

# CCM21 / CCV20

## Actival-FSG Combustion Control Motor and Valve

The CCM21/CCV20 is an integral actuator/electrically driven butterfly valve incorporated with the combustion control motor and valve. The motor has an input of relay contact for position proportioning or on-off positioning.

The valve can control the flow of air, city gas, natural gas or LP gas. Since the motor and the valve are directly connected, no linkage adjustment is required.



### Specifications

#### CCM21 Motor

| Model No.  | CCM21C1310   | CCM21C2310   |
|--|--|--|
| Control type   | Adjustable type for close and open positions   |  |
| Rotating angle adjustment (Open - Close position END switch) | Close position: 0 to 45° Open position: 45 to 90°<br>(Position at factory set: Close position 0°; Open position 90°) |  |
| Power supply   | 100Vac, 50/60Hz  | 200Vac, 50/60Hz  |
| Signal switch  | Operating point  | Close signal: 1 to 9° outward from closed position<br>Open signal: 1 to 9° inward from opened position |
|  | Electrical rating  | 250Vac, 5A   |
| Control mode   | Proportioning or ON-OFF positioning  |  |
| Rotation angle and timing                                    | Angle: 90° Timing: 30s (50Hz), 25s (60Hz)  |  |
| Torque   | Rating: 11.8N·m (85% x Rated voltage impressed)<br>Maximum: 14.7N·m  |  |
| Potentiometer  | Normal resistance: 135Ω (Integral of 1kΩ potentiometer and 180Ω solid resistor)<br>Maximum impressed voltage: 5Vdc   |  |
| Output axis position at factory set                          | 0° (closed valve position)   |  |
| Power consumption  | 7VA  |  |
| Ambient temperature  | -20 to +60°C   |  |
| Ambient humidity   | 5 to 90%RH   |  |
| Protection   | Vertical output axis: IP54   |  |
| Mounting   | Direct mounting on the CCV20 combustion control valve  |  |
| Weight   | 1.6kg  |  |
| Accessories  | 5mm dia. x 14mm (4) Hexagon socket bolt for coupling motor and valve   |  |

### Selection Guide

| Model No.  | Power supply | Appearance |
|------------|--------------|------------|
| CCM21C1310 | 100Vac       |            |
| CCM21C2310 | 200Vac       |            |

| Model No. | Pipe connection | Appearance |
|-----------|-----------------|------------|
| CCV2020   | 3/4 Rc          |            |
| CCV2025   | 1 Rc            |            |
| CCV2032   | 1 1/4 Rc        |            |
| CCV2040   | 1 1/2 Rc        |            |
| CCV2050   | 2 Rc            |            |
| CCV2065   | 2 1/2 Rc        |            |
| CCV2080   | 3 Rc            |            |

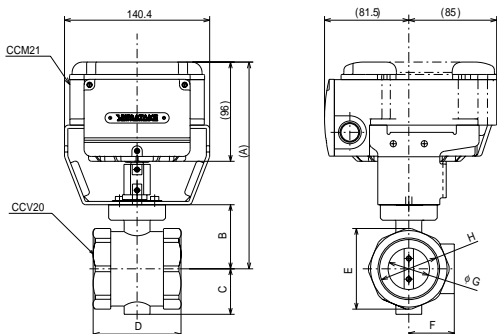
#### CCV20 Valve

| Model No.           | CCV2020                               | CCV2025 | CCV2032 | CCV2040 | CCV2050 | CCV2065 | CCV2080 |       |
|---------------------|---------------------------------------|---------|---------|---------|---------|---------|---------|-------|
| Connection port     | Rc 3/4                                | 1       | 1 1/4   | 1 1/2   | 2       | 2 1/2   | 3       |       |
| Flow factor         | Cv 5.9                                | 12.4    | 31.7    | 45.5    | 74.1    | 120.3   | 174.9   |       |
| Flow rate           | 90° at full open                      | 7.3     | 15.2    | 38.9    | 55.8    | 90.8    | 147.5   | 214.3 |
|                     | 0° at full close                      | 0.5     | 0.5     | 0.7     | 1.0     | 2.0     | 3.0     | 4.0   |
| Nm <sup>2</sup> /h  |                                       |         |         |         |         |         |         |       |
| Applicable pressure | 20kPa max.                            |         |         |         |         |         |         |       |
| Ambient temperature | -10 to +60°C                          |         |         |         |         |         |         |       |
| Ambient humidity    | 5 to 90%RH                            |         |         |         |         |         |         |       |
| Flow temperature    | -10 to +60°C                          |         |         |         |         |         |         |       |
| Type of gas         | Air, city gas, natural gas and LP gas |         |         |         |         |         |         |       |
| Valve body material | Cast iron                             |         |         |         |         |         |         |       |
| Weight (kg)         | 1.6                                   | 1.4     | 2.0     | 1.8     | 2.3     | 3.0     | 3.7     |       |

Note: Flow conditions of gas are under pressure differential ΔP = 250Pa and air specific gravity of 1.0.

### Dimensions

(unit:mm)



| Model No. | A   | B  | C  | D  | E   | F  | G  | H   |
|-----------|-----|----|----|----|-----|----|----|-----|
| CCV2020   | 187 | 49 | 30 | 75 | 48  | 30 | 16 | 20A |
| CCV2025   |     |    |    |    |     |    | 22 | 25A |
| CCV2032   | 195 | 57 | 37 | 80 | 64  | 37 | 28 | 32A |
| CCV2040   |     |    |    |    |     |    | 32 | 40A |
| CCV2050   | 200 | 62 | 40 | 85 | 78  | 44 | 40 | 50A |
| CCV2065   | 208 | 70 | 50 | 95 | 95  | 55 | 50 | 65A |
| CCV2080   | 215 | 77 | 59 |    | 110 | 61 | 65 | 80A |