

Transducers

C series

C series transducers

■ Description

FUJI C series transducers are designed to convert various electrical characteristics of circuits into DC signals. Input and output circuits are isolated from each other. These transducers are ideal for handling the analog data input of microcomputer-incorporated control devices. Distorted waveforms from electronic power control devices can be accurately converted to DC signals with the innovative conversion methods used. (The r.m.s.-value method for voltage and current conversion, time-division multiplication for power conversion and differential method for frequency conversion.)

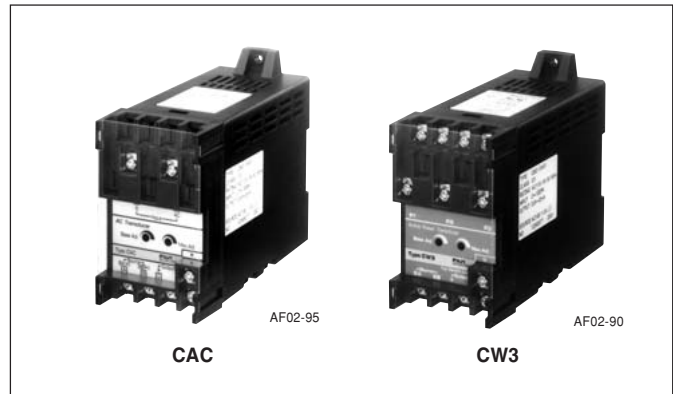
■ Features

- Superb-quality, high-reliability design
- Complete isolation between input and output
- Strong construction
- Provided with terminal protective covers

■ Specifications and types

• AC voltage and current transducers/CAC

Accuracy: 0.5%
 Response time: 1.3s or less
 Insulation resistance: 100M Ω , 500V megger
 Dielectric strength: 2000V AC, 1 min. between input and output circuits, between input circuit and power supply
 2000V AC, 1 min. between output circuit and power supply, output circuit and case (earth terminals)
 Ambient temperature and humidity: -10 to +50°C, 90% RH or less (no condensation)

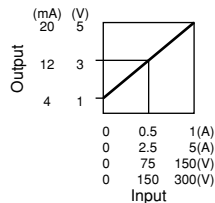


Input (AC)		Output (DC) (Load resistance)	Conversion method (▲)	Control (●) power supply	Type *
Voltage or current (□)	Power consumption				
AC voltage 0-150V 50/60Hz (150) 0-300V 50/60Hz (300)	0.45VA	1-5V (1k Ω or more) (A) 0-5V (1k Ω or more) (B) 0-10V (2k Ω or more) (C) 4-20mA (500 Ω or less) (H)	Effective value method (1) Mean value method (2)	100/110V AC 50/60Hz (1) or 200/220V AC 50/60Hz (2)	CAC-□■●▲1
AC current 0-1A (010) 0-5A (050)	0.1VA	1-5V (1k Ω or more) (A) 0-5V (1k Ω or more) (B) 0-10V (2k Ω or more) (C) 4-20mA (500 Ω or less) (H)	Effective value method (1) Mean value method (2)	Approx. power consumption 2VA	CAC-□■●▲1

Note: * Replace the marks □ ■ ● ▲ in the type number by codes indicated in parenthesis.

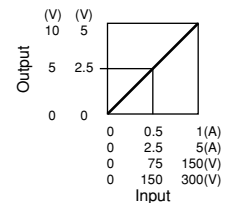
Input-output

Input	Output
0-1A	1-5V
0-5A	4-20mA
0-150V	
0-300V	



Input-output

Input	Output
0-1A	0-5V
0-5A	0-10V
0-150V	
0-300V	



• Frequency transducers/CF1

Accuracy: 0.5%

Response time: 1s or less

Insulation resistance: 100MΩ or more, 500V megger

Dielectric strength: 2000V AC, 1 min. between input and output circuits, between input circuit and power supply

2000V AC, 1 min. between output circuit and power supply, output circuit and case (earth terminals)

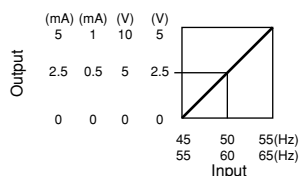
Ambient temperature and humidity: -10 to +50°C, 90% RH or less (no condensation)

