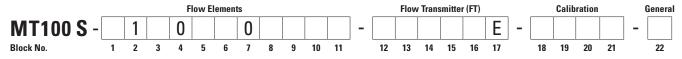
#### FLUID COMPONENTS INTERNATIONAL LLC

1755 La Costa Meadows Drive | San Marcos, California 92078 USA 760-744-6950 Toll Free (US): 800-854-1993 www.FluidComponents.com

### Order Information Sheet (OIS)

# MT100 S

## **Multipoint Insertion Air/Gas Mass Flow Meter**



INSTRUCTIONS: To order an MT100 S, please fill in each numbered block above by selecting required codes from the corresponding categories below. Use of any "W" or "\*" Codes requires prior approval from FCI. For special data, documentation, test reports or required quality reports, refer to FCI's Engineering and Quality Assurance Order Information Sheets (OIS).

Flow Elem	ent			P	Code BLOCK 7	Code BLOCK 8	Code BLOCK 9	Code BLOCK 1	BLOCK		
Code	[BLOCK 1]	Number of Flow Elen	ent Assemblies		0	0	6	0	• 		ch to 6 inch [25 mm to 152 mm]
1 to 8	Specify n	umber of probe assembl	ies		0	1	2	0		•	ch to 12 inch [25 mm to 305 mm]
Code	[BLOCK 2]	Number of Sensor Po	ints per Assembly		0	2	1	0	Variable	length: 1 inc	ch to 21 inch [25 mm to 533 mm]
1	Block 2 (	ode is always "1" with I	 MT100.S		0	3	6	0	Variable	length: 1 inc	ch to 36 inch [25 mm to 914 mm]
	Code		] Flow Element: Temperature Servi	ce	0	6	0	0	Variable	length: 1 inc	ch to 60 inch [25 mm to 1524 mm]
	0000		Materials of Construction	,	0						Code Y or F in Block 5) or custom
500°F	850°F										req'd length to 0.1 inch ximum length is 99.9 inches
[260°C]	[454°C]				Code	[BLOCK 11	1 Pine M	lounting a	nd Flow Di	rection	5
5	<b>6</b> <sup>1</sup>	, .	nless steel			-					
E	<b>F</b> <sup>1</sup>	-FP style; Hastello			A				right-to-lef		
2	31	-FPC style; 316L stai			B Horizontal, all assemblies with left-to-right flow						
8	<b>9</b> <sup>1</sup>		nless steel		C			semblies v	vith right-to	-left flow, a	and half with left-to-right flow
w	<b>W</b> <sup>1</sup>	Other, agency approve			D	Vertical up					
*	*1	Other, not agency app	roved		E	Vertical de					
Code	[BLOCK 4]				W	Uther, age	ency approv	ved			
0	Block 4 C	ode is always "0"									(continued next page)
Code	Code	[BLOCKS 5-6]									
BLOCK 5	BLOCK 6	Process Connections		Т	Table A –	Flange [ BLC	DCK 6]				
Compressi	on Fitting, T	eflon Ferrule <sup>3</sup>			<b>CS</b> <sup>15</sup>	316L SS	Hast C	Material			
C	0	3/4 inch, male NPT <sup>4</sup>			D	1	C	ANSI		150 lb	
D	0	1 inch, male NPT <sup>4</sup>			E	A	G	ANSI		300 lb	
G	Table A		readed for 3/4 inch fitting <sup>15</sup>		F K	2 B	H J		,=	150 lb 300 lb	
Compressi	on Fitting, N		rule permanent locks after tightening		P	3	M		2 inch	150 lb	
M	0	3/4 inch, male NPT <sup>4</sup>			R	L	N		2 inch	300 lb	
N		1 inch, male NPT <sup>4</sup>	1. 1			т		DIN	DN25	PN40	
J	Table A		readed for 3/4 inch fitting <sup>15</sup>			v			DN40	PN40	
	-	land, Low Pressure; 50				6			DN50	PN16	
P	0	1 1/4 inch, male NPT;	graphite packing			Y W			DN50	PN40	_
H Q	0 Table A	1 1/4 inch, male NPT; Flange <sup>5, 15</sup> ;	Teflon packing			VV		ULNE	er, agency a	ipproved	
ĸ	Table A	Flange <sup>5, 15</sup> ;	graphite packing Teflon packing								
	1	land, Medium Pressure;			Votes						
R		1 1/4 inch, male NPT;	graphite packing	1							ixed flanged of 1 inch
L	0	1 1/4 inch, male NPT;	Teflon packing								e not valid. Process , Block 6 cannot be
Т	Table A	Flange <sup>5, 15</sup> ;	graphite packing								14, Code 1, 2, 3, or 4) is
v	Table A	Flange <sup>5, 15</sup> ;	Teflon packing			nmended.	0 01 11 000		juonotou or	1010 (2100)	,
Fixed	I			2	2. Teflor bromi		terial must	be ordere	d when the	process me	dia is ozone, chlorine or
Y	0	1 inch, male NPT					imum :- 000		150	0 hox/11 **	atal famula mavimum in
F	Table A	able A       Flange <sup>15</sup> 3. Teflon ferrule maximum is 200 °F [93 °C], 150 psig [10 bar (g)]. Metal ferrule maximum is 500 °F [260 °C], 1000 psig [69 bar (g)].			etai ierrule maximum is						
Other or Sp				4	4S style sensor is retractable (will recess) into both 3/4 inch and 1 inch NPTFP and -FPC						
w	W         W         Other, agency approved           *         *         Other, not agency approved				style sensor is retractable (will recess) into 1 inch NPT only.						
*				5	5. Minimum flange size is 1 1/2 inches or DN40.						

