

Digital Mass Flow Controller/Mass Flow Meter with Indicator

# MODEL D8500 SERIES

Based on Model 8500, this was digitalized and upgraded. Being improved the operability of the indicator and installed various functions.



- High performance by installing CPU.
- Common-use communication function is equipped as standard.
- Single power supply voltage 24 VDC drive.
- Improved operability by added key button.
- Installed auto-zero function.
- Ideal for mounting in laboratory equipment.

### Standard Specifications

Flow range (N <sub>2</sub> gas calibration condition)	50SCCM-5SLM	Over 5SLM-20SLM
Applicable gases (dry gas)	N <sub>2</sub> , Air, O <sub>2</sub> , CO <sub>2</sub> , Ar, H <sub>2</sub> , He, etc.	
Sensor	Thermal mass flow sensor	
Valve (*1)	Normally-closed solenoid valve	
Control/measurement range	2-100% F.S.	
Response (*2)	0 to less than 10% F.S. within 4 seconds 0 to more than 10% F.S. within 2 seconds	
Accuracy (*3)	±1.0% F.S.	±1.5%F.S.
Temperature characteristics	0.2% F.S./°C (15-35°C)	
Repeatability	±0.75%F.S.	
Proof pressure	1000kPa (G)	
Allowable operating pressure	500kPa(G) or less	
Operating differential pressure (*1)	50-300kPa	100-300kPa
Allowable operating temperature	5-45°C	
Allowable operating humidity	10-90%RH (No condensation allowed)	
He leak rate (*4)	1×10 <sup>-8</sup> Pa · m <sup>3</sup> /sec. or less	
Flow setting method	Digital	(1) Setting & display unit (2) Communication (3)Event input selection
	Analog (*7)	0-5VDC (2) 4-20mA (freely selectable)
Flow rate output	Analog	0-5VDC (2) 4-20mA (interlocked with the above)

Display	Display format	7-segment 4-digit LED
	Total flow (*5)	12 digits
	Mounting direction	Changeable
	Built-in/Separate	Built-in, Separate 1m, Separate 3m, Separate 5m
Other I/O functions	Status display LED	Ok (within allowable range), ALM (alarm output interlock), OUT1 (event output 1 interlock), OUT2 (event output 2 interlock), SV (set flow), PV (instantaneous flow), TF (total flow), IF (mode setting)
	Event Input	3 x contact input
	Alarm Output	1 x open collector output, Max. 35V, 50mA
	Event output	2 x open collector output, Max. 35V, 50mA
Power supply	Communications	RS-485, half-duplex, 9600bps
	Rating	24VDC, current consumption: 300mA max.
Mounting position	Allowable supply voltage range	21.6-26.4VDC (Ripple: 5% or less)
	Mounting position	Not specified
Applicable standards	RoHS and EN62326-1: 2006	
Materials of parts in contact with gases	SUS316, SUS316L, SUS430, FKM, PTFE, chloroprene rubber (option)	
Joint	1/4SWL type (standard), 1/4VCR type, RC1/4	
Weight	Built-in: Approx. 1000g Separate (excluding the cable): Approx. 1200g (*6)	

(\*1) These apply to the D8500MC mass flow controller

(\*2) Time required to reach the control flow ±2%F.S. from the fully closed state

(\*3) With the standard pressure of 200kPa(G) and the standard temperature of 20°C

(\*4) Permeation is not included. The leakage by prolonged permeation shall not exceed 1x10<sup>-6</sup>Pa/m<sup>3</sup>/sec

(\*5) The units of measurement vary with the full scale flow. E.g.: With 1SLM, the flows can be added to 9999 999 9.999L

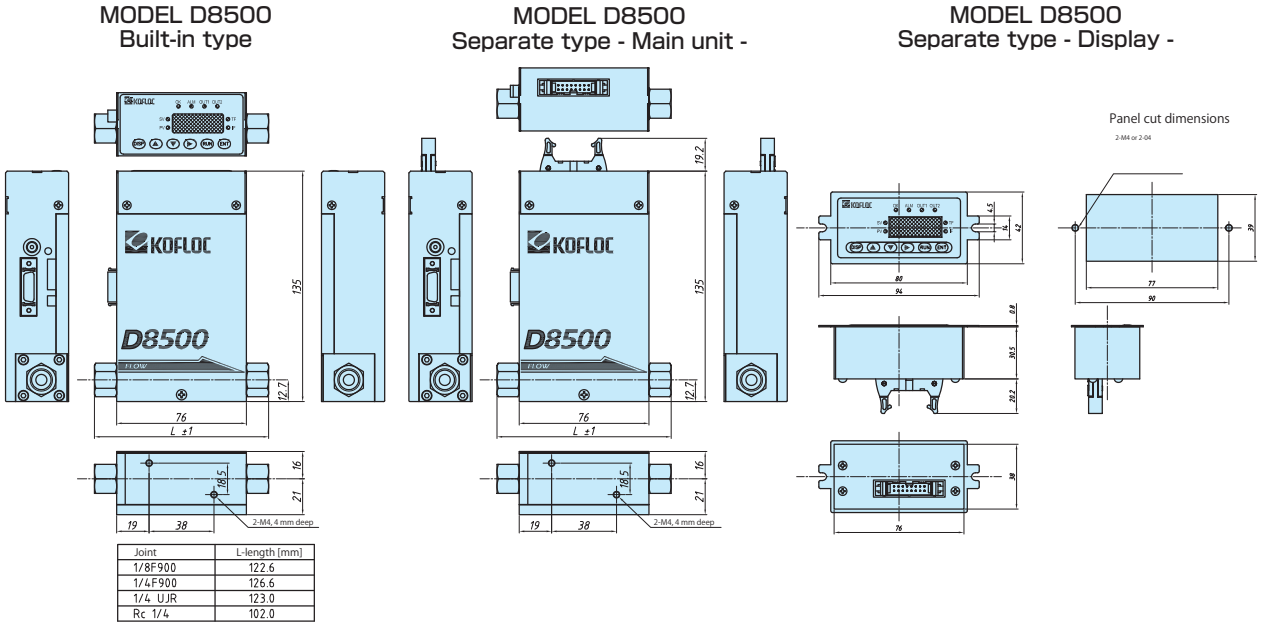
(\*6) For other joints, please contact us.

