TLF

MASS FLOW METER

Approvals:

CONNECTION	FLOW RANGE (N_2)	MEDIA
1/4"NPT Female Thread	0...10 sccm ~ 0...100 SLM	Non Corrosive Dry Gases

SPECIFICATION

MODEL	TLF
APPLICATION	Non Corrosive Dry Gases
FLOW RANGE	0 ~ 10 sccm … 0 ~ 100 SLM
PROCESS CONNECTION	1/4"NPT Female Thread
ACCURACY	< 1% F.S.
REPEATABILITY	< 0.15% F.S.
RESPONSE TIME	< 1 Second
WETTED MATERIALS	Body - SS316 / Tapcon Plastic O-Ring - Viton / FFKM
OUTPUT SIGNAL	DC4-20㎃ / DC0~5V
PRESSURE LIMIT	SS316 - 34.4 Bar / Tapcon - 17.2 Bar
GAS TEMPERATURE	0...50℃
POWER	24VDC / 15VDC
ELECTRIC CONNECTOR	9 Pin D-Sub
FLOW DIRECTION	Left to Right / Bottom to Top / Top to Bottom

DISPLAY

*Code **W***

*Code **B***

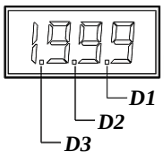
*Code **T***

*Code **O***

Code	*Display*
W	*Flow Rate with LCD*
B	*Flow Rate with Blue Back-Lighted LCD*
T	*Flow Rate & Totalizer with Blue Back-Lighted LCD*
O	*Without LCD*

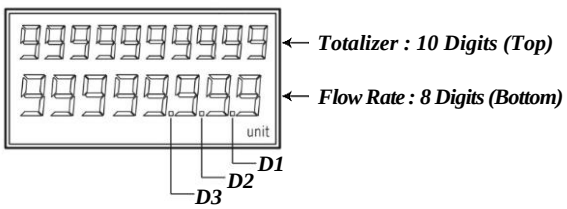
DECIMAL POINT

Flow Rate with LCD



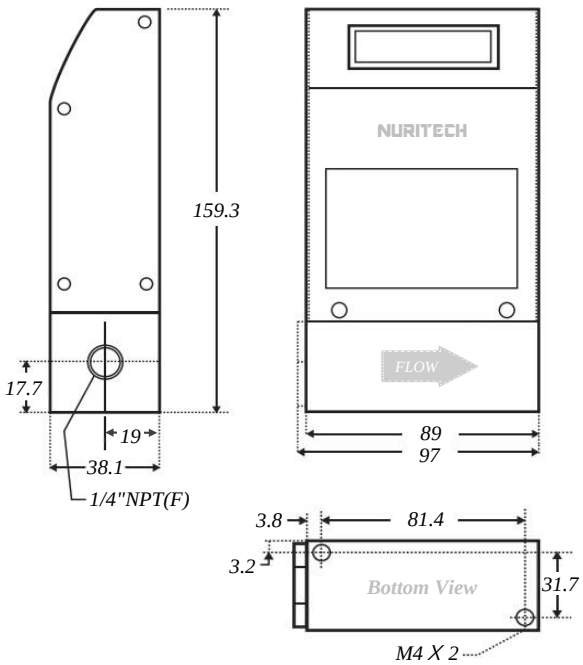
Range	*Decimal Point*
0 ~ 1.999	*D3*
2.00 ~ 19.99	*D2*
20.0 ~ 199.9	*D1*
200 ~ 1999	*None*