15. Cannot select carbon steel flange when Hastelloy type flow element is selected in Block 3.

Code		
Code	[BLOCK 12] Local Enclosure – Sensors Termination	
6 F	Aluminum IP67; NPT cable entries <sup>6</sup> ; Div 1/Zone 1 rated	
-	Aluminum IP67; metric cable entries <sup>6</sup> ; Div 1/Zone 1 rated Stainless steel IP67: NPT cable entries <sup>6</sup> : Div 1/Zone 1 rated	
8 P	Stainless steel IP67; NPT cable entries <sup>6</sup> ; Div 1/Zone 1 rated	
W		
	Other, agency approved	
Code	[BLOCK 13] Remote Enclosure – Transmitter and Electronics Housing	
Α	Standard stainless steel rectangular wall-mount box; NEMA 4X/IP66 rated; NPT conduit ports; Div 2/Zone 2 rated	
В	Standard stainless steel rectangular wall-mount box; NEMA 4X/IP66 rated; metri conduit ports; Div 2/Zone 2 rated	
W	Other, agency approved	
Code	[BLOCK 14] Interconnecting Cable Length for Remote Configuration	
0	Not required Specify with user supplied cable or if cable ordered as separate line item <sup>7,1</sup>	
Α	10 feet [3 meters] PVC jacketed; fully prepped, wires marked <sup>8</sup>	
В	25 feet [7,6 meters] PVC jacketed; fully prepped, wires marked <sup>8</sup>	
C	50 feet [15 meters] PVC jacketed; fully prepped, wires marked <sup>8</sup>	
D	100 feet [30 meters] PVC jacketed; fully prepped, wires marked <sup>8</sup>	
1	10 feet [3 meters] Teflon jacketed; fully prepped, wires marked <sup>8</sup>	
2	25 feet [7,6 meters] Teflon jacketed; fully prepped, wires marked <sup>8</sup>	
3	50 feet [15 meters] Teflon jacketed; fully prepped, wires marked <sup>8</sup>	
4	100 feet [30 meters] Teflon jacketed; fully prepped, wires marked <sup>8</sup>	
W	Other, agency approved	
*	Other, not agency approved	
Code	[BLOCK 15] Power Supply, Readout, Transmitter	
Α	24 Vdc power; no display	
В	24 Vdc power; with display	
F	24 Vdc power; with display; with CEMS protocol	
К	24 Vdc power; with display; with QAL1 protocol pending	
C	85 Vac to 265 Vac power; no display	
D	85 Vac to 265 Vac power; with display	
Н	85 Vac to 265 Vac power; with display; with CEMS protocol	
М	85 Vac to 265 Vac power; with display; with QAL1 protocol (pending)	
W	Other, agency approved	
*	Other, not agency approved	
Code	[BLOCK 16] Transmitter Outputs and Communications	
1	(2) 4-20 mA analog outputs, HART and Modbus 485, (1) frequency/pulse output	
F	(2) 4-20 mA analog outputs, Foundation <sup><math>M</math></sup> Fieldbus, (1) frequency/pulse output	
Р	(2) 4-20 mA analog outputs, PROFIBUS-PA, (1) frequency/pulse output	
W	Other, agency approved	
*	Other, not agency approved	
Code	[BLOCK 17]	