Input		Output (DC) (Load resistance)	Control power supply	Type *
Voltage and frequency (□)	Power consumption		(●)	
110V 45Hz-110V 55Hz(115) 110V 55Hz-110V 65Hz(116) 220V 45Hz-220V 55Hz(225) 220V 55Hz-220V 65Hz(226)	0.3VA	1-5V (1kΩ or more) (A) 0-5V (1kΩ or more) (B) 0-10V (2kΩ or more) (C) 4-20mA (600Ω or less) (H) 0-1mA (10kΩ or less) (J) 0-5mA (2kΩ or less) (K)	100/110V AC 50/60Hz (1) or 200/220V AC 50/60Hz (2) 24V DC ±10% (3) None (9) Approx. power consumption 2.1VA	CF1-□■●

Note: * Replace the marks □ ■ ● ▲ in the type number by codes indicated in parenthesis.

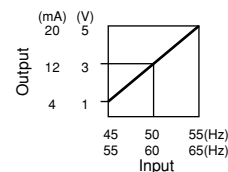
Input-output

Input	Output
45-55Hz	0-5V 0-10V
55-65Hz	0-1mA 0-5mA



Input-output

Input	Output
45-55Hz	1-5V 4-20mA
55-65Hz	



Transducers

C series

• Active and reactive power transducers/CW, CR

Accuracy: 0.5%

Response time: 0.5s or less

Insulation resistance: 100MΩ, 500V megger

Dielectric strength: 2000V AC, 1 min. between input and output circuits, between input circuit and power supply

2000V AC, 1 min. between output circuit and power supply, output circuit and case (earth terminals)

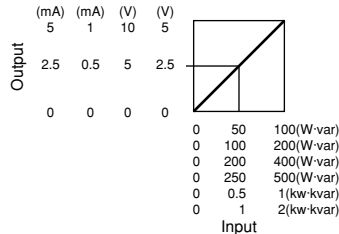
Ambient temperature and humidity: -10 to +50°C, 90% RH or less (no condensation)

Description		Input (AC)				Output (DC)		Control	Type *	
Active or reactive power	Circuit	Voltage	Current	Power (□)	Frequency (●)	Power consumption		Load resistance	power supply	
						Voltage	Current			
Active power	Single phase 2-wire	110V	1A	0-100W (11)	50Hz (5)	Approx. 0.35VA	Approx. 0.2VA	1-5V (A)	100/110V AC (1) 50/60Hz 200/220V AC (2) 50/60Hz	CW1-□■●▲
		110V	5A	0-500W (15)	or 60Hz (6)	(110V)	(5A)	0-5V (B)		
		220V	1A	0-200W (21)				(1kΩ or more)		
		220V	5A	0-1kW (25)				(1kΩ or more)		
								-5-0-+5V (S)		
								(1kΩ or more)		
	3-phase 3-wire	110V	1A	0-200W (11)	50Hz (5)	Approx. 2×0.35VA	Approx. 2×0.2VA	0-10V (C)	24V DC±10% (3) 110V DC±10% Except CW4(4) None (9)	CW3-□■●▲
		110V	5A	0-1kW (15)	or 60Hz (6)	(110V)	(5A)	(2kΩ or more)		
		220V	1A	0-400W (21)				4-20mA (H)		
		220V	5A	0-2kW (25)				(600Ω or less)		
								0-1mA (J)		
								(10kΩ or less)		
3-phase 4-wire	110V	1A	0-200W (11)	50Hz (5)	Approx. 3×0.35VA	Approx. 3×0.2VA	0-5mA (K)	Approx. power consumption CW1: 1.8VA CW3: 1.9VA CW4: 2VA	CW4-□■●▲	
	110V	5A	0-1kW (15)	or 60Hz (6)	(110V)	(5A)	(2kΩ or less)			
	220V	1A	0-400W (21)							
	220V	5A	0-2kW (25)							
Reactive power	Single phase 2-wire	110V	1A	0-100var (11)	50Hz (5)	Approx. 0.35VA	Approx. 0.2VA	1-5V (A)	100/110V AC (1) 50/60Hz 200/220V AC (2) 50/60Hz	CR1-□■●▲
		110V	5A	0-500var (15)	or 60Hz (6)	(110V)	(5A)	0-5V (B)		
		220V	1A	0-200var (21)				(1kΩ or more)		
		220V	5A	0-1kvar (25)				(1kΩ or more)		
								-5-0-+5V (S)		
								(1kΩ or more)		
	3-phase 3-wire	110V	1A	0-200var (11)	50Hz (5)	Approx. 2×0.35VA	Approx. 2×0.2VA	0-10V (C)	24V DC±10% (3) None (9)	CR3-□■●▲
		110V	5A	0-1kvar (15)	or 60Hz (6)	(110V)	(5A)	(2kΩ or more)		
		220V	1A	0-400var (21)				4-20mA (H)		
		220V	5A	0-2kvar (25)				(600Ω or less)		
								0-1mA (J)		
								(10kΩ or less)		
3-phase 4-wire	110V	1A	0-200var (11)	50Hz (5)	Approx. 3×0.35VA	Approx. 3×0.2VA	0-5mA (K)	Approx. power consumption CR1: 1.8VA CR3: 1.9VA CR4: 2.0VA	CR4-□■●▲	
	110V	5A	0-1kvar (15)	or 60Hz (6)	(110V)	(5A)	(2kΩ or less)			
	220V	1A	0-400var (21)							
	220V	5A	0-2kvar (25)							

