCLES OF OPENING/CLOSING.
- CAN BE USED IN LIMITED PIPING SPACE.
- ALL-PLASTIC BODY ENSURES EXCELLENT CORROSION RESISTANCE.



DOUBLE ACTING	ACTUATOR TYPE					UNIT
	AI-1DA	AI-2DA	AI-3DA	AI-4DA	AI-5DA	
OPERATING PRESSURE	0.4-0.6					MPa
AIR CONSUMPTION	0.89		1.29	4.35	4.80	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4					

AIR TO OPEN (0.7MPa Spec)	ACTUATOR TYPE					UNIT
	AI-1AO	AI-2AO	AI-3AO	AI-4AO	AI-5AO	
OPERATING PRESSURE	0.4-0.6					MPa
AIR CONSUMPTION	0.35		0.49	1.73	1.98	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4					

AIR TO OPEN (1.0MPa Spec)	ACTUATOR TYPE					UNIT
	AI-1AO-P/E*	AI-2AO-P/E*	AI-3AO-P/E*	AI-4AO-P/E*	AI-5AO-P/E*	
OPERATING PRESSURE	0.5-0.6					MPa
AIR CONSUMPTION	0.42		0.59	2.08	2.37	NI/OPEN & CLOSE (0.5 MPa)
AIR SUPPLY BORE	Rc1/4					

E: NBR DIAPHRAGM E: EPDM DIAPHRAGM

AIR TO CLOSE	ACTUATOR TYPE					UNIT
	AI-1AS	AI-2AS	AI-3AS	AI-4AS	AI-5AS	
OPERATING PRESSURE	0.4-0.6					MPa
AIR CONSUMPTION	0.54		0.79	2.63	2.82	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4					

OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5	6	7	8	9
SOLENOID VALVE	○	—	—	○	○	—	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	○	—	○
SPEED CONTROLLER *1	◎	○	—	◎	◎	○	◎	—	—
LIMIT SWITCH *2	—	—	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	○	○

*1 ◎ indicates solenoid valve-dedicated type.

*2 When using the limit switch at 1 to 100 mA or 5 to 30V, contact our sales office in your area.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH BOX	Rotech	<ul style="list-style-type: none"> • WATER PROOF
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
POSITIONER	YTC	<ul style="list-style-type: none"> • E/P: INPUT SIGNAL CURRENT DC 4-20 mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
MANUAL OVERRIDE	ASAHI YUKIZAI	
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	



- COMPACT BODY ALLOWS FOR USE IN LIMITED PIPING SPACE.
- EXCELLENT OPEN/CLOSE DURABILITY TO WITHSTAND MORE THAN 1,000,000 CYCLES OF OPENING AND CLOSING
- ALL-PLASTIC BODY ENSURES EXCELLENT CORROSION RESISTANCE.

DOUBLE ACTING	SIZE					UNIT
	15mm(1/2inch)	20mm(3/4inch)	25mm(1 inch)	40mm(1 1/2inch)	50mm(2inch)	
OPERATING PRESSURE	0.3-0.4					MPa
AIR CONSUMPTION	0.14	0.32		1.24	2.19	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/8					

AIR TO OPEN	SIZE					UNIT
	15mm(1/2inch)	20mm(3/4inch)	25mm(1 inch)	40mm(1 1/2inch)	50mm(2inch)	
OPERATING PRESSURE	0.4-0.5					MPa
AIR CONSUMPTION	0.12	0.26		1.02	1.78	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/8					

OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5*	6*
SPEED CONTROLLER	—	○	—	○	—	○
FULL OPENING ADJUSTMENT	—	—	○	○	○	○
INDICATOR	●	●	—	—	◎	◎

● indicates that the feature is provided as standard.
 ◎ represents an indicator for full opening adjustment.
 * Only applicable to the sizes of 15 to 25 mm.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPEED CONTROLLER	KONAN	—
WITH FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	—
FULL OPENING ADJUSTMENT (WITH INDICATOR)	ASAHI YUKIZAI	—



- LIGHTWEIGHT AND COMPACT SIZE DUE TO PLASTIC ACTUATOR
- AIR PIPING IS COMPATIBLE WITH NAMUR STANDARD.
- ALL-PLASTIC BODY ENSURES EXCELLENT CORROSION RESISTANCE.



BASIC SPECIFICATION		ACTUATOR TYPE			UNIT
		AP-1	AP-2	AP-3	
		VALVE SIZE (mm)			
		65	80	100	
OPERATING PRESSURE	DOUBLE ACTING, AIR TO OPEN, AIR TO CLOSE	0.4-0.5			MPa
AIR CONSUMPTION	DOUBLE ACTING	22.1	23.7	30.4	N ℓ /OPEN& CLOSE (0.4MPa)
	AIR TO OPEN (0.6MPa)	7.4	7.7	10.6	
	AIR TO OPEN (1.0MPa)	7.4	9.3	15.1	
	AIR TO CLOSE	7.0	8.3	17.2	
AIR SUPPLY BORE	DOUBLE ACTING, AIR TO OPEN, AIR TO CLOSE	Rc 1/4			
ENVIRONMENT TEMPERATURE	DOUBLE ACTING, AIR TO OPEN, AIR TO CLOSE	-10-50			°C

ACTUATOR SELECTION CHART

SIZE	DOUBLE ACTING	ACTUATOR		
		AIR TO OPEN		AIR TO CLOSE
		0.6MPa	1.0MPa	
65mm (2 1/2inch)	AP-1DA	AP-1AO-06	AP-1AO-10	AP-1AS
80mm (3inch)	AP-2DA	AP-2AO-06	-	AP-2AS
	-	-	AP-2AO-10	-
100mm (4inch)	AP-3DA	AP-3AO-06	-	-
	-	-	AP-3AO-10	AP-3AS

OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5	6	7	8	9	10	11	12
SOLENOID VALVE	○				○	○		○				
FILTER REGULATOR					○			○				
SPEED CONTROLLER	◎	○		◎	◎	◎	○	◎		○		
LIMIT SWITCH BOX			○			○	○	○				
LIMIT SWITCH			○			○	○	○				
BYPASS VALVE (SPEED CONTROLLER)	◎			○	◎	◎		◎				
POSITIONER (E/P, P/P)									○	○		
MANUAL OVERRIDE											○	
FULL OPENING ADJUSTMENT												○
METAL INSERT PROVIDED (WITH ENSAT)	(M) STANDARD											

* ◎ equipped with ○

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	—
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
LIMIT SWITCH BOX	Rotech	<ul style="list-style-type: none"> • WATER PROOF
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
POSITIONER	YTC	<ul style="list-style-type: none"> • E/P: INPUT SIGNAL CURRENT DC4-20mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02-0.1MPa
MANUAL OVERRIDE	ASAHI YUKIZAI	—
FULL OPENING ADJUSTMENT	ASAHI YUKIZAI	—



- LIGHTWEIGHT AND COMPACT SIZE DUE TO PLASTIC ACTUATOR
- AIR PIPING IS COMPATIBLE WITH NAMUR STANDARD.
- PPG (BLACK), HIGHLY WEATHER RESISTANT PLASTIC, IS USED FOR THE MOUNTING BASE.

BASIC SPECIFICATIONS

DOUBLE ACTING	ACTUATOR TYPE		UNIT
	PPW	PP00	
ANGLE ADJUSTMENT	No angle adjustment is available.		
OPERATING PRESSURE	0.4-0.6		MPa
AIR CONSUMPTION	0.6	1.3	Nl/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4		

AIR TO OPEN AIR TO CLOSE	ACTUATOR TYPE		UNIT
	PP00S	PP10S	
ANGLE ADJUSTMENT	No angle adjustment is available.		
OPERATING PRESSURE	0.4-0.6		MPa
AIR CONSUMPTION	0.7	1.7	Nl/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/4		

OPTION COMBINATION

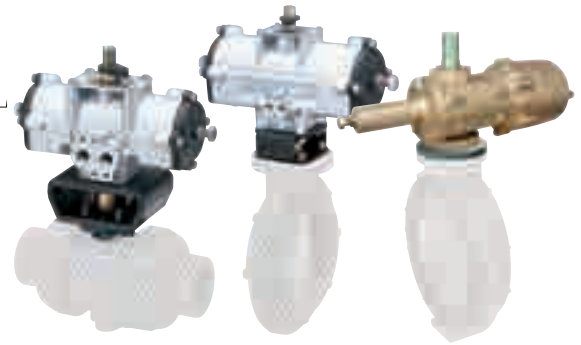
COMBINATION NO.	1	2	3	4	5	6	7
SOLENOID VALVE *1	○	—	—	○	○	—	○
FILTER REGULATOR	—	—	—	○	—	—	○
SPEED CONTROLLER *2	◎	○	—	◎	◎	○	◎
LIMIT SWITCH *3	—	—	○	—	○	○	○

*1 Equipped with a built-in speed controller and bypass valve.
 *2 ◎ indicates solenoid valve-dedicated type.
 *3 When using the limit switch at 1 to 100 mA or 5 to 30V, contact our sales office in your area.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH BOX	PRISMA	<ul style="list-style-type: none"> • WATER PROOF
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	<ul style="list-style-type: none"> • WATER PROOF, EXPLOSION PROOF • OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
SPECIAL FITTING	ASAHI YUKIZAI	<ul style="list-style-type: none"> • SUS304, U-PVC

TYPE TA, TYPE TW



- HORIZONTAL ACTUATOR CAN REDUCE PIPING SPACE.
- OPTIONS ARE EASILY REMOVABLE/REPLACEABLE AND CAN BE MOUNTED LATER (EXCEPT POSITIONER).
- AIR PIPING IS COMPATIBLE WITH NAMUR STANDARD.

