

# FC SERIES ADDER

DATA SHEET

PRB

The FC SERIES adder is capable of performing addition and subtraction with up to four wafers. Regarding arithmetic functions, this adder is capable of performing not only addition and subtraction but also ratio calculation, parallel transmission and signal selection by use of wafers as described herein.

## SPECIFICATIONS

Input wafers:

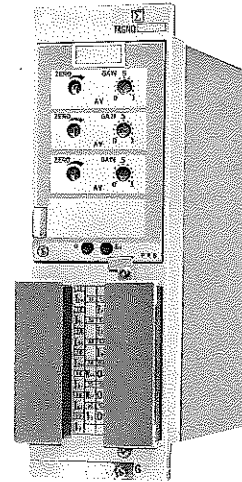
Code	Wafer	Remarks
A	$\pm AV$	Multiplication of ratio
B	$\pm B$	Voltage
C	$\pm A (V-B)$	To multiply ratio with base shifted
D	$\pm V$	To set ratio to 1
E	$\pm A (V_1-V_2)$	To multiply difference between two inputs by ratio
F	$\pm Kp (V_1-V_2)$	To multiply difference between two inputs by ratio
G	$\pm \text{Min} (V_1, V_2)$	To select smaller one of two input signals
H	$\pm \text{Max} (V_1, V_2)$	To select larger one of two input signals
J	$\pm \text{Min} (V, B)$	To set upper limit
K	$\pm \text{Max} (V, B)$	To set lower limit
L	$\pm \text{Min} [A (V-B), 0]$	To select negative signal of code C
M	$\pm \text{Max} [A (V-B), 0]$	To select positive signal of code C

Note: All setting functions are executed by the built-in setting unit.

Code	Setting range
A	0 to 1
	* 0.5 to 1.5
	* 1 to 2
Kp	0 to 10
B	0 to 100%

Note:  
Contact the FUJI dealer in case "A" exceeds 2.

**Operation mode:** As long as the number of wafers is within four, any combination of wafers is possible. Signal selection for maximum value of eight inputs is also available on request.



**Allowance:**  $\pm 0.5\%$  of full span  
 $\pm 0.25\%$  of full span is provided when specified, except when "F" wafer is used and "A" exceeds 1).  
 With F wafer  
 $\pm 0.5\%$  of full span when  $Kp \leq 1$   
 $\pm (0.4 + Kp \times 0.1)\%$  of full span when  $Kp > 1$   
 $\pm 0.25\%$  of full span when  $Kp \leq 1$  (if specified)  
 $\pm (0.15 + Kp \times 0.1)\%$  of full span when  $Kp > 1$  (if specified)

**Reproducibility:** Better than  $\pm 0.1\%$

**Input signal and input resistance:**

DC 1 to 5V (bias current: less than  $1\mu A$ )

Note: When power supply interrupted .....  $33k\Omega$  or more

It is possible to open the input circuit during power supply interruption if specified.

DC 4 to 20mA ( $250\Omega$ )

**Output signal:** DC 1 to 5V

**Output resistance:**

Less than  $0.5\Omega$

**Response time:** Less than 0.1 sec (input part provided with 33 msec filter)

**Power supply:** DC 24V (DC 20 to 30V) or

AC 24V  $\begin{matrix} +13 \\ -10 \end{matrix} \%$  50/60 Hz

**Power consumption:**

Approx. 2W (DC 24V)  
Approx. 4VA (AC 24V)

**Ambient temperature:**

0 to 45°C

**Ambient humidity:**

90% RH (max)