Note: * Replace the marks □ ■ ● ▲ in the type number by codes indicated in parenthesis.

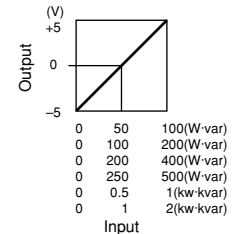
Input-output

Input	Output
0-100W·var	0-5V
0-200W·var	0-10V
0-400W·var	0-1mA
0-500W·var	0-5mA
0-1kW·kvar	
0-2kW·kvar	



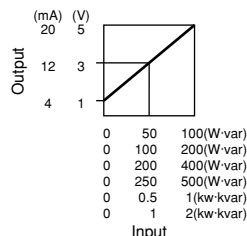
Input-output

Input	Output
0-100W·var	-5-0-+5V
0-200W·var	
0-400W·var	
0-500W·var	
0-1kW·kvar	
0-2kW·kvar	



Input-output

Input	Output
0-100W·var	1-5V
0-200W·var	4-20mA
0-400W·var	
0-500W·var	
0-1kW·kvar	
0-2kW·kvar	



• Power factor transducers/CC

Accuracy: 3.0%

Response time: 0.7s or less

Insulation resistance: 100MΩ or more, 500V megger

Dielectric strength: 2000V AC, 1 min. between input and output circuits, between input circuit and power supply

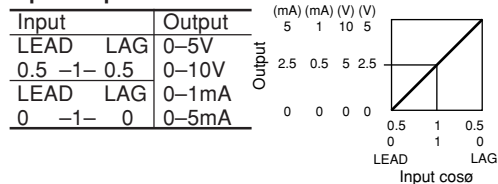
2000V AC, 1 min. between output circuit and power supply, output circuit and case (earth terminals)

Ambient temperature and humidity: -10 to +50°C, 90% RH or less (no condensation)

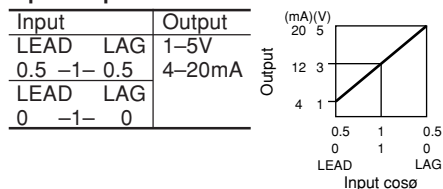
Description		Input (AC)				Output (DC)	Control	Type					
Power factor	Circuit	Voltage	Current (□)	Power factor (■)	Frequency	Load resistance (●)	power supply (▲)						
	Single phase 2-wire	110V	1A (11)	LEAD LAG 0.5 — 1 — 0.5 (5)	50/60Hz	1 – 5V (A) (1kΩ or more) 0 – 5V (B) (1 kΩ or more) – 5 – 0 – +5V (S) (1kΩ or more)	100/110V AC 50/60Hz (1) 200/220V AC 50/60Hz (2)	CC1-□■●▲					
		110V	5A (15)										
		220V	1A (21)	0 — 1 — 0 (0)					Approx. 0.35VA (110V) Approx. 0.25VA (5A)				
		220V	5A (25)										
		3-phase 3-wire	110V	1A (11)						Approx. 2×0.35VA (110V) Approx. 2×0.25VA (5A)	0 – 10V (C) (2kΩ or more)	24V DC±10% (3) None (9)	CC3-□■●▲
			110V	5A (15)									
	220V		1A (21)										
	220V		5A (25)										
	3-phase 4-wire	110V	1A (11)	Approx. 3×0.35VA (110V) Approx. 3×0.25VA (5A)		4 – 20mA (H) (600Ω or less) 0 – 1mA (J) (10kΩ or less) 0 – 5mA (K) (2kΩ or less)	Approx. power consumption 2.2VA	CC4-□■●▲					
		110V	5A (15)										
		220V	1A (21)										
		220V	5A (25)										

Note: * Replace the marks □ ■ ● ▲ in the type number by codes indicated in parenthesis.