BASIC SPECIFICATIONS

DOUBLE ACTING	ACTUATOR TYPE									UNIT
	TA2A-0402D	TA2A-050D	TA2A-063D	TA2A-080D	TA2A-100D	TA2A-125D	TA2A-160D	TA-200D	TW-250D	
ANGLE ADJUSTMENT	No angle adjustment is available. ±5°									
OPERATING PRESSURE	0.4-0.7									MPa
AIR CONSUMPTION	0.5	0.9	1.7	3.2	6.6	13.3	27.1	56.8	99	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE	Rc1/8	Rc1/4						Rc3/8		

AIR TO OPEN AIR TO CLOSE	ACTUATOR TYPE								UNIT	
	TA2A-0402R	TA2A-050R	TA2A-063R	TA2A-080R	TA2A-100R2	TA2A-125R2	TA2A-160R2	TA-200R		
ANGLE ADJUSTMENT	No angle adjustment is available. ±5°									
OPERATING PRESSURE	0.4-0.7								MPa	
AIR CONSUMPTION	0.8	1.7	3.3	6.1	12.8	21.6	42.7	68.4	NI/OPEN & CLOSE (0.4 MPa)	
AIR SUPPLY BORE	Rc1/4	Rc1/4						Rc3/8		

OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5	6	7	8	9
SOLENOID VALVE *1	○	—	—	○	○	—	○	—	—
FILTER REGULATOR	—	—	—	○	—	—	○	—	○
SPEED CONTROLLER *2	◎	○	—	◎	◎	○	◎	—	—
LIMIT SWITCH *3	—	—	○	—	○	○	○	—	—
POSITIONER (E/P, P/P)	—	—	—	—	—	—	—	○	○

- *1 Equipped with a built-in speed controller and bypass valve.
 *2 ◎ indicates solenoid valve-dedicated type.
 *3 When using the limit switch at 1 to 100 mA or 5 to 30V, contact our sales office in your area.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE NAMUR	KONAN	• WATER PROOF, EXPLOSION PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
FILTER REGULATOR	KONAN	
SPEED CONTROLLER	KONAN	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
BYPASS VALVE (SPEED CONTROLLER)	KONAN	
LIMIT SWITCH BOX	KONAN	• WATER PROOF
LIMIT SWITCH	AZBIL (formerly YAMATAKE)	• WATER PROOF - EXPLOSION PROOF - OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
PROXIMITY SWITCH	AZBIL (formerly YAMATAKE)	• OPEN: 1 pc, CLOSE: 1 pc, OPEN/CLOSE: 2 pcs
POSITIONER	YTC	• E/P: INPUT SIGNAL CURRENT DC 4-20 mA • P/P: INPUT SIGNAL AIR PRESSURE 0.02 - 0.1 MPa
MANUAL OPERATION LEVER	ASAHI YUKIZAI	
MANUAL OVERRIDE	KONAN	
FULL OPENING ADJUSTMENT (OPENING DEGREE ADJUSTING BOLT)	ASAHI YUKIZAI	
SPECIAL PAINTING (ACTUATOR ONLY)	KONAN	• EPOXY PAINT, POLYURETHANE PAINT
SPECIAL FITTING	ASAHI YUKIZAI	• SUS304



APPLICABLE TYPE
BALL VALVE



- LIGHTWEIGHT, COMPACT SIZE AND HIGH CORROSION RESISTANCE DUE TO PLASTIC ACTUATOR
- THE PRODUCT LINE ALLOWS FOR SELECTION ACCORDING TO THE FLUID TO BE USED. BALL VALVE TYPE 21 FOR CHEMICAL SOLUTION LINES AND WATER BALL VALVE FOR WATER/SEA WATER LINES CAN BE SELECTIVELY USED, WHICH ALSO CONTRIBUTES TO TOTAL COST REDUCTION.

BASIC SPECIFICATIONS

	ACTUATOR TYPE			UNIT
	PND-03S	PND-03D	PND-04D	
OPERATING PRESSURE		0.4-0.7		MPa
AIR CONSUMPTION	0.05	0.08	0.19	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE		Rc1/8		

AIR TO OPEN AIR TO CLOSE	ACTUATOR TYPE			UNIT
	PSO-03D	PSO-04D	PSO-04W	
OPERATING PRESSURE		0.4-0.7		MPa
AIR CONSUMPTION	0.04	0.10	0.17	NI/OPEN & CLOSE (0.4 MPa)
AIR SUPPLY BORE		Rc1/8		

OPTION COMBINATION

COMBINATION NO.	1	2	3	4	5
SOLENOID VALVE *1	○	—	—	○	—
SPEED CONTROLLER *2	◎	○	—	◎	○
LIMIT SWITCH *3	—	—	○	○	○

*1 Dedicated type for NVC model by SMC (with solenoid valve + silencer-equipped exhaust throttle valve dust-proof DIN connector)
 *2 ◎ indicates solenoid valve-dedicated type.
 *3 LS box by NVC (dedicated type)

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SOLENOID VALVE (EXHAUST THROTTLE VALVE WITH SILENCER)	SMC	<ul style="list-style-type: none"> • WATER PROOF • POWER SOURCE AC100V, AC110V, AC200V, AC220V, DC24V
SPEED CONTROLLER	SMC	* Since a solenoid valve has a built-in exhaust valve, when a solenoid valve is mounted, no speed controller is necessary.
LIMIT SWITCH BOX	NIPPON VALVE CONTROLS	<ul style="list-style-type: none"> • WATER PROOF

TYPE H

- EQUIPPED WITH FAILSAFE LIMIT SWITCH IN ADDITION TO STANDARD ON/OFF LIMIT SWITCH. OUTPUT CONTACT LIMIT SWITCH IS ALSO PROVIDED AS STANDARD.
- LARGE OPENING DISPLAY PROVIDES CLEAR INDICATION.
- EQUIPPED WITH MANUAL OVERRIDE FUNCTION THAT ALLOWS FOR MANUAL OPERATION BEFORE ENERGIZATION AND DURING POWER OUTAGE.



BASIC SPECIFICATIONS		ACTUATOR TYPE											UNIT
		ED-11H					ED-21H			ED-30H			
		VALVE SIZE (mm)											
		15	20	25	32	40	50	65	80	100	125	150	
CYCLE TIME	50Hz	20		24		43	51	38	47	56		48	s
	60Hz	16		20		36	43	32	39	47		40	
PROTECTIVE STRUCTURE		JIS C0920 WATER PROOF											
MOTOR STARTING CURRENT	AC100V	0.69/0.7					2.3/2.2			5.0/4.8			A
	AC200V	0.3/0.3					1.15/1.1			2.5/2.4			
MOTOR RATED CURRENT	AC100V	0.5/0.5					1.5/1.8			3.0/3.0			A
	AC200V	0.25/0.25					0.8/0.8			1.5/1.5			
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		21		25		44	52	76	94	112		128	
POWER CONSUMPTION	AC100V	47.5					142.5			285			W
	AC200V	47.5					143			285			
CABLE CONNECTOR SIZE		2-G3/4								4-G3/4			
MOTOR RATED OUTPUT		20					60			140			W
MOTOR INSULATION TYPE		E CLASS											
MOTOR RATED TIME		30											min
LIMIT SWITCH CAPACITY		AC250V 10A											
SPACE HEATER OUTPUT		10W(100V: 1kΩ, 200V: 4kΩ)								1kΩ 10W			
POTENTIOMETER MAX. APPLIED VOLTAGE		8											V

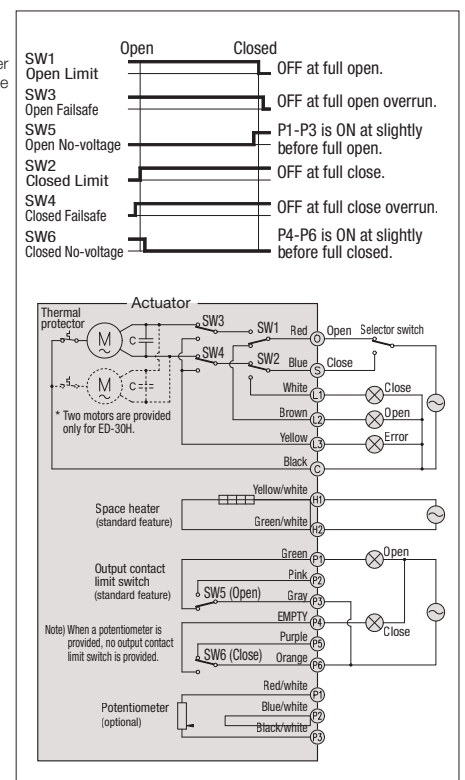
OPTION COMBINATION

COMBINATION NO.	1
SPACE HEATER	●
OUTPUT CONTACT LIMIT SWITCH	●

● indicates that the feature is provided as standard.
 * For the specifications of positioner and potentiometer (optional), contact us. When a potentiometer is provided, the output contact limit switch is not provided.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	SHINWA CONTROLS	• STANDARD EQUIPMENT
OUTPUT CONTACT LIMIT SWITCH	AZBIL	• INCLUDED AS STANDARD.
POTENTIOMETER	SHINWA CONTROLS	• RESISTANCE: 500Ω, 1000Ω, 2000Ω, 5000Ω, 10000Ω Note) When a potentiometer is provided, the output contact limit switch is not provided.
MANUAL OVERRIDE	SHINWA CONTROLS	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	• EPOXY PAINT, POLYURETHANE PAINT



