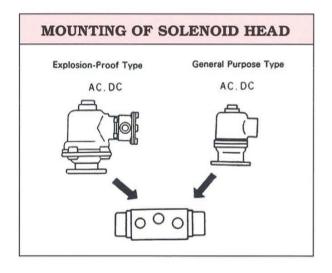
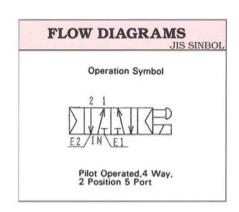


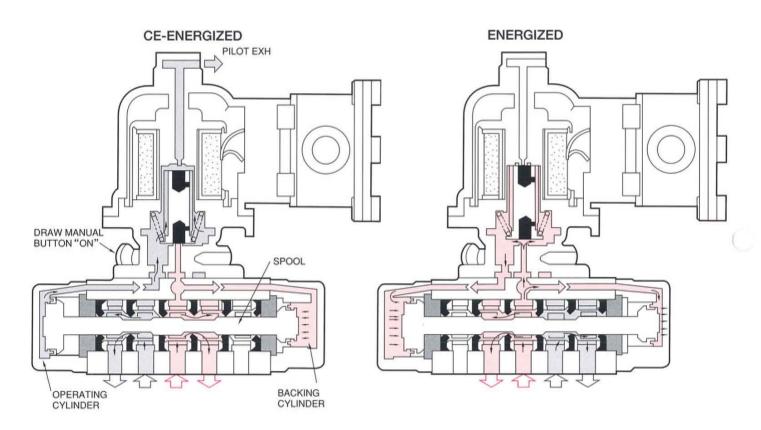
# PNEUMATIC 4-WAY SOLENOID VALVE



## **Principle Operation Series M15G**







## **OPERATION**

When solenoid is de-energized, pressure of ope rating cylinder is exhausted from "PILOTEXH" spool turns to left by the thrust of backing cylinder IN→1, 2→E2

When solenoid is energized pressure adds to operating cylinder by the thrust, apool turns to right  $IN\rightarrow 1$ ,  $2\rightarrow E2$ 

Refer to Flow Diagrams

### 4-WAY SOLENOID VALVE Series M15G

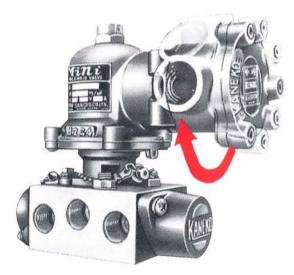
This valve is 4 Way Solenoid Valve, pilot operated, 2 positions, Double exhausts for pneumatic pressure, to be used for automatic control of double acting power cylinder or diaphragm valve and other various pneumatic pressure operating devices as compact type and light weight type. Especially, Explosion-proof type terminal box, conduit turns with in the limit of 300 Degrees. Easy connection of wire (Available to 2 mm²)

#### FEATURE

- OPERATES WITHOUT SUPPLY LUBRICATING OIL
   The inner rubbing portion is very smooth because it
   is treated with solid alumite and is covered with teflon.
- EASY INTERCHANGE OF COIL,
   Coils for AC,DC are designed to put in same solenoid
   Enclosure so easily interchange.
- CORROSION PROOF TREATMENT.
   It is very solid alumite and treated corrosion proof treatment.
- 4. SAFETY EXPLOSION-PROOF TYPE
- 5. NO SPRING TYPE.

Main valve is balance spool type, the spool is operated by operating piston and backing piston. So not need spring for backing.

- 6. ATTACHED MANUAL BUTTON.(PATENT NO.763367)
- 7. When de-energized, by manual button, it can perform confirmation of operation or test.
- CAN USE AS 3 WAY VALVE.Select 5ports can use as 3way valve.



Terminal box of Explosion-Proof Type

#### SPECIFICATIONS

TYPE : M15G...Pilot Operated 4way, PIPE SIZE : Rc 1/4", 3/8" 2Positions.