Flow Rate & Totalizer with LCD

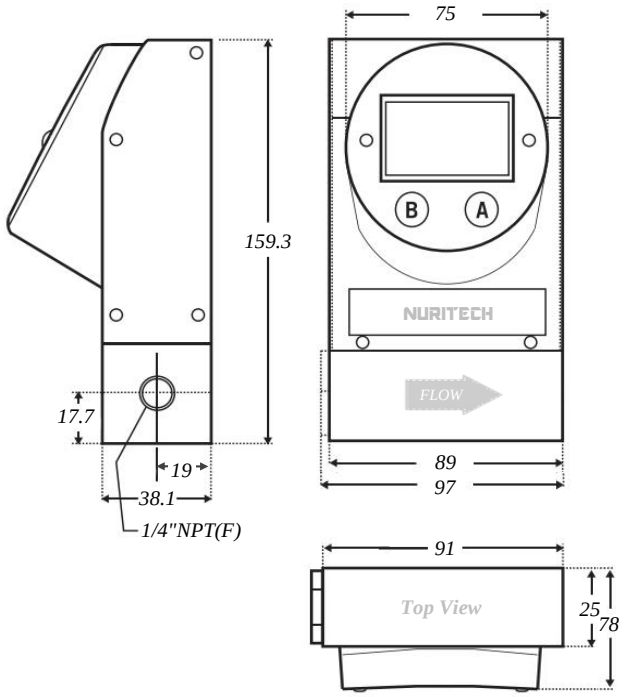


DIMENSION

Flow Rate with LCD & Without LCD Unit = ㎜



Flow Rate & Totalizer with LCD Unit = ㎜



GAS FACTOR TABLE

** Please contact us the K Factor value of other gases*

Actual Gas	Symbol	K Factor Relative to N_2	Actual Gas	Symbol	K Factor Relative to N_2	Actual Gas	Symbol	K Factor Relative to N_2
Acetylene	C_2H_2	0.58	Ethanol	C_2H_6O	0.39	Methanol	CH_3OH	0.58
Air	-	1.00	Ethyl Acetylene	C_4H_6	0.32	Methyl Acetylene	C_3H_4	0.43
Ammonia	NH_3	0.74	Ethyl Chloride	C_2H_5Cl	0.39	Methyl Bromide	CH_3Br	0.58
Argon	Ar	1.42	Ethylene	C_2H_4	0.60	Methyl Chloride	CH_3Cl	0.63
Bromine	Br_2	0.81	Helium	He	1.43	Nitric Oxide	NO	1.00
Butane	C_4H_{10}	0.26	Hexane	C_6H_{14}	0.18	Nitrogen Dioxide	NO_2	0.74
1-Butane	C_4H_8	0.30	Hydrogen	H_2	1.01	Nitrous Oxide	N_2O	0.71
Carbon Dioxide	CO_2	0.74	Hydrogen Bromide	HBr	1.00	Oxygen	O_2	0.99
Carbon Monoxide	CO	1.00	Hydrogen Chloride	HCl	1.00	Propane	C_3H_8	0.36
Carbonyl Sulfide	COS	0.66	Hydrogen Sulfide	H_2S	0.80	Propylene	C_3H_6	0.41
Chlorine	Cl_2	0.86	Isobutane	$CH(CH_3)_3$	0.20	Silane	SiH_4	0.60
Dimethyl Ether	$(CH_3)_2O$	0.39	Isobutylene	C_4H_8	0.30	Sulfur Dioxide	SO_2	0.69
Ethane	C_2H_6	0.50	Methane	CH_4	0.72	Sulfur Hexafluoride	SF_6	0.26

RELATED PRODUCTS

Model	Display	Input	Output	Power
 **FD1** Flow Indicator	4-Digit Red LED Flow Rate only	DC4-20mA	DC4-20mA 2-Relay DC1~5V RS485(optional)	DC24V AC220V

FLOW RANGE (N_2)

** Flow rates are stated for Nitrogen*
** For other gases use the K factor as a multiplier from gas factor table*

Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
00	0 ~ 10 sccm	06	0 ~ 1 SLM	12	0 ~ 25 SLM	18	0 ~ 55 SLM	24	Custom Flow Rate (≤100 SLM)
01	0 ~ 20 sccm	07	0 ~ 2 SLM	13	0 ~ 30 SLM	19	0 ~ 60 SLM		
02	0 ~ 50 sccm	08	0 ~ 5 SLM	14	0 ~ 35 SLM	20	0 ~ 65 SLM		
03	0 ~ 100 sccm	09	0 ~ 10 SLM	15	0 ~ 40 SLM	21	0 ~ 70 SLM		
04	0 ~ 200 sccm	10	0 ~ 15 SLM	16	0 ~ 45 SLM	22	0 ~ 75 SLM		
05	0 ~ 500 sccm	11	0 ~ 20 SLM	17	0 ~ 50 SLM	23	0 ~ 100 SLM		

ORDERING INFORMATION

TLF	Model

Code	Flow Range
00 ~ 23	Please refer to the flow range table
24	Custom range (please directly fill in the requested range)

Code	Wetted Parts Material
A	SS316 (Viton O-ring)
B	SS316 (FFKM O-ring)
T	Tapcon

Code	Process Connection
1	1/4"NPT Female Thread

Code	Display
W	Flow Rate with LCD
B	Flow Rate with Blue Back-Lighted LCD
T	Flow Rate & Totalizer with Blue Back-Lighted LCD
O	Without LCD

Code	Output Signal	Code	Output Signal
1	0 ~ 5 VDC	2	4 - 20 mA

Code	Input Power	Code	Input Power
1	24 VDC	2	15 VDC

Code	Power Supply for 24 VDC
2	Without

Code	Flow Direction
LR	Left to Right
BT	Bottom to Top
TB	Top to Bottom

TLF									

Complete Ordering Code

** Gas Name _____ Pressure & Temperature _____ Bar.G ____℃ (Normal)*