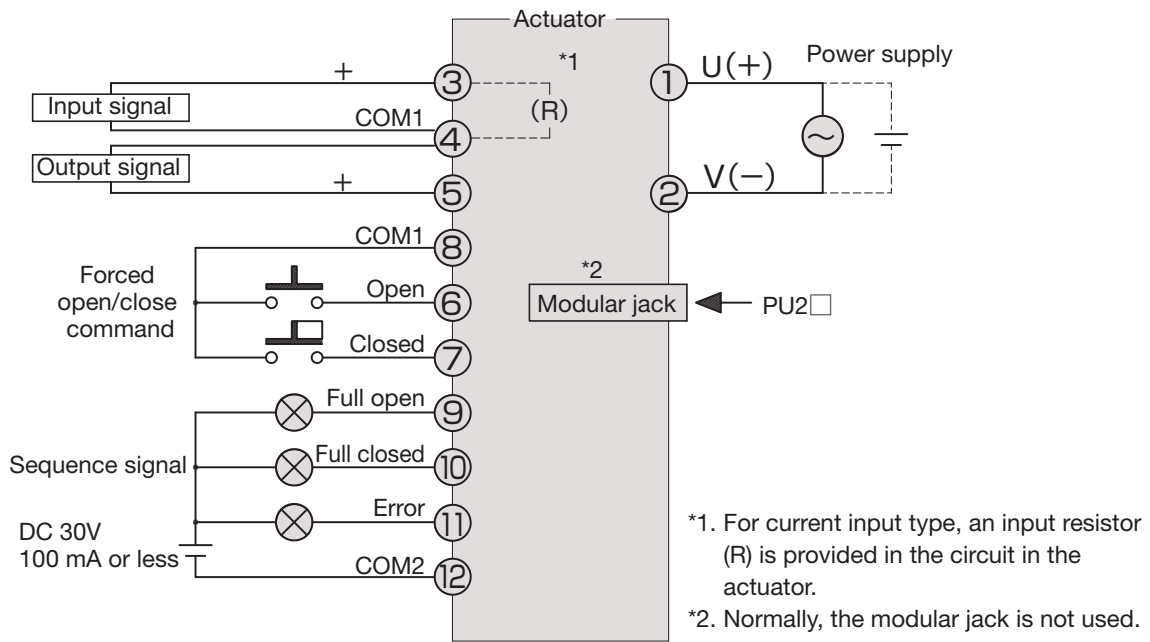


- IDEAL FOR CONTROL.

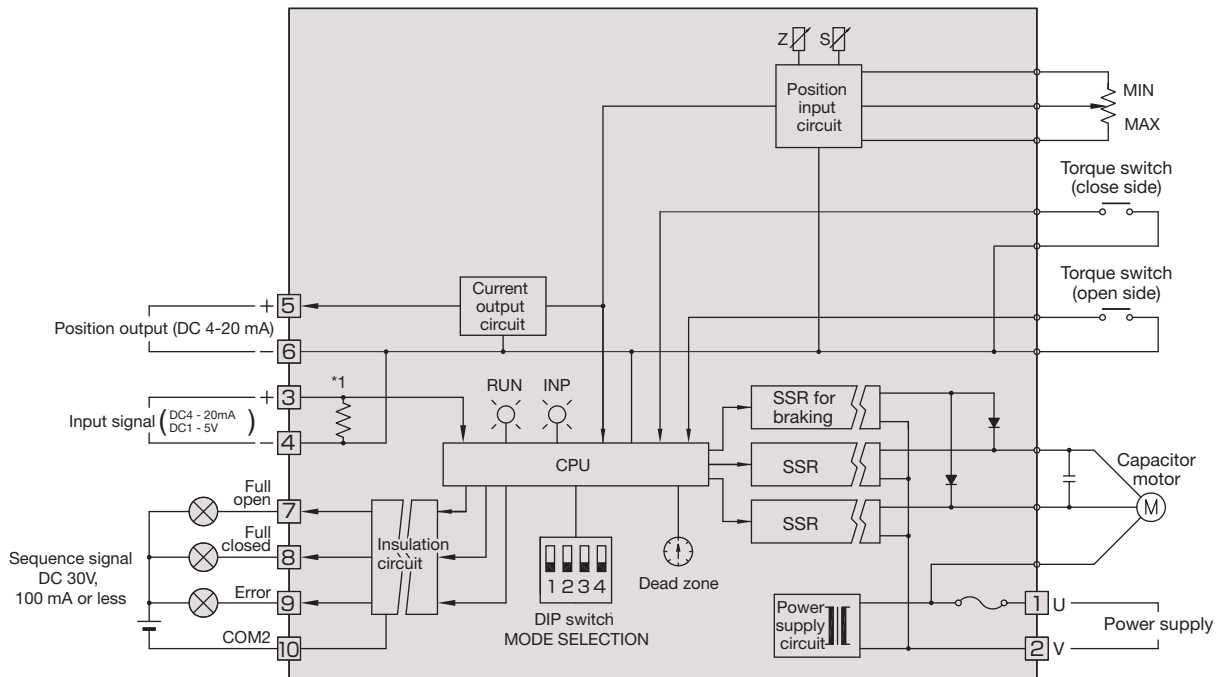
BASIC SPECIFICATIONS		ACTUATOR TYPE									UNIT
		PSN1			PSN3		CSP471	CSP771			
		VALVE SIZE (mm)									
		15	20	25	32	40	50	65	80	100	
CYCLE TIME	50Hz	7		9		21	25	58	72	85	s
	60Hz	7		9		21	25	49	61	73	
PROTECTIVE STRUCTURE		IP55									
MOTOR CURRENT		3.0									A/PHASE
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		24		30		50	60	40	50	60	
CABLE CONNECTOR SIZE		2-G1/2									
MOTOR INSULATION TYPE		E CLASS									

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
E-E POSITIONER	MSYSTEM	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	• EPOXY PAINT, POLYURETHANE PAINT

15mm - 50mm



65mm - 100mm



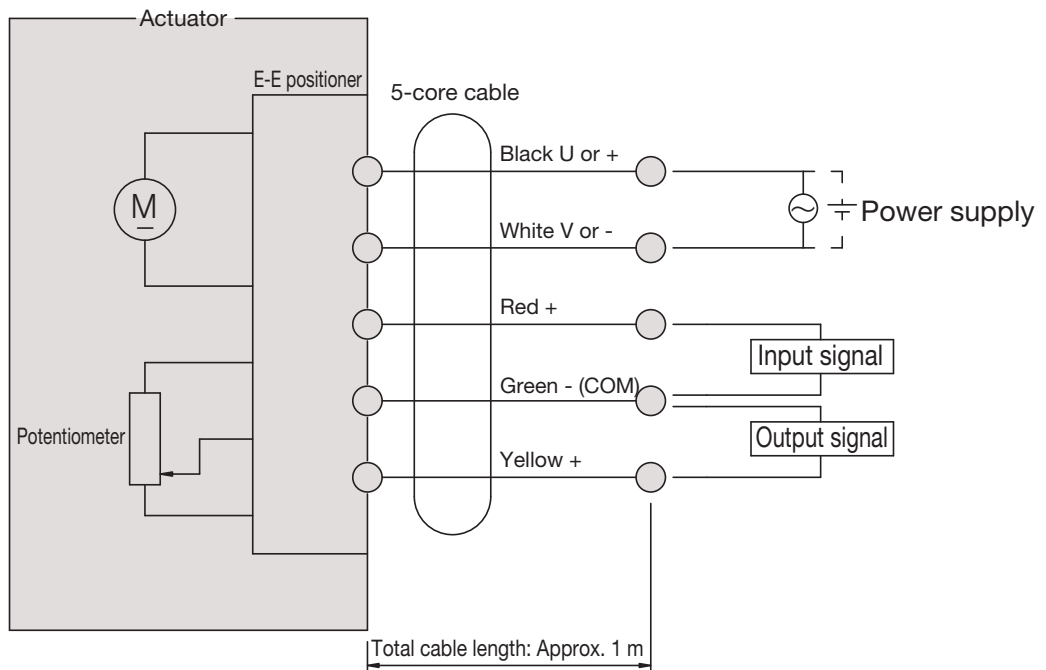


- OUR ORIGINAL SPECIAL PLUG SHAPE REDUCES THE EFFECTS OF FLUID VISCOSITY AND ALLOWS FOR ACCURATE FLOW CONTROL.
- USES HIGH-PERFORMANCE ALL ELECTRONIC SERVO ACTUATOR
- EQUIPPED WITH ELECTRONIC LIMITER FOR FULL CLOSED AND FULL OPEN POSITIONS AND OVERLOAD PROTECTION CIRCUIT.