**Enclosure:** Steel case

**Dimensions (HxWxD):**

247x74x225 mm

**Weight:** Approx. 1.5 kg

**Finish color:** Case; Silver (melamine baking)  
Terminal cover; Gray (molded synthetic resin)

**Mounting method:**

Rack mounting

**Range of delivery:**

Adder

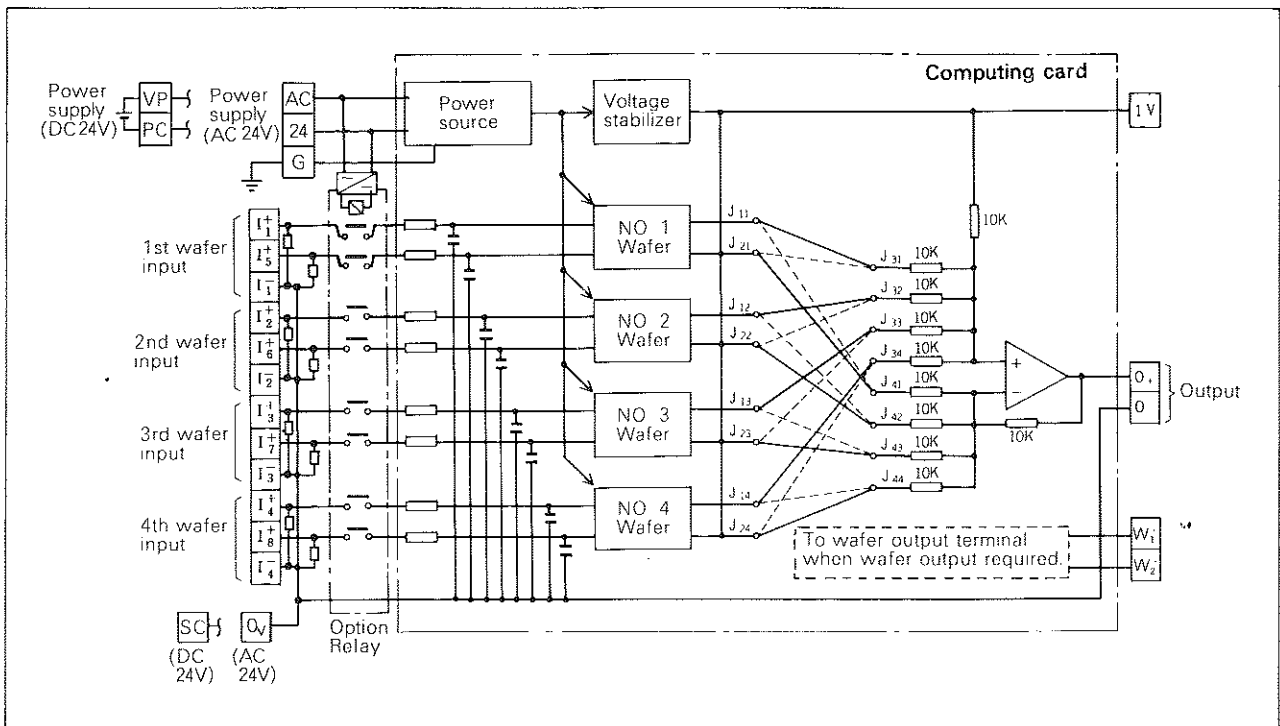
**CODE SYMBOLS**

		1	2	3	4	5	6	7	8	9	10	11	12	13	Description		
P	R	B				5	-	0							<b>Type of input wafer ★</b>		
															±AV		
															±B		
															±A (V-B)		
															±V		
															±A (V <sub>1</sub> -V <sub>2</sub> )		
															±Kp (V <sub>1</sub> -V <sub>2</sub> )		
															±Min (V <sub>1</sub> , V <sub>2</sub> )		
															±Max (V <sub>1</sub> , V <sub>2</sub> )		
															±Min (V, B)		
															±Max (V, B)		
															±Min [A-(V-B), 0]		
															±Max [A-(V-B), 0]		
															<b>Accuracy</b>		
															1	±0.5%	
															* 2	±0.25%	
																<b>Application</b>	
																0	General use
																	<b>Input signal ☆</b>
																1	DC 1 to 5V
																2	DC 4 to 20mA
																4	DC 1 to 5V, option relay provided
																5	DC 4 to 20mA, option relay provided
																	<b>Connection with controller</b>
																Y	For general calculations
																C	For feed forward calculation
																	<b>Power supply</b>
																1	DC 24V
																7	AC 24V 50/60 Hz