ORIFICE SIZE : φ 6

SOLENOID ENCLOSURE : General Purpose Type,

AC...A12PG DC...D12PG

: Explosion-proof Type,

AC...AE12PU DC...DE12PU

Explosion-proof Construction is according to JIS CO903 OFFICIAL APPROVAL No: d2G4.Class H Coil "ROKEN"

No. 21092

MEDIA : Clean air ( Not including dust

or water )

WORKING PRESSURE : 0.1~0.99Mpa

Cv FACTOR : 0.87

MEDIA TEMPERATURE :  $-20 \sim +60 ^{\circ}$ C AMBIENT TEMPERATURE:  $-20 \sim +60 ^{\circ}$ C

FREQUENCY : 300Cycle / Min. Continuous

Max.

DURABILITY

: Over 500 Million times

RESPONSE TIME

: 0.1 Second

COIL

: Continuous Duty Molded

Class H

#### STANDARD VOLTAGE

	AC			C
V/Hz	Inrush A	Holding A	V	А
100/50	0.27	0.16	24	0.33
100/60	0.25	0.13	100	0.072
200/50	0.14	0.08	110	0.08
200/60	0.13	0.07		
220/60	0.13	0.08		

Operating Voltage Renge: +10%-15%

Accessories: Mini-Lubu unit, Filter, Reducing valve, Oiler,

Meterring valve, Silencer Above are installed

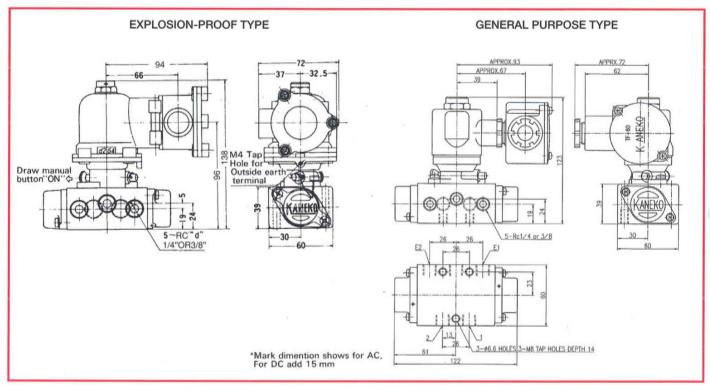
by reugest.

(Note) Other voltage are available when required.

# PNEUMATIC 4-WAY SOLENOID VALVE



## DIMENSION, EXPLOSION-PROOF & GENERAL PURPOSE TYPE



## MODEL NO.WEIGHT, EXPLOSION-PROOF & GENERAL PURPOSE TYPE



#### Lead wire :

Length 300mm (Note) Lead wire draw port, provided rubber cap corn.

#### MATERIAL

Body : Alumi alloy

Cover : Alumi alloy die cast Pilot body : Alumi die cast

Solenoid Enclosure: Alumi die cast for

Explosion-proof type Steel plate press for General purpose type EXXPLOSION PROOF TYPE (JIS C0903)

P	PIPE SIZE MODEL NO.		WEIGHT Kg	MEASUREMENT cft.
100	RC 1/4	M15G-8-AE12PU	1.4	0.067
AC	RC 3/8	M15G-10-AE12PU	1.4	0.067
DC	RC 1/4	M15G-8-DE12PU	1.4	0.000
טט	RC 3/8	M15G-10-DE12PU	1.4	0.067

#### **GENERAL PURPOSE TYPE**

Р	PIPE SIZE MODEL NO.		WEIGHT Kg	MEASUREMENT cft.
AC	RC 1/4	M15G-8-A12PG	0.9	0.032
AC	RC 3/8	M15G-10-A12PG	0.9	0.032
DC	RC 1/4	M15G-8-D12PG	0.0	0.000
	RC 3/8	M15G-10-D12PG	0.9	0.032



# **PNEUMATIC 3-WAY SOLENOID VALVE**

## AC, DC. DIRECT ACTING. ALUMI BODY

#### **SPECIFICATIONS**

**TYPE** : MOOU

PIPE SIZE : Rc 1/8",1/4", 3/8" ORIFICE SIZE&WORKING PRESSURE:

φ1.6....0~0.7Mpa

ф3.0....0~0.4Mpa

Cv FACTOR WEIGHT(Kg)  $: 0.084(\phi 1.6), 0.22(\phi 3.0)$ : General purpose Type 0.6Kg.