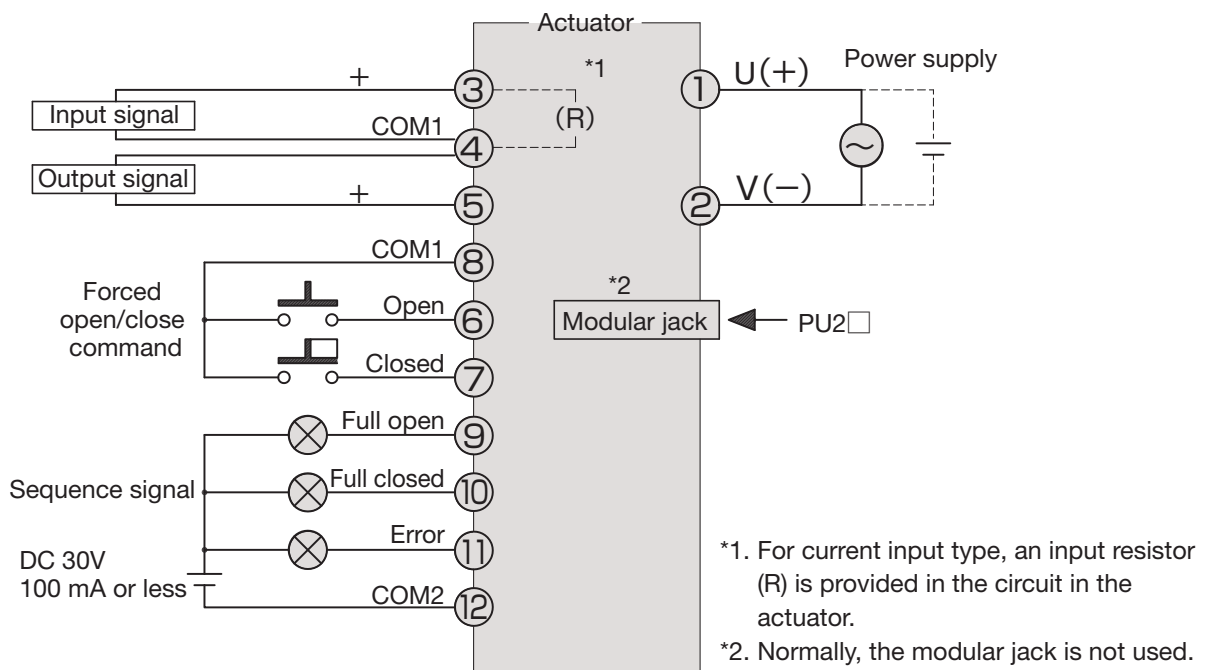
BASIC SPECIFICATIONS	ACTUATOR TYPE					UNIT
	MSP6-□4	MSP6-□6	PSN1		PSN3	
	VALVE SIZE (mm)					
	15	25	50	80	100	
CYCLE TIME	10-35		18-21	20-22	28-32	s
PROTECTIVE STRUCTURE	IP55					
POWER CONSUMPTION (CONSUMPTION CURRENT)	AC100V-120V	Approx. 25VA		Approx. 240VA		
	AC200V-240V	Approx. 25VA		Approx. 240VA		
	DC24V±10%	Approx. 0.6VA		Approx. 3A		
VIBRATION	0.5G OR LESS		2G OR LESS			
CABLE CONNECTOR SIZE	G1/2		2-G1/2			
MOTOR INSULATION TYPE	E CLASS					
MOTOR RATED TIME	CONTINUOUS					min

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
E-E POSITIONER	MSYSTEM	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	• EPOXY PAINT, POLYURETHANE PAINT

15mm - 25mm



50mm - 100mm





- EQUIPPED WITH TORQUE SWITCH AS STANDARD TO PREVENT VALVE DAMAGE DUE TO OVERLOAD.
- AUTOMATIC RETURN MECHANISM ELIMINATES CLUTCH OPERATION AFTER MANUAL OPERATION.

BASIC SPECIFICATIONS		ACTUATOR TYPE				UNIT
		LTRM-01 LTRH-01	LTMD-01 LTKD-01	LTMD-02 LTKD-02		
		VALVLE SIZE (mm)				
		125	150	200	250	
CYCLE TIME	50Hz	29	54	75.5	90	s
	60Hz	24	46.5	63	75	
PROTECTIVE STRUCTURE		IP55				
MOTOR STARTING CURRENT 50/60Hz	AC200V	8.8/8.3	8.0/7.4	15.6/15.2		A
	AC400V	4.4/4.1	4.0/3.7	7.8/7.6		
MOTOR RATED CURRENT 50/60Hz	AC200V	3.0/2.4	2.5/2.2	4.4/4.0		A
	AC400V	1.5/1.2	1.3/1.1	2.2/2.0		
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		10		16	18	
POWER CONSUMPTION 50/60Hz	AC200V	397/361	650/610	—	—	W
	AC400V	397/361	650/610	—	—	
CABLE CONNECTOR SIZE		2-G1 OPERATION CIRCUIT: 2-G1, MOTOR CIRCUIT: G3/4				
MOTOR RATED OUTPUT		400			750	W
MOTOR INSULATION TYPE		E CLASS				
MOTOR RATED TIME		15				min
LIMIT SWITCH CAPACITY		AC250V 5A				
MOTOR POLE		4				P
SPACE HEATER RATED OUTPUT		10				W
POTENTIOMETER MAX. APPLIED VOLTAGE	100Ω	15				V
	200Ω	20				
	500Ω	30				
	1kΩ	45				

OPTION COMBINATION

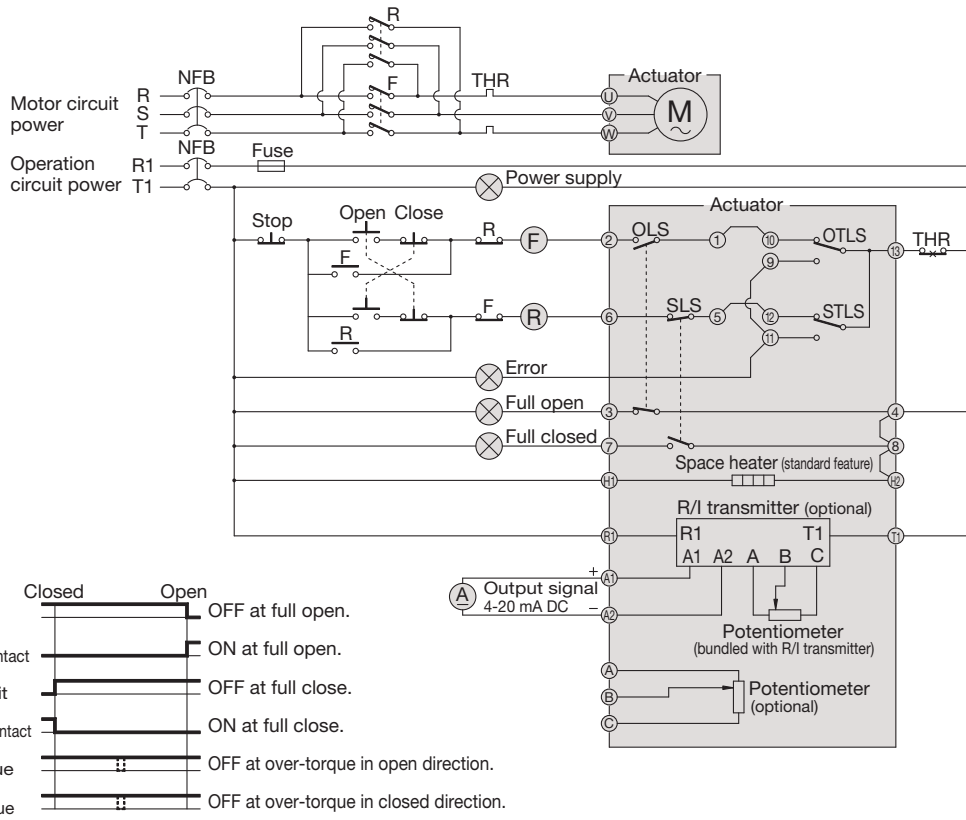
COMBINATION NO.	1	2	3	4
SPACE HEATER	●	●	●	●
OUTPUT CONTACT LIMIT SWITCH	○	—	—	—
POTENTIOMETER	○	—	—	—
R/I TRANSMITTER	—	—	○	○
E-E POSITIONER*	—	—	—	○

● indicates that the feature is provided as standard.
* The actuator type is different.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	TAMAOHM	• INCLUDED AS STANDARD.
OUTPUT CONTACT LIMIT SWITCH	SEIBU ELECTRIC& MACHINERY	
POTENTIOMETER	MIDORI PRECISIONS	• RESISTANCE: 100Ω, 200Ω, 500Ω, 1000Ω
R/I TRANSMITTER	SEIBU ELECTRIC& MACHINERY	
E-E POSITIONER	SEIBU ELECTRIC& MACHINERY	
MANUAL OVERRIDE	SEIBU ELECTRIC& MACHINERY	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	SEIBU ELECTRIC& MACHINERY	• POLYURETHANE PAINT

125mm - 250mm





- EASY EXTERNAL WIRING (TERMINAL BOX WIRING PORT 3-G1)
- EXCELLENT WATERPROOF PERFORMANCE (IP68)
- EQUIPPED WITH MANUAL HANDLE AS STANDARD (SWITCH LEVER TYPE AUTOMATIC RETURN MECHANISM)
- EQUIPPED WITH TORQUE SWITCH AS STANDARD TO PREVENT VALVE DAMAGE DUE TO OVERLOAD.

BASIC SPECIFICATIONS		ACTUATOR TYPE			UNIT
		SRJ-010	SRJ-020	SRJ-060	
CYCLE TIME	50Hz	18		36	s
	60Hz	15		30	
PROTECTIVE STRUCTURE		IP68			
MOTOR STARTING CURRENT 50/60Hz	AC200V	1.27/1.19		1.89/1.77	A
	AC400V	0.63/0.58		0.94/0.90	
MOTOR RATED CURRENT 50/60Hz	AC200V	0.53/0.45		0.74/0.67	A
	AC400V	0.26/0.22		0.37/0.34	
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		21		26	
POWER CONSUMPTION 50/60Hz	AC200V	82.7/76.0		162/156	W
	AC400V	84.7/78.8		163/159	
CABLE CONNECTOR SIZE		G1			
MOTOR RATED OUTPUT		40		100	W
MOTOR INSULATION TYPE		B CLASS			
MOTOR RATED TIME		15			min
LIMIT SWITCH CAPACITY		AC250V 2A			
MOTOR POLE		4			P
SPACE HEATER RATED OUTPUT		8			W
POTENTIOMETER	135Ω	7.3		V	
MAX. APPLIED VOLTAGE	200Ω	12.6			
	500Ω	14			

OPTION COMBINATION

COMBINATION NO.	1	2	3
SPACE HEATER	●	●	●
OUTPUT CONTACT LIMIT SWITCH	●	●	●
POTENTIOMETER	○	○	○
R/I TRANSMITTER	—	○	○
E-E POSITIONER	—	—	○

● indicates that the feature is provided as standard.