#### Calibration 10, 11, 12

Code	[BLOCK 18] Calibration Application					
Т	Air; flat profile calibration					
C Air equivalency (digester gas, chlorine, flue gas, etc.)						
E	Nitrogen, helium, argon, carbon dioxide or nitrous oxide					
1	Natural gas (90% or greater methane content)					
<ul><li>F Hydrocarbons (methane, ethane, propane, etc.)</li><li>G Hydrogen or hydrogen mixture</li></ul>						
			<b>W</b> <sup>13</sup>	Agency approved, customer specified		
Code	[BLOCK 19] Calibrations, Set-up and Conditions					
0	None					
A Extended temperature compensation						
В	Extended range (>100:1 turndown)					
E						
Code						
0 0	Not required					
	Select from Codes shown in Blocks 18-19					

#### General

Code	[BLOCK 22] Agency Approvals		
0	0 General purpose, CE marking		
1	FM, Div/Zone per Blocks 12 and 13, CE marking		
2	FMc, Div/Zone per Blocks 12 and 13, CE marking		
3	ATEX, Div/Zone per Blocks 12 and 13, CE marking <sup>16</sup>		
4	<ul> <li>IECEx, Div/Zone per Blocks 12 and 13, CE marking<sup>16</sup></li> <li>EAC/TR CU, Zone 2, CE marking</li> </ul>		
5			
9	CCoE (India), Div/Zone per Blocks 12 and 13, CE marking		

#### Notes

 Local enclosure (attached to flow elements) conduit ports vary by process connection selected:

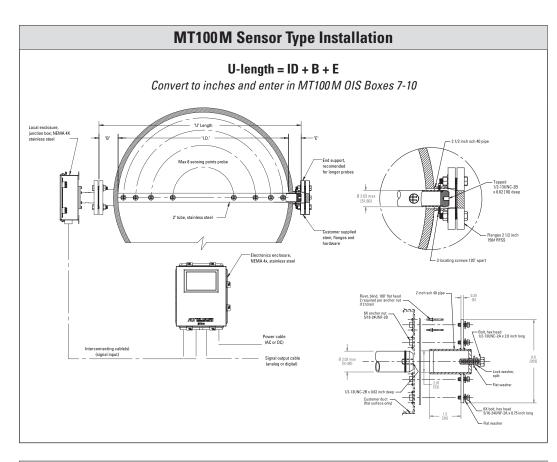
When Block 5, Process Connection is	<u>NPT</u>	Metric
Code = C, D, G, M, N, J, F*	(2) 1/2"	(2) M20 x 1.5
Code = P, H, Q, K, R, L, T, V, Y, F**	(1) 1 "	(1) M20 x 1.5

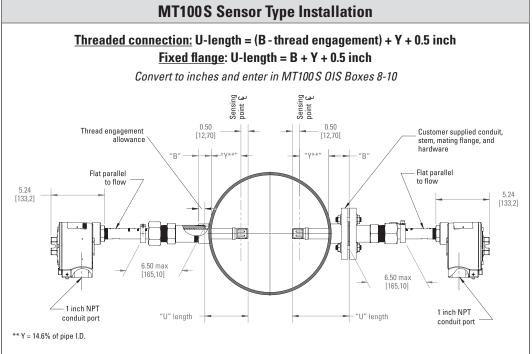
- \* with 1" or DN25 flange
- \*\* with flange size larger than 1" or DN25
- 7. Remote cable in an MT100S is 8-conductor. For user-supplied cable, overall shielded conductor type is required and wire resistance must be less than 8 Ohms.
- Cable suitable for conduit and some cable gland systems. For other cable gland systems, contact FCl to supply separately. PVC cable maximum temperature 176 °F [80 °C]; Teflon cable maximum temperature 392 °F [200 °C].
- 10. FCI standard conditions are 14.7 psia [1,01 bar(a)] and 70 °F [21.1 °C].
- 11. Calibration codes must be selected using FCI's proprietary AVAL application evaluation software.
- Transmitter setup, changes to factory supplied standard settings, verification or modification to calibration parameters or diagnostics requires external source communication with the transmitter.
- 13. Customer specified calibration must not exceed temperature and pressure limitations of the MT100 Series product specifications.
- 16. ATEX/IECEx rated requires cable glands or conduit fittings which meet or exceed the installation area's required rating. When rated cable glands, armored cables and nonarmored cable supplied are user supplied or ordered separately, enter Code 0 in Block 14.