Explosion-proof Type 0.9Kg.

MEASUREMENT(cft): Ditto 0.016 and 0.04

Solenoid Enclosure, Ambient Temperature & Coil Same to Series M15G.

STANDARD VOLTAGE

01/11	D/1110		_		
V/Hz	Inrush A	Holding A		V	Α
100/50	0.27	0.16		24	0.33
100/60	0.25	0.13		100	0.07
200/50	0.14	0.08	DC	110	0.08
200/60	0.13	0.07			
220/60	0.13	0.08			

NAME OF PARTS MATERIAL

SUS304

SUS304



1	BODY	A6061
2	"O" RING	NBR
3	"O" RING	NBR
4	MANUAL BUTTON	A5056
5	MOUNTING STAND OF SOLENOID	ADC
6	"O" RING	NBR
7	SOLENOID ASS Y	

SCREW W/SW

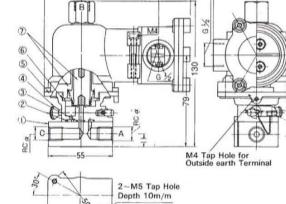
SNAP

**GENERAL PURPOSE** Type



**EXPLOSION-PROOF Type** 

■ Class H Coil: Roken No. 21092 · d2G4



MOOU SI	ERIES DIRECT ACTING TYPE					
Function L	Function   U   Universal Acting TYPE					
/	A C B T C					
Universal type is	available following 4 usage					
Normally closed	{ C—Inlet A—Outlet B—Exhaust					
Normally open	{ C—Inlet A—Outlet B—Exhaust					
Inlet-2 Outlet-1	{ B&C—Inlet A—Exhaust					
Inlet-1 Outlet-2	{ A—Inlet B&C—Outlet					

Moou Series Model No. Pipe Solenoid

Size	Orifice	Enclosure	AC	DC
	1.6	General	MOOU-6-A12PG	MOOU-6-D12PG
1/8	3.0	purpose	MOOU-6-A12PG-01	MOOU-6-D12PG-01
170	1.6	Explosion	MOOU-6-AE12PU	MOOU-6-DE12PU
	3.0	proof	MOOU-6-AE12PU-01	MOOU-6-DE12PU-01
	1.6	General	MOOU-8-A12PG	MOOU-8-D12PG
1/4	3.0	purpose	MOOU-8-A12PG-01	MOOU-8-D12PG-01
1/4	1.6	Explosion	MOOU-8-AE12PU	MOOU-8-DE12PU
	3.0	proof	MOOU-8-AE12PU-01	MOOU-8-DE12PU-01
	1.6	General	MOOU-10-A12PG	MOOU-10-D12PG
3/8	3.0	purpose	MOOU-10-A12PG-01	MOOU-10-D12PG-01
3/6	1.6	Explosion	MOOU-10-AE12PU	MOOU-10-DE12PU
	3.0	proof	MOOU-10-AE12PU-01	MOOU-10-DE12PU-01

## MANUAL RESET 3-WAY SOLENOID VALVE



### PNEUMATIC NO VOLTAGE RELEASM ELECTRICALLY TRIPPED SOLENOID ACTING

These 3 Way Solenoid Valve are designed to be manualreset by a mechanical button and tripped by a Solenoid.

Two types of operation are available: No Voltage Release and Electrically Tripped.

#### NO VOLTAGE RELEASE.LATCHED OPEN

When solenoid is energized and Manual Button is pushed up, the valve is latched open and orifice "C" (Pressure) opens and orifice "B" (Exhaust) closes thereby pressurizing the system.

