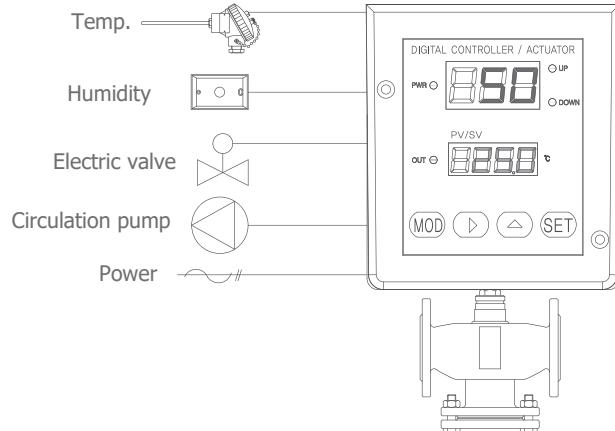




8-10

Digital controller + valve actuator(integrated) GDCA-20P / GDCA-35P



Summary

Digital controller & Actuator detects Temp. or humidity to control valve actuator with setting value of digital proportional control box as integrated actuator. Panel for Temp. controller on-site is not necessary and only needs wire-connection to Temp. controller from Temp or humidity sensor. As linear type, it is proper to control Globe valve and display opening position from 0 ~ 100% with accurate feedback.

- Various functions, robust design, reliable operating
- Low maintenance
- For HVAC

Type Summary

Electric power for operation is 220VAC. Proportional valve actuator is operated by PT100Ω or 4 ~ 20mA for input signal. Digital display by 4 ~ 20mA of output signal shows opening position of valve.

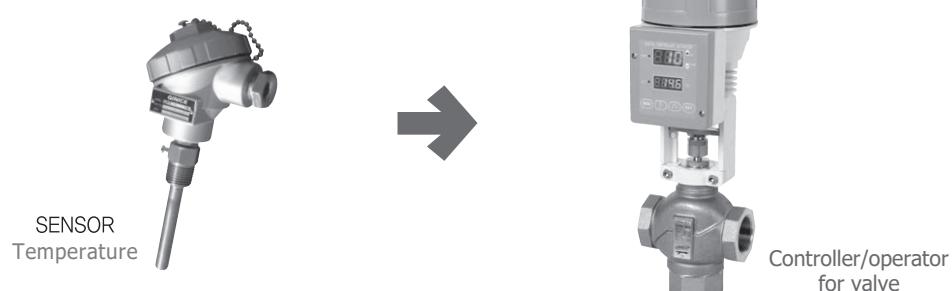
Model	Norminal stroke(mm)	Norminal force
GDCA-20P	20	2000N (2.0KN)
GDCA-35P	40	3500N (3.5KN)

Application

To operate 2-way and 3-way valve in type of bronze screw and (ductile) flange, in the system of HVAC for heating &cooling, floor heating, ice thermal storage.

<Electromagnetic interference TEST>

- Standard : CE(No. EMC2226-04-01)
- EMC standard : EN60730-2-14(1997), EN60730-1:2000



 **Technical Data**

▶ standard specifications

Model	GDCA-20P	GDCA-35P
Norminal stroke	20mm	40mm
Norminal force	2000N (2.0KN)	3500N (3.5KN)
Operating time	50Sec	100Sec
voltage	220Vac ±10% / 60Hz	220Vac ±10% / 60Hz
Consumption power	16.5VA	16.5VA
Input signal	4 ~ 20mA(adc(internal wiring))	4 ~ 20mA(adc(internal wiring))
Condenser	0.474μF	0.474μF
Rated load	0.075A	0.075A
Display	DIGITAL display, 0 ~ 100%	
Withstand voltage	1000VAC, 50/60Hz, 1min	
Ambient temperature	-15 ~ 65°C	
Ambient humidity	5 ~ 95% RH(without condensation)	
Motor	E (IEC)	
Housing protection	IP54(IP65(front side))	
Weight	4.2Kg	4.5Kg

※ Standard frequency is 60Hz with 50Hz optional

▶ Controller specifications

Front side	Digital display type
Input	Temp. : Pt100Ω(3wire) in use
D2-Dip S/W	Temp. humidity : 4 ~ 20mA(2wire) in use
Auxiliary power supply	External input sensor 2wire, 4 ~ 20mA as power supply 24VDC ±10%
Output signal	4 ~ 20mA, Max. load 500Ω(wiring in the factory)
Relay 1(N/C)	SPST N.O - 5A/250VAC - for electricity
Relay 2(CP)	SPST N.O - 5A/250VAC - for circulating pump
Heating / Cooling	Installed (DIP S/W D1-(1) switch
Parameter	Adjusting : -99.9 ~ + 199.9 Dead Zone : 0.0 ~ 9.9 Proportional(P) : 0.0 ~ 99.9 Integrated(I) : 0 ~ 5999
Ambient Temp. humidity	-15 ~ 65°C / 5 ~ 95%rh(without condensation)
Housing protection	IP65 (front side)