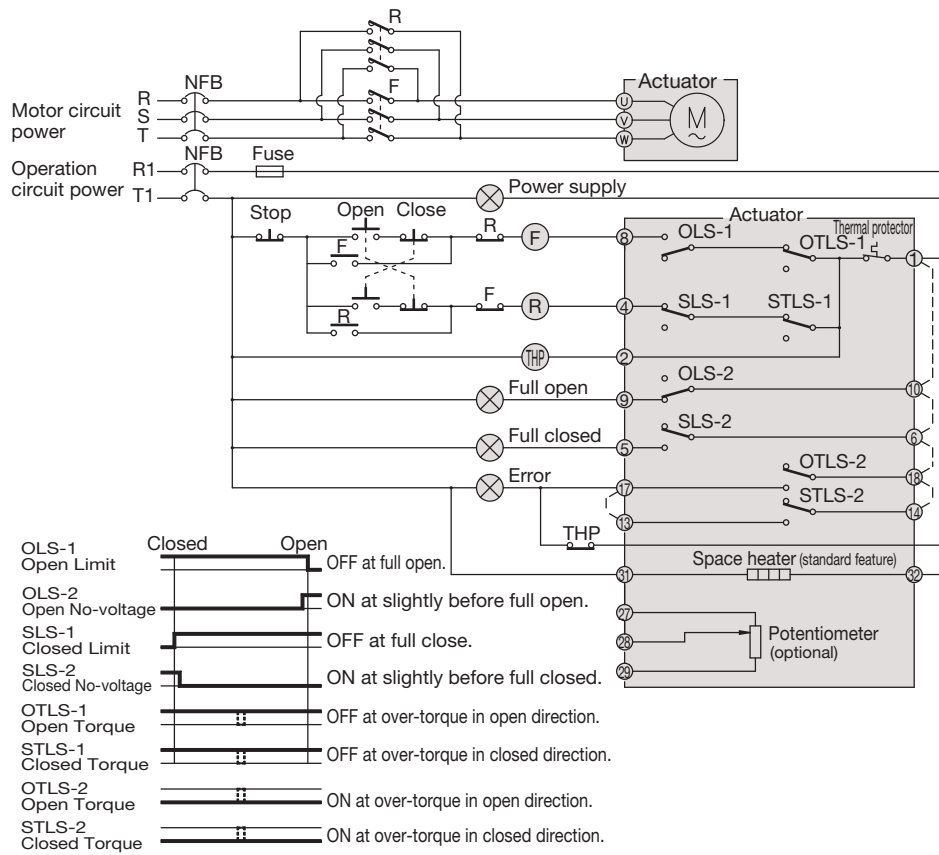
	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	KURABE INDUSTRIAL	• INCLUDED AS STANDARD.
OUTPUT CONTACT LIMIT SWITCH	SEIBU ELECTRIC& MACHINERY	• INCLUDED AS STANDARD.
POTENTIOMETER	MIDORI PRECISIONS	• RESISTANCE: 133Ω, 200Ω, 500Ω, 1000Ω
R/I TRANSMITTER	SEIBU ELECTRIC& MACHINERY	
E-E POSITIONER	SEIBU ELECTRIC& MACHINERY	• STANDARD TYPE, HIGH RESOLUTION TYPE * When an E-E positioner is provided, the operating power supply is single phase (AC 100V, AC 200V).
MANUAL OVERRIDE	SEIBU ELECTRIC& MACHINERY	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	SEIBU ELECTRIC& MACHINERY	• POLYURETHANE PAINT

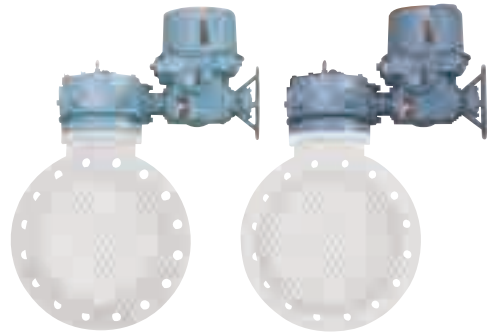
BUTTERFLY VALVE

40mm - 250mm

ROTARY DAMPER

40mm - 600mm





- EQUIPPED WITH TORQUE SWITCH AS STANDARD TO PREVENT VALVE DAMAGE DUE TO OVERLOAD.
- AUTOMATIC RETURN MECHANISM ELIMINATES CLUTCH OPERATION AFTER MANUAL OPERATION.
- THE STOPPER ALLOWS FOR ANGLE ADJUSTMENT OF ±5° AT FULL OPEN/CLOSED POSITIONS.

BASIC SPECIFICATIONS		ACTUATOR TYPE						UNIT		
		LTRM-01/BRM-1 LTRH-01/BRM-1		LTRM-01/BRM-2 LTRH-01/BRM-2		LTMD-01/BRM-3 LTKD-01/BRM-3				
		VALVE SIZE (mm)								
		300	350	400~600		400	450	500	600	
		BODY MATERIAL								
		U-PVC,PP,PVDF		PP,PVDF		PDCPD				
CYCLE TIME	50Hz	43		41		38		49		s
	60Hz	36		34		41		50		
PROTECTIVE STRUCTURE		IP55								
MOTOR STARTING CURRENT 50/60Hz	AC200V	7.60/7.00				10.2/9.6				A
	AC400V	4.10/3.80				4.6/4.4				
MOTOR RATED CURRENT 50/60Hz	AC200V	1.8/1.4				2.5/2.2				A
	AC400V	0.91/0.75				1.2/0.99				
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		15								
POWER CONSUMPTION 50/60Hz	AC200V	240/215		620/593		620/593				W
	AC400V	229/220		625/556		620/593				
CABLE CONNECTOR SIZE		OPERATION CIRCUIT: 3-G1, MOTOR CIRCUIT: 1-G3/4			OPERATION CIRCUIT: 2-G1, MOTOR CIRCUIT: 1-G3/4					
MOTOR RATED OUTPUT		200			400					W
MOTOR INSULATION TYPE		B CLASS								
MOTOR RATED TIME		15						min		
LIMIT SWITCH CAPACITY		AC250V 5A								
MOTOR POLE		4						P		
SPACE HEATER RATED OUTPUT		10			30					W
POTENTIOMETER MAX. APPLIED VOLTAGE	135Ω	15						V		
	200Ω	20								
	500Ω	30								
	1kΩ	45								

OPTION COMBINATION

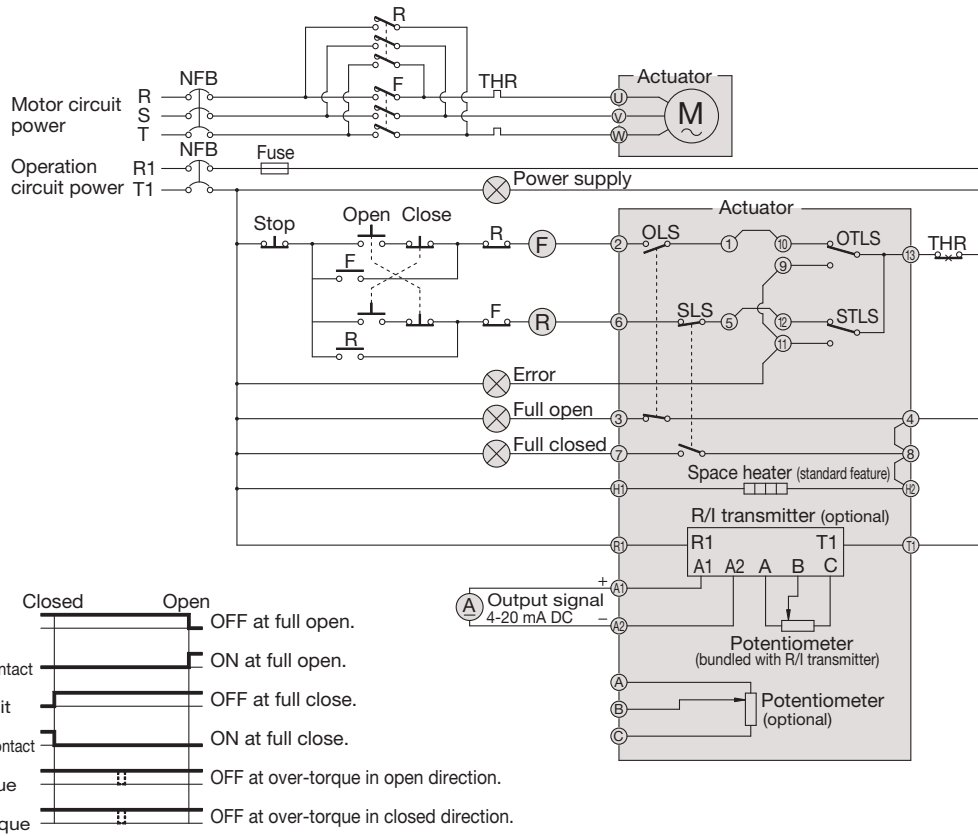
COMBINATION NO.	1	2	3	4
SPACE HEATER	●	●	●	●
OUTPUT CONTACT LIMIT SWITCH	○	—	—	—
POTENTIOMETER	—	○	○	○
R/I TRANSMITTER	—	—	○	○
E-E POSITIONER*	—	—	—	○

● indicates that the feature is provided as standard.
* The actuator type is different.