Valve is latched in this position only as long as the solenoid is continuously energized. When the solenoid is deenergized the latch drops out and orifice "C" closes and orifice "B" opens thereby exhausting the system. The valve remains in this position until enrgized and manually operated. No Voltage Release Latched Clsoed also is available.

#### **ELECTRICALLY TRIPPED.LATCHED OPEN**

When Manual Button is pushed up, the valve is latched open and orifice "C" (Pressure) opens and orifice "B" (Exhaust) closes. Valve is latched in this position until the solenoid is momentarily energized then the latch drops out and orifice "C" closes and orifice "B" opens. The valve remains in this position until manually operated.

Latched closed construction also is available. Refer to Flow Diagrams

> MOUNTING OF SOLENOID HEAD

> > 00 BASE

AC

#### SPECIFICATIONS

**TYPE** : M51R: No Voltage Release

: M51T: Electrically Tripped

PIPE SIZE : Rc 1/4", 3/8"

**ORIFICE SIZE** : ф 6

SOLENOID ENCLOSURE : General Purpose Type, AC...A1

DC...D11

: Explosion-proof Type, AC...AE1

DC...DE11

Explosion-proof Construction is according to JIS CO903

OFFICIAL APPROVAL No : d2G4.Class B Coil "ROKEN" No. 14202

: d2G4.Class H Coil "ROKEN" No. 22721

**MEDIA** : Clean air ( Not including dust or water )

or Inter gas

WORKING PRESSURE : 0~0.99Mpa

: 0.58 Cv FACTOR

MEDIA TEMPERATURE : -20~+60°C AMBIENT TEMPERATURE : -20~+40℃

MATERIAL : Body: Anti-croosion Aluminum Alloy

> Spool: Stainless Steel Gasket: "O" Ring of NBR







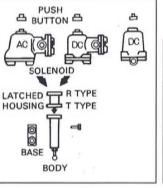


GENERAC PURPOSE TYPE FOR AC

TYPE FOR AC

TYPE FOR DC

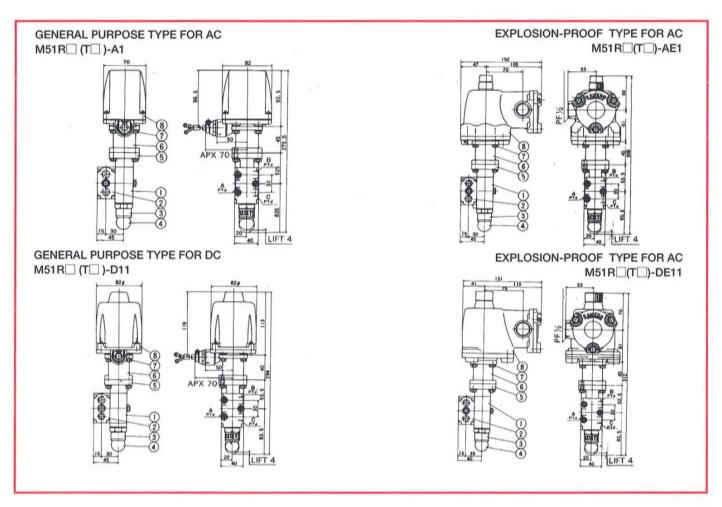
EXPLOSION-PROOF TYPE FOR DC



	FLOW DIAGRAMS JIS						JIS SINBOL
NO VOLTA	GE RELEASE	ENTERGIZE	LATCHED	ELECTRICA	LLY TRIPPED	DE-ENTERGIZ	ED LATCHED
FUNCTION RC	LATCHED CLOSE	FUNCTION RD	LATCHED OPEN	FUNCTION TC	LATCHED CLOSE	FUNCTION TD	LATCHED OPEN
(IN) C B(EX		A(OUT)		A (OUT)		(IN)C B.E	EXH1