※ Specifications to be changed without notice for development and upgrading

Technical data

▶ 2-WAY FLANGED (Water) VALVE USED – VITON ,TEFLON SEAL (Close-Off BAR)

VALVE SIZE			$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ '	2"	$2\frac{1}{2}$ '	3"	4"	5"	6"
TYPE	ACTUATOR	VOLTAGE											
2-Way	GDCA-20P	220Vac	10	10	10	10	10	6.7	5.0	3.0	–	–	–
	GDCA-35P	220Vac	–	–	–	–	–	–	6.5	4.1	2.4	2.0	1.5

▶ 2-WAY FLANGED (Steam) VALVE USED – VITON, PTFE SEAL (Close-Off BAR)

VALVE SIZE			$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ '	2"	$2\frac{1}{2}$ '	3"	4"	5"	6"
TYPE	ACTUATOR	VOLTAGE											
2-Way	GDCA-20P	220Vac	10	10	10	10	8.5	4.7	–	–	–	–	–
	GDCA-35P	220Vac	–	–	–	–	–	–	4.7	3.0	1.7	–	–

▶ 2-WAY SCREWED VALVE USED – VITON,TEFLON SEAL (Close-Off BAR)

VALVE SIZE			$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ '	2"
TYPE	ACTUATOR	VOLTAGE						
2-Way	GDCA-20P	220Vac	10	10	10	10	10	7.4

▶ 3-WAY FLANGED VALVE USED – VITON ,TEFLON SEAL (Close-Off BAR)

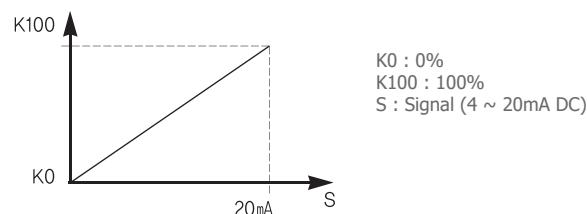
VALVE SIZE			$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ '	2"	$2\frac{1}{2}$ '	3"	4"	5"	6"
TYPE	ACTUATOR	VOLTAGE											
3-Way	GDCA-20P	220Vac	10	10	10	10	8.8	5.2	4.0	3.0	–	–	–
	GDCA-35P	220Vac	–	–	–	–	–	–	4.8	2.7	1.3	1.0	–

▶ 3-WAY SCREWED VALVE USED – VITON , TEFLON SEAL (Close-Off BAR)

VALVE SIZE			$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	$1\frac{1}{4}$ "	$1\frac{1}{2}$ '	2"
TYPE	ACTUATOR	VOLTAGE						
3-Way	GDCA-20P	220Vac	10	10	10	10	10	7.4

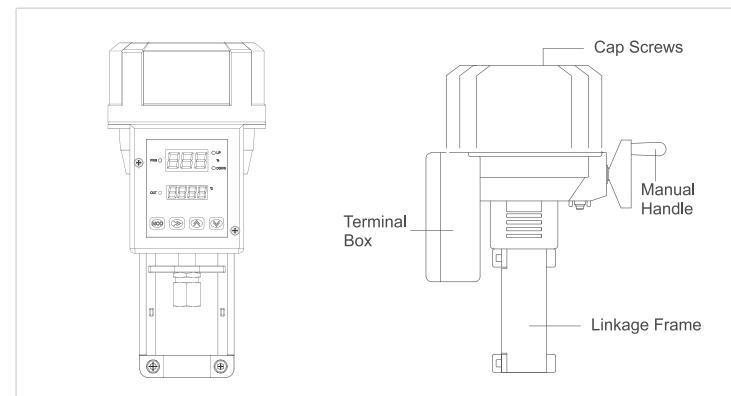
Technical features

- Easy to check opening position of valve by digital display(0 ~ 100%) on front side of actuator
- Torque limit switch installed to protect valve and actuator when over-loaded
- 0 ~ 100% Auto-setting to be adjusted within the scope of stroke
- NC / NO to be selected without special device
- Constant speed by Synchronous Motor in voltage fluctuation