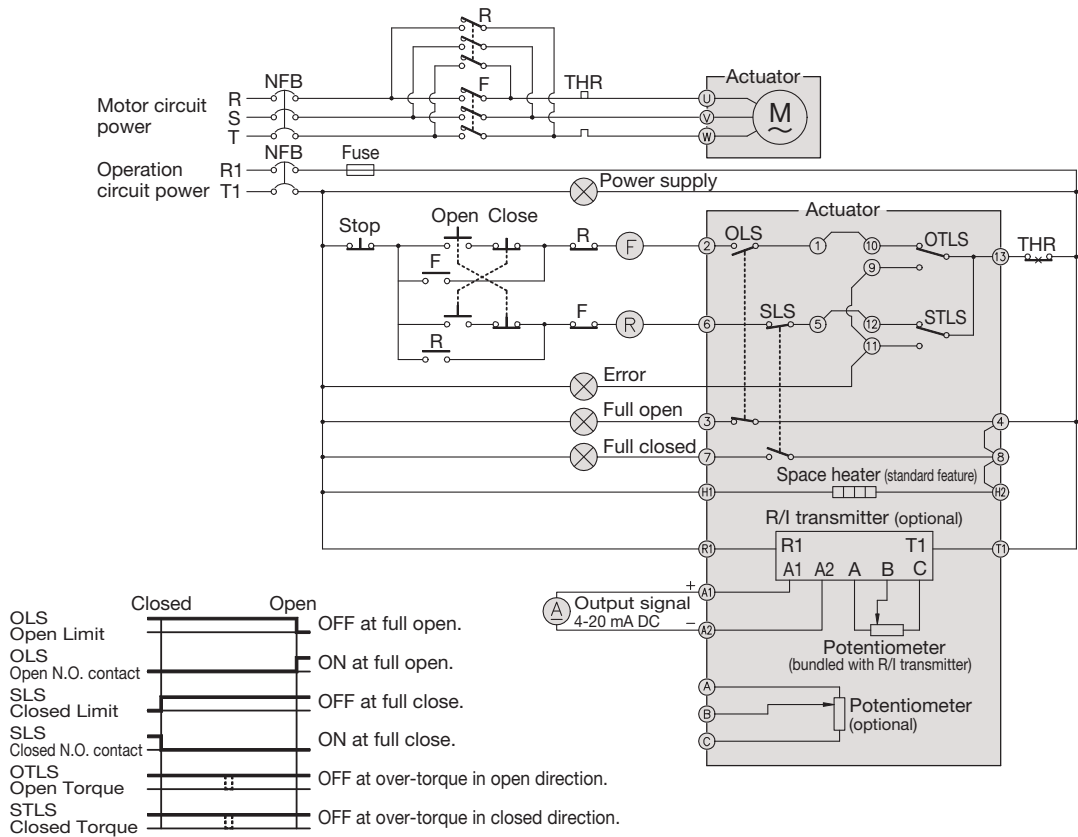
OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	TAMAOHM	• INCLUDED AS STANDARD.
OUTPUT CONTACT LIMIT SWITCH	SEIBU ELECTRIC& MACHINERY	
POTENTIOMETER	MIDORI PRECISIONS	• RESISTANCE: 100Ω, 200Ω, 500Ω, 1000Ω
R/I TRANSMITTER	SEIBU ELECTRIC& MACHINERY	
E-E POSITIONER	SEIBU ELECTRIC& MACHINERY	
MANUAL OVERRIDE	SEIBU ELECTRIC& MACHINERY	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	SEIBU ELECTRIC& MACHINERY	• POLYURETHANE PAINT

300mm - 400mm



450mm - 600mm





- MUCH LIGHTER WEIGHT SINCE THE SPECIFIC WEIGHT OF PDCPD IS 1/7 OF THAT OF CAST IRON.
- EXCELLENT WATERTIGHTNESS DUE TO SYNTHETIC RUBBER SEAT PACKING
- EQUIPPED WITH TORQUE SWITCH AS STANDARD TO PREVENT VALVE DAMAGE DUE TO OVERLOAD.
- AUTOMATIC RETURN MECHANISM ELIMINATES CLUTCH OPERATION AFTER MANUAL OPERATION.
- THE STOPPER ALLOWS FOR ANGLE ADJUSTMENT OF $\pm 5^\circ$ AT FULL OPEN/ CLOSED POSITIONS.

BASIC SPECIFICATIONS		ACTUATOR TYPE *1						UNIT
		LTMD-02/BRM10	LTMD-05/BRM10		LTMD-05/BRM-18	LTMD-1/BRM-18		
CYCLE TIME	50Hz	75	68	43	50	50	68	s
	60Hz	63	76	51	49	57	69	
PROTECTIVE STRUCTURE		IP55						
MOTOR STARTING CURRENT 50/60Hz	AC200V	18.9/17.3		38.0/35.0		57.8/51.7		A
	AC400V	9.0/8.4		19.0/17.5		28.9/25.9		
MOTOR RATED CURRENT 50/60Hz	AC200V	3.9/3.5		7.7/6.0		11/9.8		A
	AC400V	1.9/1.8		3.9/3.5		5.3/4.8		
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE		15	333			615		
INSULATION RESISTANCE		100MΩ						
AMBIENT TEMPERATURE		-25~50						°C
CABLE CONNECTOR SIZE		OPERATION CIRCUIT: 2-G1, MOTOR CIRCUIT: 1-G3/4						
MOTOR RATED OUTPUT		0.75		1.5		2.2		W
MOTOR INSULATION TYPE		B CLASS						
MOTOR RATED TIME		15						min
LIMIT SWITCH CAPACITY		AC250V 5A						
MOTOR POLE		4						P
SPACE HEATER RATED OUTPUT		30						W

*1 When an E-E positioner is provided, "Z" is added at the end of the model designation. (Example: LTMD-02Z/BRM-10)

OPTION COMBINATION

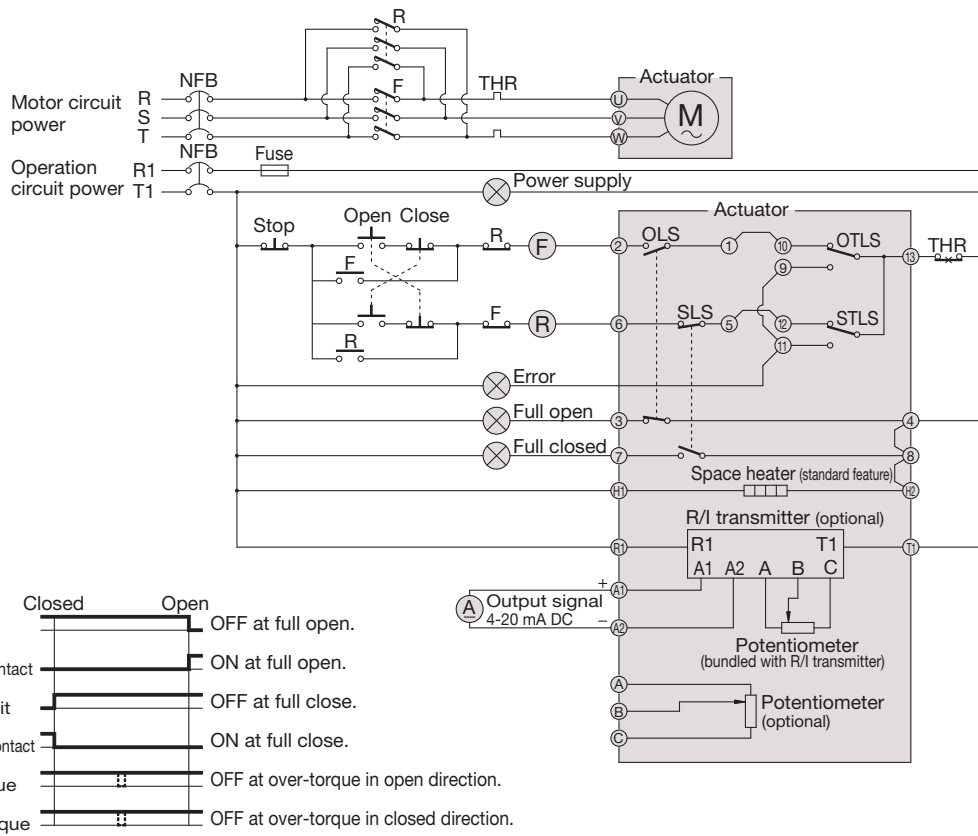
COMBINATION NO.	1	2	3	4
SPACE HEATER	●	●	●	●
OUTPUT CONTACT LIMIT SWITCH	○	—	—	—
POTENTIOMETER	—	○	○	○
R/I TRANSMITTER	—	—	○	○
E-E POSITIONER*	—	—	—	○

● indicates that the feature is provided as standard.
* The actuator type is different.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	TAMAOHM	• INCLUDED AS STANDARD.
OUTPUT CONTACT LIMIT SWITCH	SEIBU ELECTRIC& MACHINERY	
POTENTIOMETER	MIDORI PRECISIONS	• RESISTANCE: 100Ω, 200Ω, 500Ω, 1000Ω
R/I TRANSMITTER	SEIBU ELECTRIC& MACHINERY	
E-E POSITIONER	SEIBU ELECTRIC& MACHINERY	
MANUAL OVERRIDE	SEIBU ELECTRIC& MACHINERY	• INCLUDED AS STANDARD.
SPECIAL PAINTING (ACTUATOR ONLY)	SEIBU ELECTRIC& MACHINERY	• POLYURETHANE PAINT

700mm - 1,200mm



TYPE T

- LIGHT WEIGHT, COMPACT SIZE AND HIGH OUTPUT POWER
- THE PROTECTIVE STRUCTURE OF ACTUATOR IS EQUIVALENT TO IP65.
- MANUAL OVERRIDE FUNCTION ALLOWS FOR OPERATION WITH ALLEN WRENCH (5 mm).
- EASY-TO-UNDERSTAND OPENING DISPLAY