## DIMENSIONS · MODEL NO, · MATERIAL



MODEL No			7
AC	DC	SIZE	a
M51RC-8-A1(AE1)	M51RC-8-D11(DE11)	8	1/4
M51RD-8-A1(AE1)	M51RD-8-D11(DE11)	8	1/4
M51RC-10-A1(AE1)	M51RC-10-D11(DE11)	10	3/8
M51RD-10-A1(AE1)	M51RD-10-D11(DE11)	10	3/8
M51TC-8-A1(AE1)	M51TC-8-D11(DE11)	8	1/4
M51TD-8-A1(AE1)	M51TD-8-D11(DE11)	8	1/4
M51TC-10-A1(AE1)	M51TC-10-D11(DE11)	10	3/8
M51TD-10-A1(AE1)	M51TD-10-D11(DE11)	10	3/8

	MODE	L NO.
	VALVE MODE	EL NO.
M	- (51) - ()-	- A1
VALVE TYPEL NO.		SOLENOID MODE
	FUNCTION	VALVE SIZE

	STAN	ARD VOLT	AGE	
SOLEN	OID MODEL	SCM5L	SOLENOID	MODEL S80
V/Hz	INRUSH A	HOLDING A	DC-V	HOLDING A
100/50	2.8	0.5	24	0.91
100/60	3.1	0.56	48	0.53
110/60	2.6	0.46	100	0.24
200/50	1.4	0.25	110	0.26
220/50	1.3	0.22	125	0.20
220/60	1.3	0.23		
	CON	ITINUOUS D	UTY	
0	PERATING V	OLTAGE RAN	GE+10%,-1	5%
	CLASS O	F COIL INSU	ILATION B	

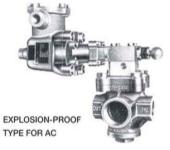
No.	PARTS	No.OF UNIT	MATERIAL
1	BODY	1	A6063
2	BASE	1	A6063
3	RETAINER	1	SUS304
4	MANUAL BUTTON	1	PLASTICS
5	SPACER	1	AC2C-F
6	LATCHET	1Set	
7	BOLT W/SW	4Sets	SS400
8	SOLENOID ASS'Y	1Set	

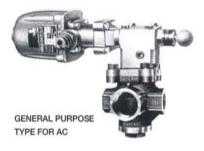
# MANUAL RESET 3-WAY SOLENOID VALVE



## PNEUMATIC · NO VOLTAGE RELEASM · ELECTRICALLY TRIPPED · PILOT OPERATED









#### **SPECIFICATIONS**

TYPE : M55R: No Voltage Release

: M55T: Electrically Tripped

PIPE SIZE : Rc 1/4 to RC 1- 1/4

SOLENOID ENCLOSURE : General Purpose Type, AC...A1

DC...D11

: Explosion-proof Type, AC...AE1

DC...DE11

Explosion-proof Construction is according to JIS CO903

OFFICIAL APPROVAL No : d2G4.Class B Coil "ROKEN" No. 14202

: d2G4.Class H Coil "ROKEN" No. 22721

MEDIA : Clean air ( Not including dust or water )

Inter gas

WORKING PRESSURE :  $0.12\sim0.99$ Mpa MEDIA TEMPERATURE :  $-20\sim+60^{\circ}$ C AMBIENT TEMPERATURE :  $-20\sim+40^{\circ}$ C

MATERIAL : Body: Cast Bronze (Gun Metal)

Spool: Stainless Steel Gasket: "O" Ring of NBR

#### FEATURE

ONE OF SAFETY VALVE, NO MISS OPERATING.
 As half automatic valve, because no free operating as general solenoid valve.

2. EASY INTERCHANGE OF COIL.

Coils for AC,DC are designed to put in same solenoid enclosure, so easily interchange.