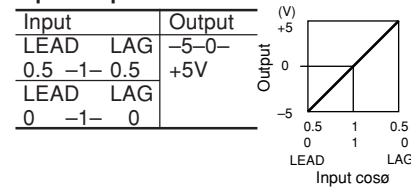
Input-output



Input-output



Input-output



Transducers

C series

• Phase angle transducers/CP

Accuracy: 3.0%

Response time: 0.7s or less

Insulation resistance: 100MΩ or more, 500V megger

Dielectric strength: 2000V AC, 1 min. between input and output circuits, between input circuit and power supply

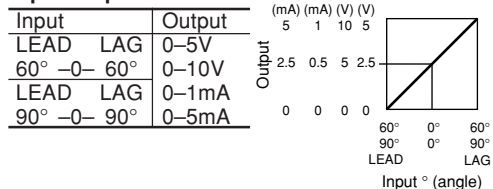
2000V AC, 1 min. between output circuit and power supply, output circuit and case (earth terminals)

Ambient temperature and humidity: -10 to +50°C, 90% RH or less (no condensation)

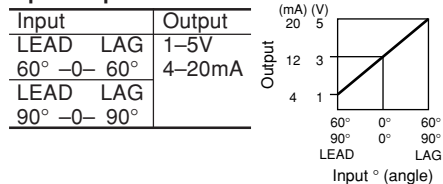
Description		Input (AC)				Output (DC) (●)	Control (▲)	Type
Phase angle	Circuit	Voltage	Current (□)	Phase angle (■)	Frequency	Load resistance	power supply	
Single phase 2-wire	110V 1A (11) 110V 5A (15)	220V 1A (21) 220V 5A (25)	LEAD LAG 60° — 0 — 60° (6)	50/60Hz	Approx. 0.35VA (110V) Approx. 0.25VA (5A)	1 – 5V (A) (1kΩ or more)	100/110V AC (1) 50/60Hz	CP1-□■●▲
	0 – 5V (B) (1kΩ or more)					200/220V AC (2) 50/60Hz		
3-phase 3-wire	110V 1A (11) 110V 5A (15)	220V 1A (21) 220V 5A (25)	90° — 0 — 90° (9)	50/60Hz	Approx. 2×0.35VA (110V) Approx. 2×0.25VA (5A)	0 – 10V (C) (2kΩ or more)	24V DC±10% (3)	CP3-□■●▲
	4 – 20mA (H) (600Ω or less)					None (9)		
3-phase 4-wire	110V 1A (11) 110V 5A (15)	220V 1A (21) 220V 5A (25)	90° — 0 — 90° (9)	50/60Hz	Approx. 3×0.35VA (110V) Approx. 3×0.25VA (5A)	0 – 1mA (J) (10kΩ or less)	Approx. power consumption 2.2VA	CP4-□■●▲
	0 – 5mA (K) (2kΩ or less)							

Note: * Replace the marks □ ■ ● ▲ in the type number by codes indicated in parenthesis.