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# Application Data Sheet (ADS) MT100 Series Insertion Multi-Point Mass Flow Meter





- ID = Inside diameter of pipe (or duct)
- B = Distance from process connection to pipe inside wall; if a threaded process connection is used, reduce "B" by the engagement allowance

#### For MT100M sensor types only

E = Additional flow element length to provide for optional end support

Required installation dimensions		
ID =		
B =		
E =		
Wall thickness =		

#### For MT100S sensor types only

- Y = Distance from inside pipe/duct wall to sensing point
- If round pipe/duct,
   Y = 0.146 x ID
- If square pipe/duct, consult factory or use FCI's AVAL program to calculate Y

For 36" or larger diameter pipes, 3- or 4-point configurations are recommended; use the same factor for calculating "Y," and space the flow elements evenly around the pipe circumference (120° or 90° apart, respectively)

Customer Information					
Customer Name:	P.O. No.: Customer Order No.:				
Address:	Model Number Ordered				
	MT100M - 0				
Contact Name:	MT100S - 1 0 0 E				
Phone: Fax:	Tag				
Email:	Number				
Process Details	Instrument Details				
If more than one (1) calibration is required, provide <i>Process Details</i> for each	Flow Element Mounting/Flow Direction				
calibration – attach additional sheet(s) as needed.	Horizontal Pipe Vertical Pipe				
Application Description	Horizontal pipe; all assemblies with right to Vertical pipe; flow up				
Describe type of application (example: stack, boiler air feed, HVAC duct, etc.):	Horizontal pipe; all assemblies with left to right flow				
Process Media	Horizontal ; half of assemblies with right to     Horizontal ; half of assemblies with right to     Ieft flow, and half with left to right flow				
Include gas name and percent composition by volume (moles) or weight (mass).	Transmitter Setup				
Please attach a gas composition list or fill in composition below. Total composi- tion must add up to 100%.	Input Power: 115 Vac 230 Vac 24 Vdc				
Gas Components: 🗌 % Volume (moles) 🗍 % Weight (mass)	CEMS Protocol				
· · · · · · · · · · · · · · · · · · ·	Analog Signal         Output 1         Output 2           Outputs         4-20 mA         4-20 mA				
%	Parameter: Flow (default) Temp. (default)				
% بر	Temperature Flow				
%	Eng. Units:				
%	Full Scale:         20 mA =         20 mA =				
%	Signal Output 3 Frequency/Pulse Output: 0-1 kHz (default) 0-10 kHz				
Process Conditions	Set as: 1 pulse per flow engineering unit				
Normal Minimum Maximum Engineering Units	<ul> <li>Full scale frequency output proportional to full scale flow rate</li> <li>Other:</li></ul>				
Flow Rate:	Bus Communications I/O				
Pressure:	Include Active Choose one only				
Required Dimensions (Include units of measure – inches, mm, etc.)	HART (included on output 1)				
1. Pipe Size: or Duct Size:	Modbus 485 (included)				
a) Outside Diameter: Height:	Foundation™ Fieldbus H1 (no analog outputs)				
b) Inside Diameter: Width:	PROFIBUS PA (no analog outputs)				
2. Piping:	Other:				
Wall thickness:	Standard Temperature and Pressure				
Cross section geometry:	70 °F and 14.7 psia [21,1 °C and 1,013 bar(a)] is the factory calibration default for standard temperature and pressure unless otherwise indicated below.				
3. Length of mounting adapter/coupling from outside pipe surface:	O°C and 1013,25 mBar(a) <u>Temperature</u> <u>Pressure</u>				
4. Length of straight-run available:	Other:				
5. Describe nearest upstream and downstream disturbance:					
a) Upstream:					
b) Downstream:					
Other notes about installation:					