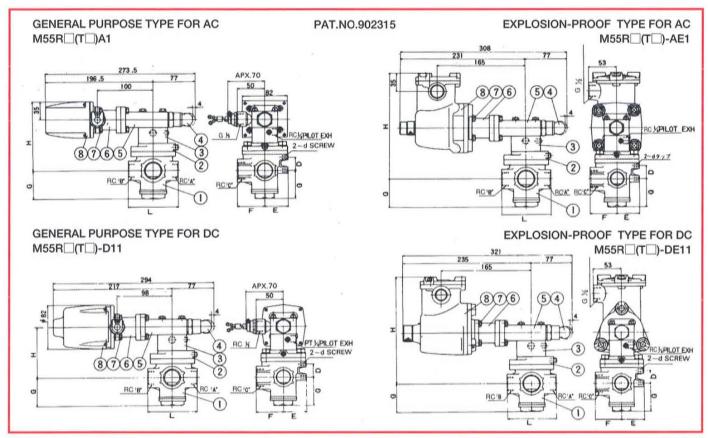
3. SAFETY EXPLOSION PROOF TYPE.

Explosion-proof construction based on JIS,Official approved by the labor Ministry.

	TING OF IOID HEAD
PUSH BUTTON SOLENOID	R TYPE T T TYPE PILOT VALVE
• [00]	ТОТ ВОВУ
- AC	

FLOW DIAGRAMS  JIS SINBOL										
NO VOLTAGE RELEASE ENTERGIZED LATCHED					ELECTR	CA	LLY TRIPPED (	DE-ENTER	RGIZ	ZED LATCHED
FUNCTION RC LA	ATCHED CLOSE	FUNCTION	RD	LATCHED OPEN	FUNCTION	TC	LATCHED CLOSE	FUNCTION	TD	LATCHED OPEN
(IN)B C (EXH)		M T (I N)B	O (E	XH)	(I N)B	O (E	XH)	(I N)B	C (E	XH)

## DIMENSIONS · MODEL NO, · MATERIAL



MODE	_ No.	SIZE	A	В	C	D	d	E	F	G	L	H	CV FACTOR
M55RC(TC)-8-A1	M55RC(TC)-8-AE1	8	1.74	1/4									1.00
M55RD(TD)-8-A1	M55RD(TD)-8-AE1	0	1/4	1/4	1/2	24	M6	38	38	45	70	204	1.22
M55RC(TC)-10-A1	M55RC(TC)-10-AE1	10	0.40	3/8	11/6	6.4	IVIO	50	00	45	10	204	2.525
M55RD(TD)-10-A1	M55RD(TD)-10-AE1	1.0	3/8	3/8									3.2
M55RC(TC)-15-A1	M55RC(TC)-15-AE1	15	1/0	1/2									4.0
M55RD(TD)-15-A1	M55RD(TD)-15-AE1	15	1/2	1/2	1	25	M6	41	50	53	90	208	4.3
M55RC(TC)-20-A1	M55RC(TC)-20-AE1	20	3/4	3/4			14102	7.1	00	00	00	200	100
M55RD(TD)-20-A1	M55RD(TD)-20-AE1	20	.3/4	37.4									5.18
M55RC(TC)-25-A1	M55RC(TC)-25-AE1	25	4	1									115
M55RD(TD)-25-A1	M55RD(TD)-25-AE1	25	-1	_ '	1 1/2	40	1/10	10	60	69	120	215	14.5
M55RC(TC)-32-A1	M55RC(TC)-32-AE1	32	1	1 1/4	176	40	1410	7.0	90	03	1 Sie U	-10	
M55RD(TD)-32-A1	M55RD(TD)-32-AE1	36	1 1/4	1 1/4					_				17.3

No.	PARTS	No.OF UNIT	MATERIAL
1	BODY	1	CAC406
2	BASE	1	ACAC-F
3	PILOT BASE	1	A2017
4	MANUAL BUTTON	1	PLASTICS
5	PILOT ASS'Y	1Set	
6	LATCHET ASS'Y	1Set	
7	BOLT W/SW	4Sets	SS400
8	SOLENOID ASS'Y	1Set	