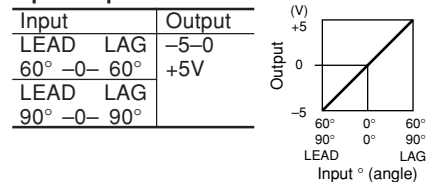
Input-output



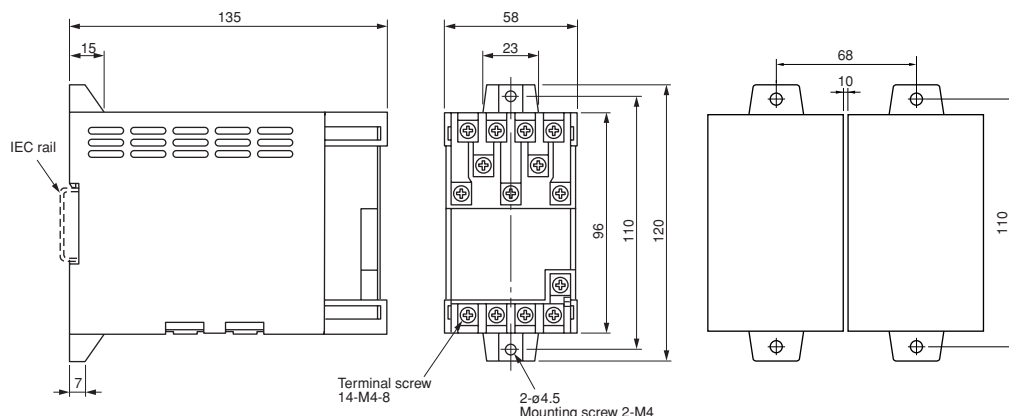
Input-output



Input-output



■ Dimensions, mm

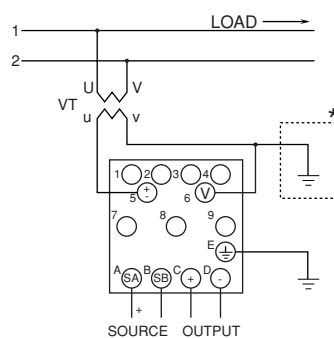


■ Mass

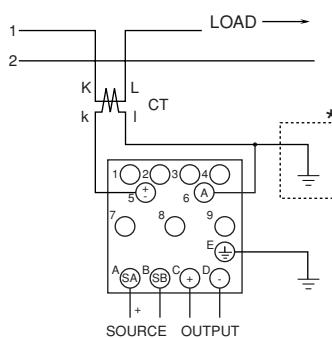
Type	Mass
CAC	0.3kg
CW1, CW3, CW4	0.5kg
CR1, CR3, CR4	0.5kg
CF1	0.4kg
CC1	0.5kg
CC3, CC4	0.55kg
CP1	0.5kg
CP3, CP4	0.55kg

■ Wiring diagrams

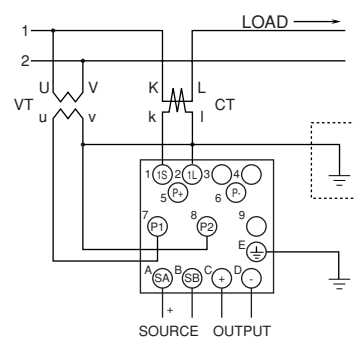
CAC (Voltage input), CF1



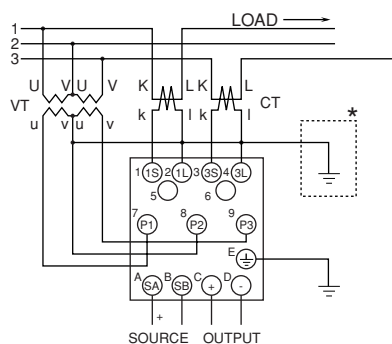
CAC (Current input)



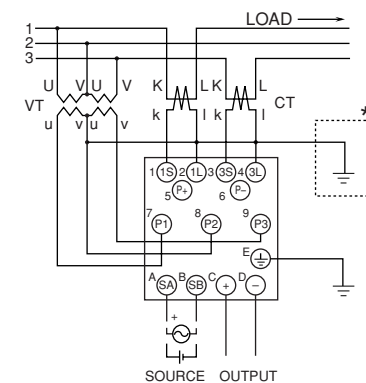
CW1, CR1, CC1, CP1



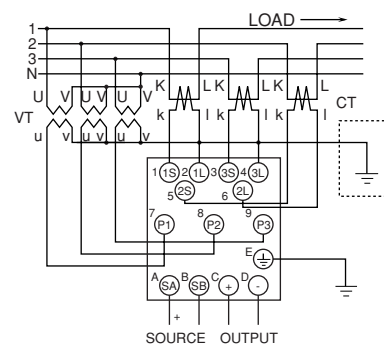
CR3, CC3, CP3 (3-phase, 3-wire)



CW3 (3-phase, 3-wire)



CR4, CC4, CP4, CW4 (3-phase, 4-wire)



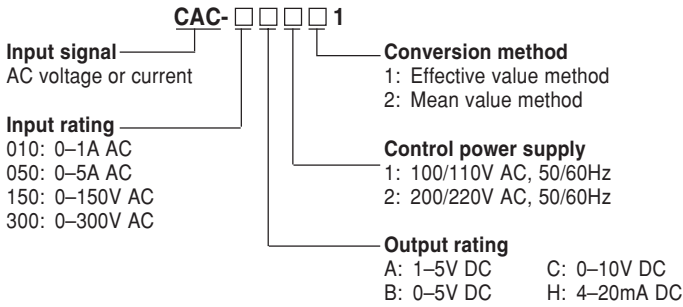
Note: * Never ground when VT and CT are not used.