(\*7) The weight may slightly vary depending on the joint

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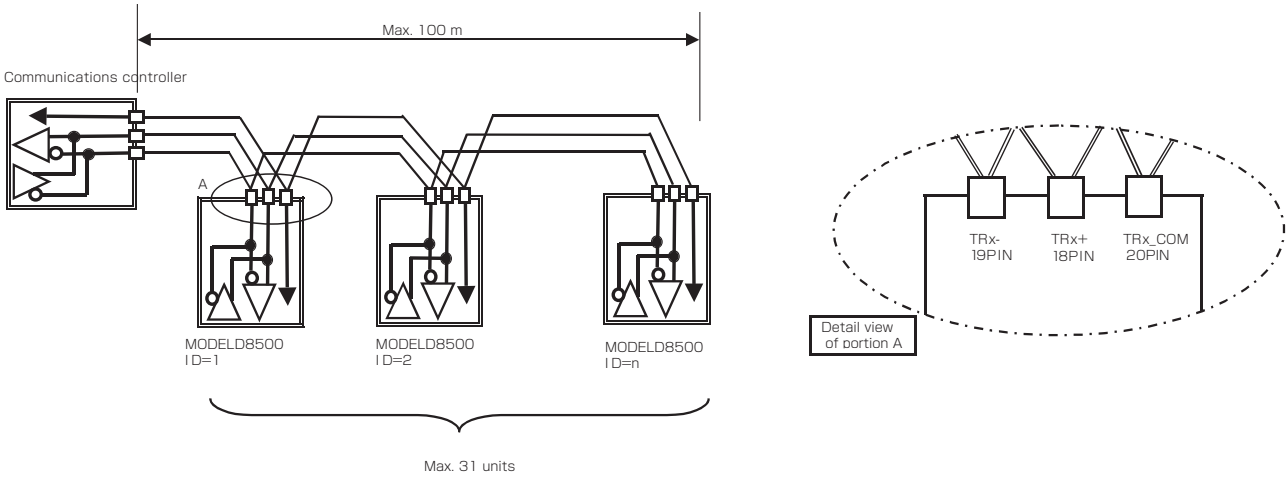
Mass flow meters and Controllers

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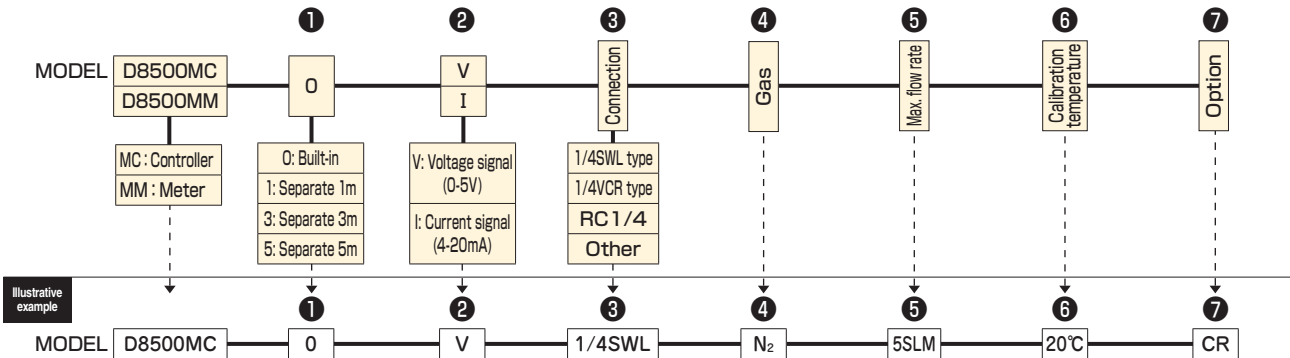


**Example of RS-485 Communications line configuration**

Example of communications system configuration with Model D8500  
 On a single logging PC, logging and operation of up to 31 units are possible.  
 (A communications terminal resistor is provided, which can be turned on and off.)



**Ordering**



\* Please see P55 for the cable, CP-STD6 and power cable, PSK-85.