MODEL No.	SIZE	Α	В	С	D	Id	E	F	G	L	Н	Cv FACTOR
M55RC(TC)-8-D11 M55RC(TC)-8-DE11 M55RD(TD)-8-DE11	8	1/4	1/4	1.00		ME		20		70		1.22
M55RC(TC)-10-D11 M55RC(TC)-10-DE11 M55RD(TD)-10-DE11 M55RD(TD)-10-DE11	10 3/8	3/8	1/2	24	M6	38	38	45	70	204	3.2	
M55RC(TC)-15-D11 M55RC(TC)-15-DE11 M55RD(TD)-15-D11 M55RD(TD)-15-D11		1/2	1/2	1	25	ME	11	50	53	90	208	4.3
M55RC(TC)-20-D11 M55RC(TC)-20-DE11 M55RD(TD)-20-DE11		3/4	3/4	'	20	IVIO	41	50	55	30	200	5.18
M55RC(TC)-25-D11 M55RC(TC)-25-DE11 M55RD(TD)-25-DE11 M55RD(TD)-25-DE11		1	1	1 1/2	40	M8	17	80	60	120	215	14.5
M55RC(TC)-32-D11 M55RC(TC)-32-DE11 M55RD(TD)-32-DE11		32 1 1/4	1 1/4	1 1/6		IVIO	47	50	03	120	210	17.3

	STANA	RD VOL	TAGE				
SOLENO	D MODEL	SCM5L	SOLENOID 1	MODEL S80			
V/Hz	INRUSH A	HOLDING A	DC-V	HOLDING A			
100/50	2.8	0.5	24	0.91			
100/60	3.1	0.56	48	0.53			
110/60	2.6	0.46	100	0.24			
200/50	1.4	0.25	110	0.26			
220/50	1.3	0.22	125	0.20			
220/60	1.3	0.23					
CONTINUOUS DUTY							
OPERATING VOLTAGE RANGE+10%,-15%							
С	COIL INSULATION CLASS B						

	VALVE MODEL NO.
MODEL NO. VALVE TYPEL NO.	M - 55 RC - 25 - A1 SOLENOID MODEL
	FUNCTION VALVE SIZE

(Note) Other Voltage available when required.

# 4-WAY SOLENOID VALVE



### PNEUMATIC • NO VOLTAGE BELESE • ELECTRICALLY TRIPPED • SOLENOID ACTING

#### NO VOLTAGE RELEASE

When solenoidis energized and Manual but ton is manullypushed, the valve is latched open;pressure is applied to cylinder "OUT 1" and cylinder "OUT 2" is exhausted. Valve is latched in this position only as longas the solenoid is continuously energized. when the solenoid is de-energized the latch drops put and pressure is applied to cylinder "OUT 2" and cylinder "OUT 1" is exhausted. The valveremains in this position until energizes and manuallyoperated. ELECTRICALLY TRIPPED also is available. Refer to Flow Diagrams.

#### **SPECIFICATIONS**

TYPE : M81RG: No Voltage Release

: M81TG: Electrically Tripped

PIPE SIZE : Rc 1/4", 3/8"

ORIFICE SIZE : φ 6

SOLENOID ENCLOSURE : General Purpose Type, AC...A1

DC...D11

: Explosion-proof Type, AC...AE1

DC...DE11

Explosion-proof Construction is according to JIS CO903

OFFICIAL APPROVAL No : d2G4.Class B Coil "ROKEN" No. 14202

: d2G4.Class H Coil "ROKEN" No. 22721

MEDIA : Clean air ( Not including dust or water )