BASIC SPECIFICATIONS		ACTUATOR TYPE						UNIT	
		T-00	T-0	T-1	T-2	T-2.5	T-3		
CYCLE TIME	50Hz	10		25		37	55	s	
	60Hz	8		20		30	50		
PROTECTIVE STRUCTURE		PROTECTION RATING 5 JETPROOF TYPE							
MOTOR STARTING CURRENT 50/60Hz	AC100V	100V ^{*1}	0.80/0.80	1.20/1.20	1.6/1.4	2.4/2.4	5.1/4.8	A	
	AC110V		1.00/1.00	1.40/1.40	1.7/1.7	2.5/2.5	6.1/6.6		
	AC200V	200V ^{*1}	0.50/0.50	0.50/0.50	0.7/0.7	1.1/1.1	2.6/2.4		
	AC220V		0.70/0.70	0.70/0.70	0.8/0.9	1.2/1.2	3.1/3.0		
	AC220V		220V ^{*1}	—	—	0.7/0.7	1.1/1.0		2.3/2.3
	AC240V		240V ^{*1}	—	—	0.6/0.6	0.9/0.9		2.1/2.2
MOTOR RATED CURRENT 50/60Hz	AC100V	100V ^{*1}	0.40/0.40	0.50/0.50	0.7/0.6	0.9/1.2	1.6/1.7	A	
	AC110V		0.50/0.50	0.60/0.60	0.9/0.7	1.0/1.2	1.7/1.8		
	AC200V	200V ^{*1}	0.25/0.25	0.25/0.25	0.4/0.3	0.5/0.8	0.8/1.0		
	AC220V		0.30/0.30	0.30/0.30	0.5/0.4	0.6/0.8	0.9/1.0		
	AC220V		220V ^{*1}	—	—	0.4/0.3	0.5/0.5		0.7/0.8
	AC240V		240V ^{*1}	—	0.25/0.25	0.3/0.3	0.5/0.6		0.6/0.6
NUMBER OF REVOLUTIONS OF MANUAL OPERATING HANDLE (0 - 90 DEG)		7.5	6.7	16.5					
CABLE CONNECTOR SIZE		G1/2		G1/2 (PF1/2) 2 PLACES					
MOTOR RATED OUTPUT		8		20	30	90	W		
MOTOR INSULATION TYPE		E CLASS							
MOTOR RATED TIME		30						min	
LIMIT SWITCH CAPACITY ^{*2}		AC250V 5A		AC250V 10A					
SPACE HEATER RATED OUTPUT		2 ^{*3}		8			W		
AMBIENT TEMPERATURE		-10~50°C						°C	

*1. Motor power source. *2. If the value is equal to or lower than the contact capacity of limit switch (1 mA - 100 mA, 5 - 30V), contact our sales office in your area.
 *3. The space heater for T-00 is optional.

OPTION COMBINATION

T-00

COMBINATION NO.	1	2	3
SPACE HEATER	○	—	○
MANUAL HANDLE	—	○	○

T-0, T-1, T-2, T-2.5, T-3

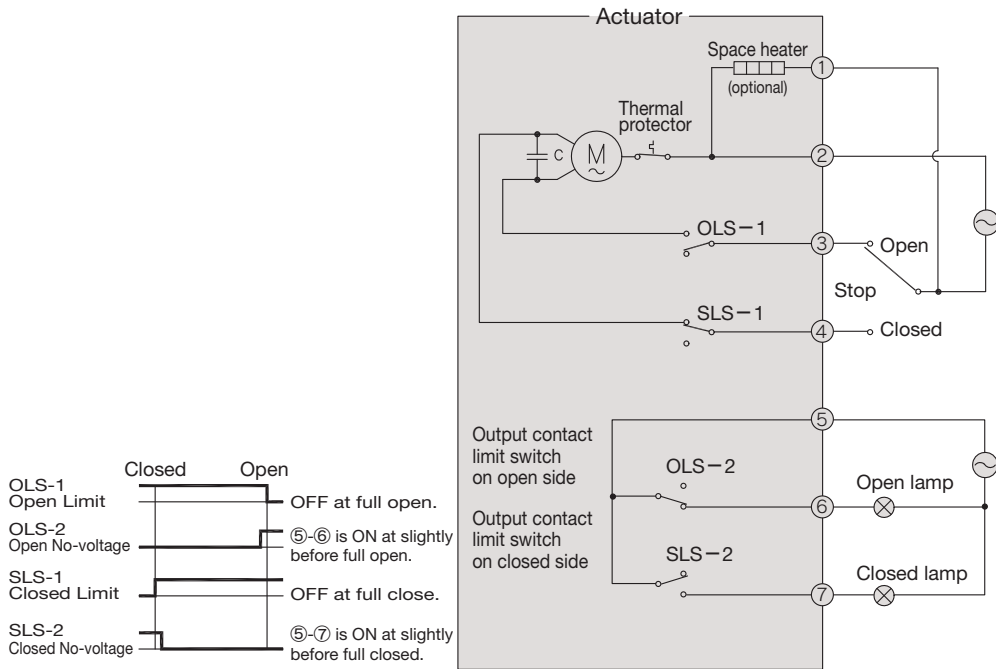
COMBINATION NO.	1	2	3	4	5	6	7
SPACE HEATER	●	●	○	●	○	●	○
OUTPUT CONTACT LIMIT SWITCH	●	●	●	—	●	—	●
POTENTIOMETER	—	○	—	—	—	○	○
E-E POSITIONER	—	—	○	—	—	—	—
INTERMEDIATE OUTPUT CONTACT LIMIT SWITCH	—	—	—	○	—	○	—
SPEED CONTROLLER	—	—	—	—	○	—	○

● indicates that the feature is provided as standard.

OPTION LIST

OPTION LIST	MANUFACTURER	BASIC SPECIFICATIONS
SPACE HEATER	TOMOE VALVE	• PROVIDED AS STANDARD FOR T-0 OR ABOVE.
OUTPUT CONTACT LIMIT SWITCH	PANASONIC OMRON	• INCLUDED AS STANDARD. (T-00: PANASONIC, T-0-3: OMRON)
POTENTIOMETER	TOMOE VALVE	• RESISTANCE: 135Ω, 500Ω
E-E POSITIONER	TOMOE VALVE	
INTERMEDIATE OUTPUT CONTACT LIMIT SWITCH	PANASONIC OMRON	T-00: PANASONIC, T-0-3: OMRON
SPEED CONTROLLER	TOMOE VALVE	
MANUAL OVERRIDE	TOMOE VALVE	• INCLUDED AS STANDARD (T-00, T-0: MANUAL OPERATION SHAFT/ HEXAGONAL WRENCH, T-1-3: MANUAL OPERATING WHEEL)
SPECIAL PAINTING (ACTUATOR ONLY)	ASAHI YUKIZAI	• POLYURETHANE PAINT
SPECIAL FITTING	ASAHI YUKIZAI	• SUS304

