

# Combustion Control Motor and Valve | CCM21/CCV20

The CCM21/CCV20 combustion control motorized valve uses an electrically driven butterfly valve and directly connected actuator. The motor uses relay contact input for position proportioning or on-off positioning. The valve can control the flow of air, city gas, natural gas, or LP gas.



## Specifications

### Combustion control motor

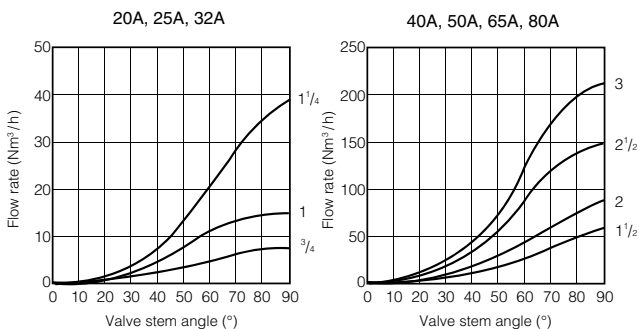
Model No.	CCM21C1310	CCM21C2310
Type	Adjustable type for open and closed positions	
Rotating angle adjustment (open/closed position END switch)	Closed position: 0 to 45°, open position: 45 to 90° (Factory default setting: closed position 0°, open position 90°)	
Power supply	100 Vac 50/60 Hz	200 Vac 50/60 Hz
Signal switch	Operating point Close signal: 1 to 9° outward from closed position Open signal: 1 to 9° inward from opened position	
Electrical rating	250 Vac, 5 A (resistive load)	
Control action	Proportioning or ON-OFF positioning	
Rotation angle and timing	Angle: 90°, time: 30 s (50 Hz), 25 s (60 Hz)	
Torque	Rating: 11.8 N·m (85% × rated voltage) Maximum: 14.7 N·m Hold: 49 to 11.8 N·m	
Potentiometer	Nominal resistance: 135 Ω (combination of 1 kΩ potentiometer and 180 Ω solid resistor, total resistance: 153 Ω) Maximum applied voltage: 5 Vdc	
Factory default output axis position	0° (closed valve position)	
Allowable supply power voltage	-15 to +10% of rated voltage	
Power consumption	7 VA	
Ambient temperature	For operation: -20 to +60 °C	For transport and storage (packaged): -20 to +70 °C
Ambient humidity	For operation: 5 to 90% RH	For transport and storage (packaged): 5 to 95% RH
Vibration resistance	For operation: 4.9 m/s <sup>2</sup> (10 to 150 Hz). For transport and storage (packaged): 19.6 m/s <sup>2</sup> (5 to 150 Hz)	
Impact resistance	For operation: 4.9 m/s <sup>2</sup> . For transport and storage (packaged): 294 m/s <sup>2</sup>	
Insulation resistance	Potentiometer signal terminals (4, 5, 6) and housing: 5 MΩ/500 Vdc Power terminals (1, 2, 3) and auxiliary switch terminals (8, 9, 10, 11, 12, 13) and housing: 20 MΩ/500 Vdc	
Dielectric strength	Potentiometer signal terminals (4, 5, 6) and housing: 500 V / leakage current 5 mA or less. Power terminals (1, 2, 3) and auxiliary switch terminals (8, 9, 10, 11, 12, 13) and housing: 1.5 kV / leakage current 5 mA or less	
Protective structure	Vertical output axis: IP54	
Mounting	Direct mounting on the CCV20 combustion control valve. Orientation: output shaft can be positioned within a 90° range from upright to horizontal	
Weight	1.6 kg	
Accessories	4 hexagon socket bolts for coupling motor and valve: M5 × 14	

### Combustion control valve

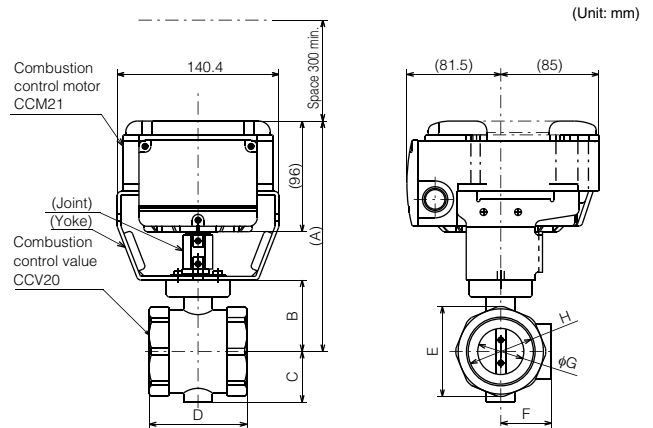
Model No.	CCV2020	CCV2025	CCV2032	CCV2040	CCV2050	CCV2065	CCV2080
Connection port (Rc)	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Flow factor (Cv)	5.9	12.4	31.7	45.5	74.1	120.3	174.9
Flow rate* (Nm <sup>3</sup> /h)	7.3	15.2	38.9	55.8	90.8	147.5	214.3
(Nm <sup>3</sup> /h)	0.5	0.5	0.7	1.0	2.0	3.0	4.0
Maximum applicable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

\*. Flow conditions of gas are at pressure differential ΔP = 250 Pa and specific gravity of 1.0 (air).

### Flow characteristics



## External dimensions



Combustion control valve	A	B	C	D	E	F	G	H
CCV2020	187	49	30	75	48	30	16	20A
CCV2025							22	25A
CCV2032							28	32A
CCV2040	195	57	37	80	64	37	32	40A
CCV2050	200	62	40	85	78	44	40	50A
CCV2065	208	70	50	95	95	55	50	65A
CCV2080	215	77	59	95	110	61	65	80A

## Model No. configuration

Name	Model No.
Combustion control motor	CCM21C1310
	CCM21C2310
Combustion control valve	CCV2020
	CCV2025
	CCV2032
	CCV2040
	CCV2050
	CCV2065
	CCV2080

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DIGITAL CONTROLLERS

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RECORDERS, INDICATORS

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CONVERTERS

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FLAME SAFEGUARD SYSTEM

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ACTUATORS

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SENSORS

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GAS FLOW MEASUREMENT AND CONTROL PRODUCTS