or Inter gas

WORKING PRESSURE : 0~0.99Mpa

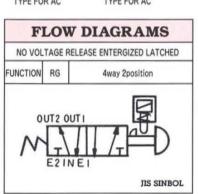
Cv FACTOR : 0.58

MEDIA TEMPERATURE : −20~+60°C AMBIENT TEMPERATURE : −20~+40°C

MATERIAL : Body: Anti-croosion Aluminum Alloy

Spool: Stainless Steel Gasket: "O" Ring of NBR

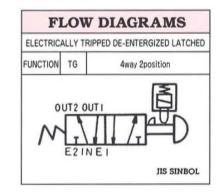


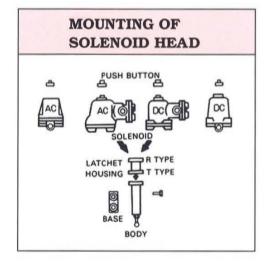




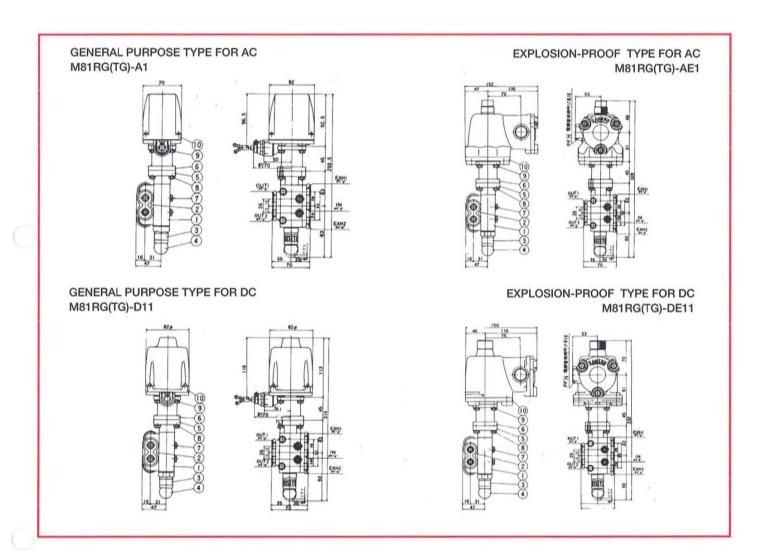
GENERAL PURPOSE TYPE FOR AC

EXPLOSION-PROOF TYPE FOR AC

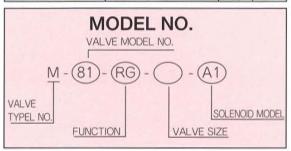




### DIMENSIONS · MODEL NO · MATERIAL



MODE	CIZE	21	
AC	DC	SIZE	a
M81RG-8-A1	M81RG-8-D11	8	1/4
M81RG-8-AE1	M81RG-8-DE11	8	1/4
M81RG-10-A1	M81RG-10-D11	10	3/8
M81RG-10-AE1	M81RG-10-DE11	10	3/8
M81TG-8-A1	M81TG-8-D11	8	1/4
M81TG-8-AE1	M81TG-8-DE11	8	1/4
M81TG-10-A1	M81TG-10-D11	10	3/8
M81TG-10-AE1	M81TG-10-DE11	10	3/8



ST	ANDA	RD V	DLTA	3E		
S	CM5L	S80				
V/Hz	INRUSH A	HOLDING A	DC-V	HOLDING A		
100/50	2.8	0.5	24	0.91		
100/60	3.1	0.56	48	0.53		
110/60	2.6	0.46	100	0.24		
200/50	1.4	0.25	110	0.26		
220/50	1.3	0.22	125	0.20		
220/60	1.3	0.23				
	CONT	INUOL	IS DUT	Υ		
OPERAT	ING VOL	TAGE RA	NGE+109	%15%		
COIL	INSU	LATION	V CLAS	SS B		

No.	PARTS	No.OF UNIT	MATER- INL
1	BODY	1	A6063
2	BASE	1	A6063
3	RETAINER	1	SUS304
4	MANUAL BUTTON	1	PLASTICS
5	SPACER	1	AC2C-F
6	LATCHET	1Set	
7	BOLT W/SW	4Sets	SS400
8	BOLT W/SW	4Sets	SS400
9	BOLT W/SW	4Sets	SS400
10	SOLENOID ASS'Y	1Set	





ISO9001 Approved, Certified Business for High-pressure Gas Test annd Manufacture

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