BALL VALVE TYPE 21, 21α 15mm - 50mm

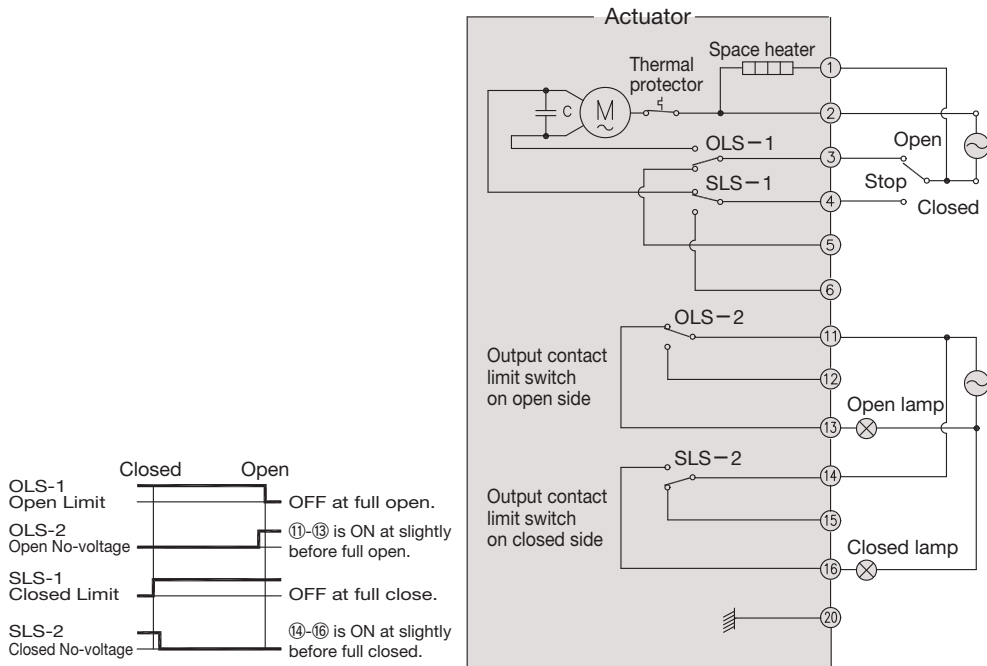


BALL VALVE TYPE 21, TYPE 21α 65mm-100mm

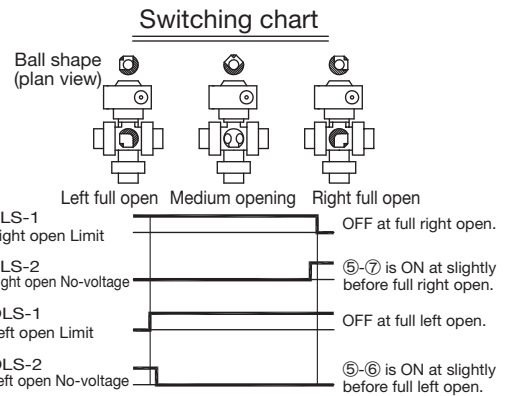
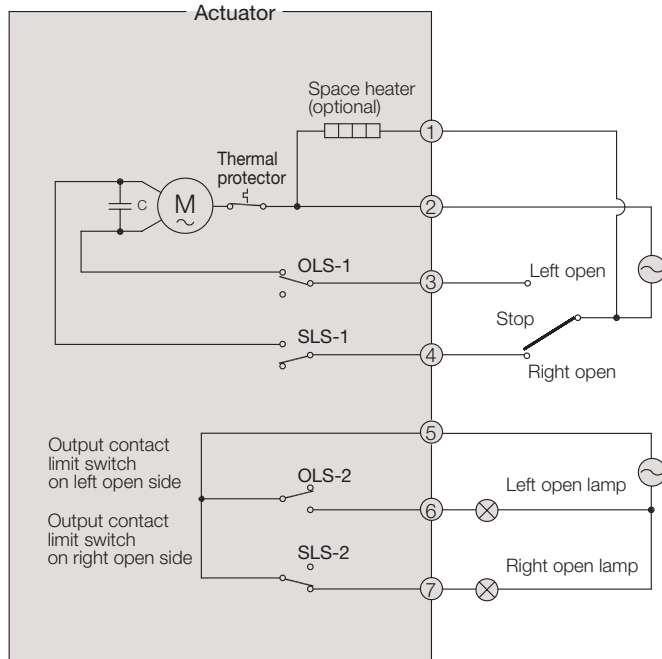
BUTTERFLY VALVE TYPE 57 40mm - 350mm

BUTTERFLY VALVE TYPE 55 50mm - 250mm

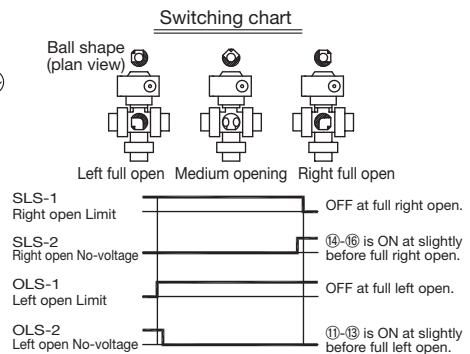
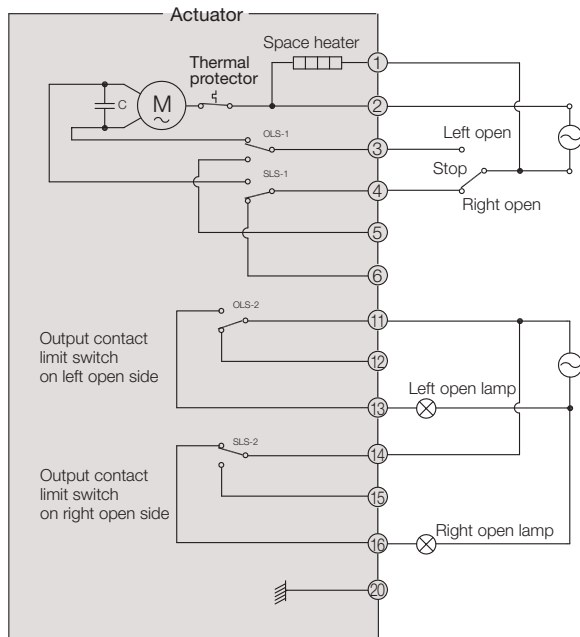
ROTARY DAMPER 40mm - 400mm



3 WAY BALL VALVE TYPE 23 15mm - 50mm



3 WAY BALL VALVE TYPE 23 65mm - 100mm



Note: The wiring diagram shows the state at the completion of right open movement.



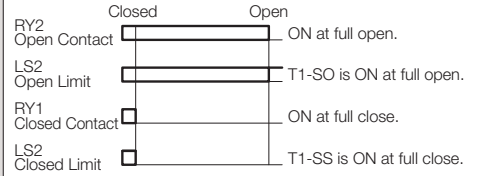
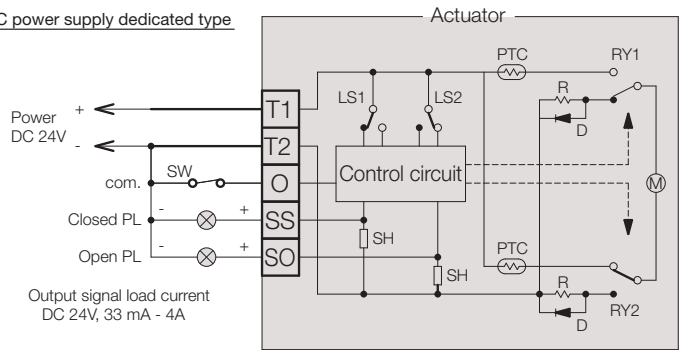
- LIGHTWEIGHT AND COMPACT SIZE
- CAN BE MANUALLY OPENED AND CLOSED BY LOOSENING THE LOCK SCREW AND TURNING THE OPERATING UNIT IN THE OPEN OR CLOSED DIRECTION.
- THE PRODUCT LINE ALLOWS FOR SELECTION ACCORDING TO THE FLUID TO BE USED. BALL VALVE TYPE 21 FOR CHEMICAL SOLUTION LINES AND WATER BALL VALVE FOR WATER/SEA WATER LINES CAN BE SELECTIVELY USED, WHICH CONTRIBUTES TO TOTAL COST REDUCTION.

BASIC SPECIFICATIONS (AC POWER SUPPLY: AM1) NIPPON VALVE CONTROLS	ACTUATOR TYPE						UNIT
	AM1-030		AM1-070		AM1-180		
	VALVE SIZE (mm)						
	15	20	25	32	40	50	
RATED TORQUE	3		7		18		N·m
CYCLE TIME	5.4		15.5		16		s
	4.5		13		13.5		
POWER CONSUMPTION	16				19		VA
POWER SUPPLY	AC100/110, AC200/220 (SINGLE PHASE)						V
	AC100/110, AC200/220 (SINGLE PHASE)						
MOTOR	SYNCHRONOUS MOTOR						
MOTOR PROTECTION	EQUIPPED WITH THERMAL PROTECTOR						
OUTPUT SIGNAL LOAD CURRENT	Max.0.7A(120V)/0.5A(AC250V)						
	* Min. applicable load: 100 mA (AC 100/200V)						
OPERATING AMBIENT TEMPERATURE	-20-55						°C
DUTY FACTOR (%ED)	20% 15min						
SPACE HEATER RATED OUTPUT	1						W
PROTECTIVE STRUCTURE	OUTDOOR RAINPROOF STRUCTURE (EQUIVALENT TO IP65)						
MAIN MATERIAL	CASE: ALUMINUM DIE-CAST / COVER: POLYCARBONATE						
WIRE DRAWING TYPE	G3/8 WIRE CONNECTOR PROVIDED (FOR ø5-10.5 CABTYRE CABLE)						
KIND OF WIRE	0.14-1.5mm2(AWG26-14)						

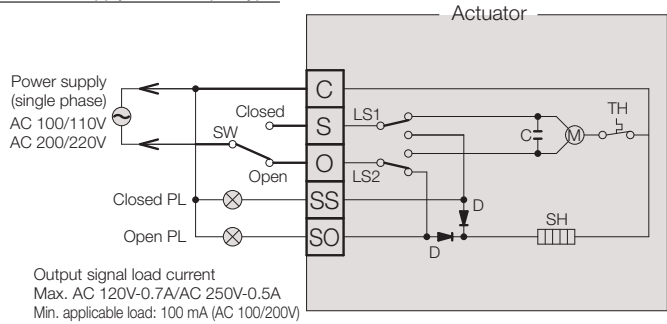
BASIC SPECIFICATIONS (DC POWER SUPPLY: DM2) NIPPON VALVE CONTROLS	ACTUATOR TYPE						UNIT
	DM2-030		DM2-070		DM2-180		
	VALVE SIZE (mm)						
	15	20	25	32	40	50	
RATED TORQUE	3		7		18		N·m
CYCLE TIME	2-3.5		2-3		4-6		s
POWER CONSUMPTION	Max.10				Max.24		VA
POWER SUPPLY	DC24						V
MOTOR	DC MOTOR						
MOTOR PROTECTION	EQUIPPED WITH THERMISTOR (CURRENT LIMITER TYPE)						
OUTPUT SIGNAL LOAD CURRENT	DC24V 33mA-4A						
OPERATING AMBIENT TEMPERATURE	-20-55						°C
DUTY FACTOR (%ED)	20% 15min						
CONDENSATION PREVENTION MEASURES	EQUIPPED WITH BUILT-IN SPACE HEATER (1W)						W
PROTECTIVE STRUCTURE	OUTDOOR RAINPROOF STRUCTURE (EQUIVALENT TO IP65)						
MAIN MATERIAL	CASE: ALUMINUM DIE-CAST / COVER: POLYCARBONATE						
WIRE DRAWING TYPE	G3/8 WIRE CONNECTOR PROVIDED (FOR ø5-10.5 CABTYRE CABLE)						
KIND OF WIRE	0.14-1.5mm2(AWG26-14)						

15mm - 50mm

DM2: DC power supply dedicated type



AM1: AC Power Supply Transfer Input Type



Used voltage (single phase)	Frequency
<input type="checkbox"/> AC 100V	<input type="checkbox"/> 50Hz
<input type="checkbox"/> AC 110V	<input type="checkbox"/> 60Hz
<input type="checkbox"/> AC 200V	
<input type="checkbox"/> AC 220V	