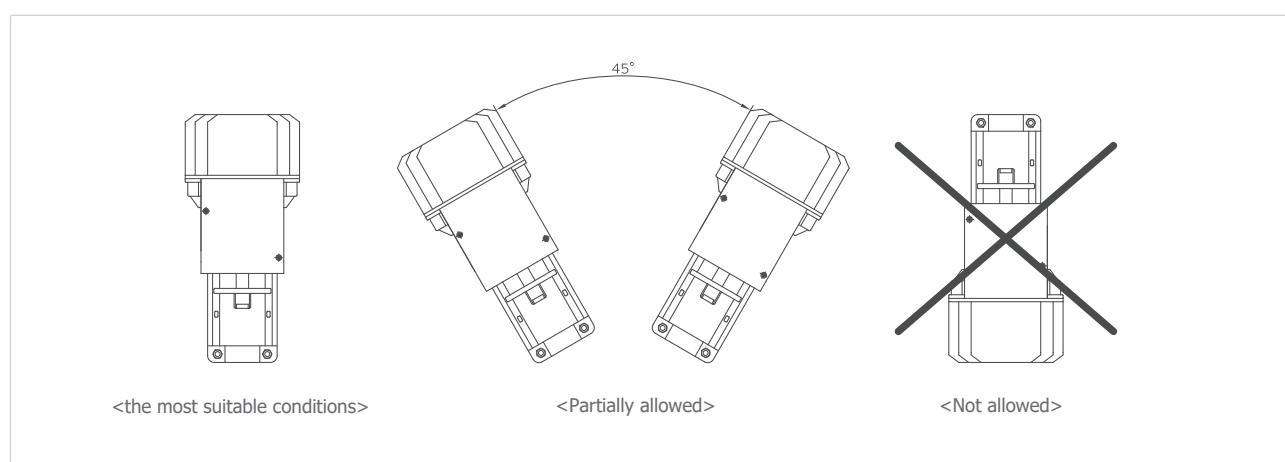
Design Character

- Easy mounting actuator on to valve without special device
- Low maintenance on Synchronous motor for CW/CCW, which to be replaced in repair
- Easy manual hand-wheel by De-Clutching system



Installation and Mounting Notes

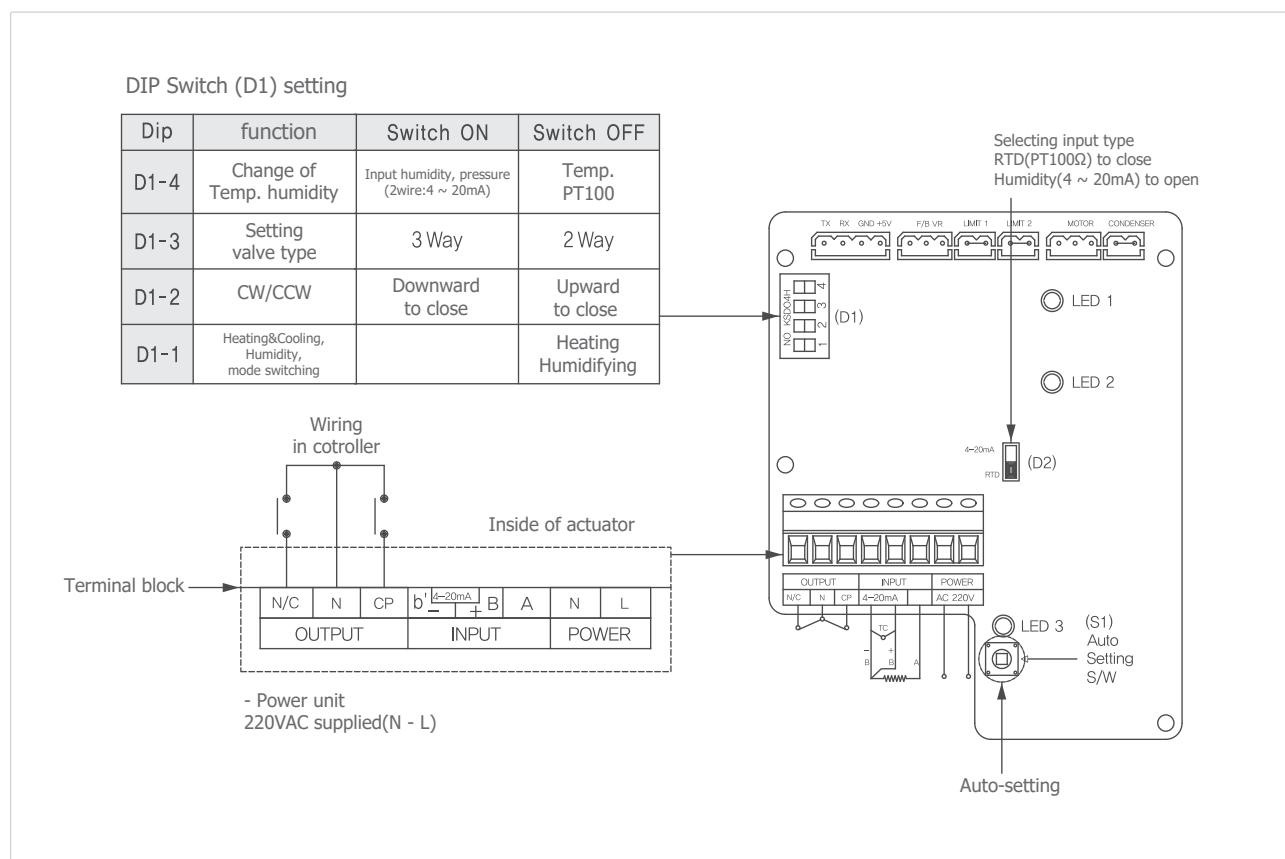
Assure to go through before valve installation