Transducers

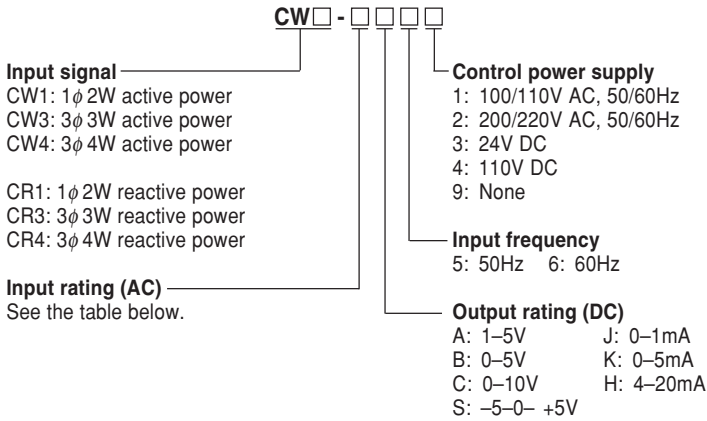
C series

■ Type number nomenclature

• AC voltage and current transducers



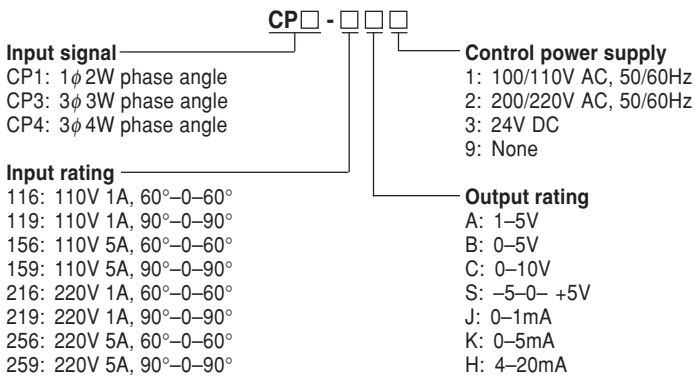
• Active and reactive power transducers



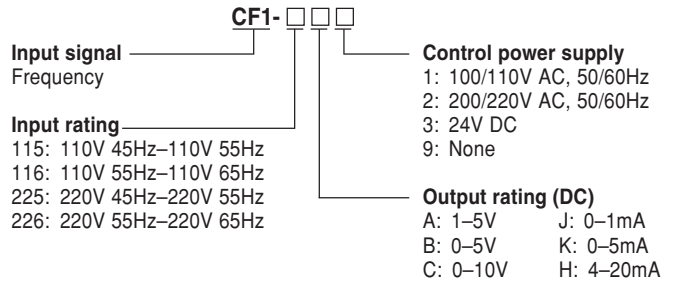
Input ratings (AC)

Code	Voltage (V)	Current (A)	Active power (W)		Reactive power (var)	
			1φ	3φ 3W 3φ 4W (CW1) (CW3, CW4)	1φ	3φ 3W 3φ 4W (CR1) (CR3, CR4)
11	110	1	100	200	100	200
15	110	5	500	1000	500	1000
21	220	1	200	400	200	400
25	220	5	1000	2000	1000	2000

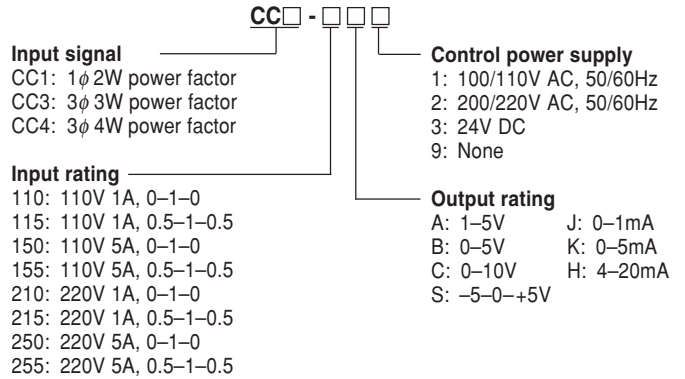
• Phase angle input transducers



• Frequency transducers



• Power factor transducers



■ Ordering information

Specify the following:

1. Type number
2. 3-phase or single-phase circuit