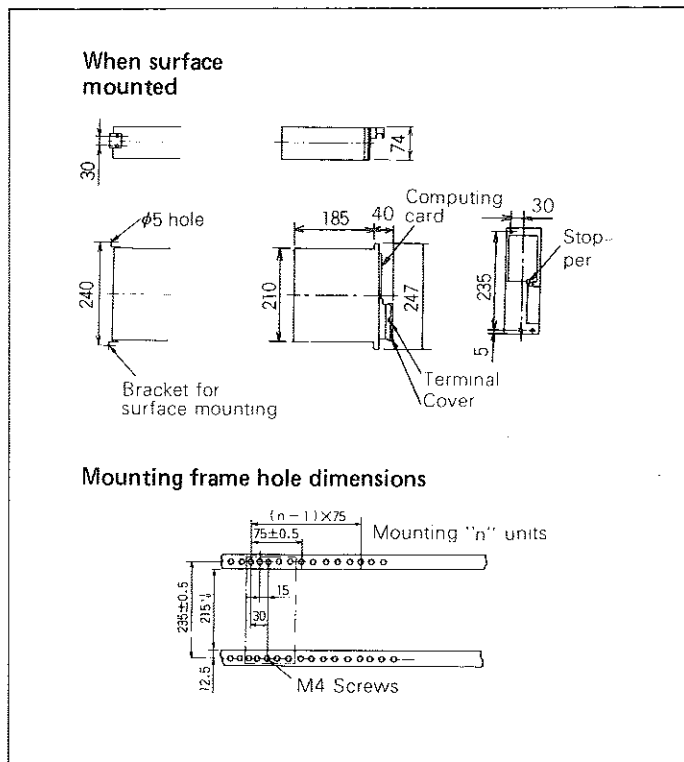
Note: ★ Insert "Y" in the place where the wafer is not needed.

☆ Input for each wafer in one adder should be unified in type.

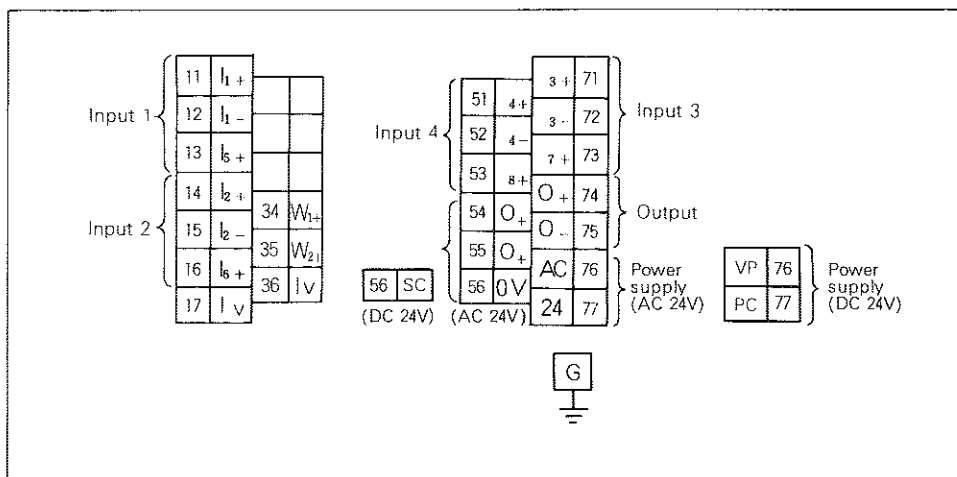
**BASIC CIRCUIT DIAGRAM**



## OUTLINE DIAGRAM (Unit:mm)



## CONNECTION DIAGRAM



## ORDERING INFORMATION

1. Product name
2. Code symbols
3. Specifications of arithmetic operations
4. Input specifications
5. Instrument specifications
6. Other