Check Point

Assure of wiring and functions and test

Wiring Diagram



▶ Input

- In case of Pt100Ω input signal, convert Dip S/W (D2) to RTD and wire to Input terminal block(-b, +B, A)
- In case of 4 ~ 20mA input signal, convert Dip S/W (D2) to 4 ~ 20mA with D1-(4) "ON" and wire to input terminal block(-b, +B). (Potential breakdown when converting Dip S/W after wiring)

▶ Dip Switch (D1) converting

Heating & Cooling converting :

- Convert Dip S/W D1-(1) to "OFF"(right side) for heating
- Convert Dip S/W D1(1) to "ON"(left side) for cooling

▶ Humidity controlling and CW/CCW converting

- Convert Dip S/W D1-(2) to "ON"(left side) for CW
- Convert Dip S/W D1-(2) to "OFF"(right side) for CCW (normally used)

▶ Input converting

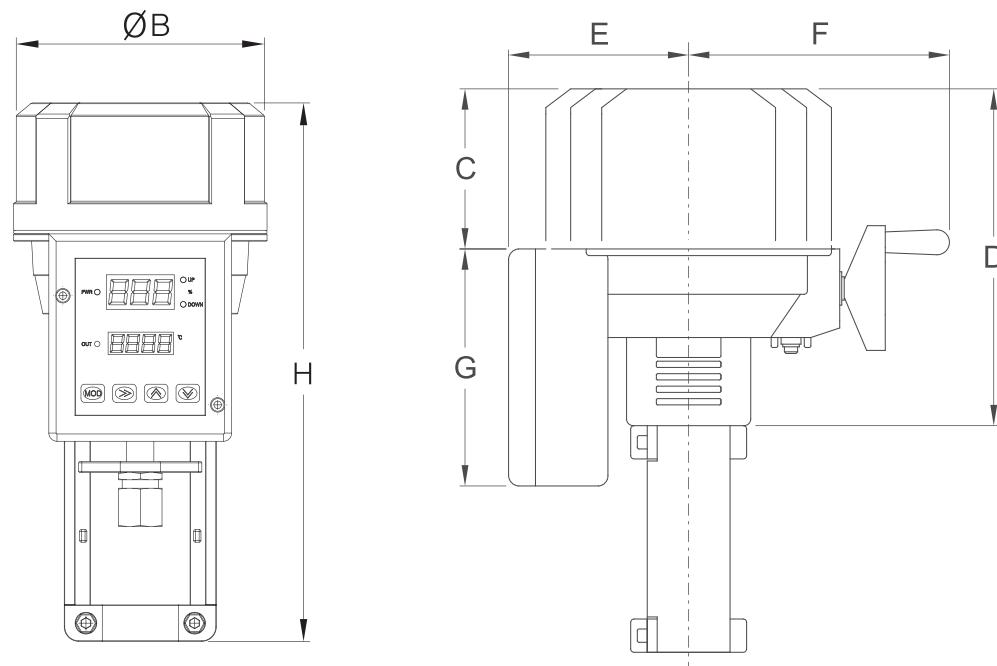
- In case of Pt100Ω input, convert D1-(4) to "OFF"(right side)
- In case of Humidity. 4 ~ 20mA input, convert D1-(4) to "ON"(left side)

▶ Relay output

- Wire to (N - N/C) for electricity
- Wire to (N - CP) for circulating pump

▶ Auto-Setting

- Start Auto-Setting with Auto Setting S/W (S1) button pressed for 3~4 sec
(To prevent fine leakage in normal operation)
- Note) The time for Auto-setting is 150sec for GDCA-20P, 240sec for GDCA-35P.
Uncompleted with (S1) button pressed again before full running

 Shape Dimension


GDCA - 20P, 35P

Model	GDCA - 20P	GDCA - 35P
ØB	138	138
H	269	297
C	72	73
D	160	161
E	88	89
F	124	123
G	113	113