



OVAL FLOWMETER

Meter Size: 28, 29, 60, 31, 32, 33
(Double Case Construction with)
Powerful Magnetic Coupling

GENERAL SPECIFICATION
GS.No.GBB127E-8N

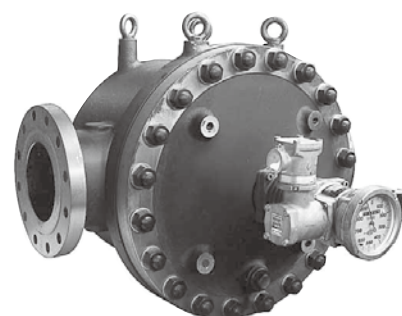
■ GENERAL

The OVAL flowmeter is a positive displacement type flowmeter comprising a pair of oval gear rotors. It is capable of metering the actual quantity of the liquid passing through it with a high degree of accuracy over a wide flow range and accepts any liquid irrespective of its chemical or physical properties.

It's accuracy, reliability, and quality has made it a highly valued industrial instrument.

■ FEATURES

1. Simple design makes this meter easy to disassemble and allows for ease in maintenance and inspection.
2. Introduction of a powerful magnetic coupling makes this meter compatible with a variety of direct-reading registers.
3. Compatible with a variety of pulse generators that allows a wide selection of remote instrumentation.
4. Can accept liquids of widely varying chemical properties by selecting appropriate meter materials.
5. Available to wide range of operating temperature and pressure.



■ GENERAL SPECIFICATIONS

● Meter Body

Item		Description					
Meter size		28	29	60	31	32	33
Nominal size mm		50 (2")	80 (3")	100 (4")	▲100 (4"), 150(6")	▲150 (6"), 200 (8")	
Construction		Double case construction					
Applicable fluid		Water, petroleum's, chemical liquids etc.					
Flow range		See flow range table (P.2)					
Operating temp. range	Linearity	± 0.35%	0 to 120°C (FC250), -5 to +120°C (SCPH2)				
		± 0.15%	0 to 60°C (FC250), -5 to +60°C (SCPH2)				
Linearity		± 0.35% or ± 0.15%					
Repeatability		± 0.05% or ± 0.02%					
Material	Outer housing	FC250, SCPH2					
	Inner housing, Rotor	FC250, SCS13A, ▲FC250 (w/surface treatment)					
	Bearing	Carbon					
Flow direction		Right → Left (st'd.), Left → Right, Bottom → Top, Top → Bottom					
Finish		Body, Transmission Gear Box & Register Case:Munsell 2.5G 8/2 Register Frame: Munsell N 1.5					

※ : ▲ Special

● Flange Ratings and Max. Operating Pressures: MPa

Pressure Rating	Housing Material	Flange Rating JIS						Flange Rating ANSI Class		
		10	16	20	30	40	63	150	300	600
10K	FC250	0.98	—	—	—	—	—	0.98	—	—
30K	SCPH2	1.18	2.45	3.04	4.51	—	—	1.69	4.59	—
63K	SCPH2	—	—	—	—	6.08	9.51	—	4.59	9.19

※ : Reference temperature; 120°C.

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■ FLOW RANGE

● **Table A Flow Range for Liquid in General (Linearity: ± 0.35%) (Operating temp. range: -5 to +120°C)**

Unit in m³/h

Meter Size	Nom. size mm	Type of Liquid Temp. Viscosity Range Operating Condition	Water		Liquids other than water (Unit in mPa·s)						
			60°C max.	60°C to 12°C	less than 0.3	0.3 to 0.8	0.8 to 2	2 to 5	5 to 1000	1000 to 1500	1500 to 2000
			28	50	Continuous	5 to 25	6 to 20	10 to 30	6 to 30	5 to 30	3 to 40
		Intermittent	5 to 35	6 to 25	10 to 40	6 to 40	5 to 40	3 to 50	2 to 50	2 to 43	2 to 35
		A.I.F.	45	30	50	50	50	50	50	43	35
29	80	Continuous	8 to 40	10 to 35	15 to 50	10 to 50	8 to 50	6 to 70	4 to 70	4 to 60	4 to 54
		Intermittent	8 to 60	10 to 40	15 to 70	10 to 70	8 to 70	6 to 90	4 to 90	4 to 77	4 to 70
		A.I.F.	80	50	90	90	90	90	90	77	70
60	100	Continuous	15 to 75	20 to 60	30 to 85	20 to 85	15 to 85	8 to 120	5 to 120	5 to 103	5 to 93
		Intermittent	15 to 110	20 to 75	30 to 125	20 to 125	15 to 125	8 to 150	5 to 150	5 to 125	5 to 115
		A.I.F.	130	90	150	150	150	150	150	125	115
31	150 ▲100	Continuous	25 to 110	30 to 90	40 to 130	30 to 130	25 to 130	16 to 180	10 to 180	10 to 150	15 to 140
		Intermittent	25 to 160	30 to 110	40 to 190	30 to 190	25 to 190	16 to 230	10 to 230	10 to 195	15 to 175
		A.I.F.	200	140	230	230	230	230	230	195	175
32	200 ▲150	Continuous	35 to 160	40 to 130	60 to 180	40 to 180	30 to 180	25 to 260	15 to 260	15 to 220	15 to 200
		Intermittent	35 to 240	40 to 160	60 to 270	40 to 270	30 to 270	25 to 320	15 to 320	15 to 275	15 to 245
		A.I.F.	300	200	320	320	320	320	320	275	245
33	200 ▲150	Continuous	40 to 210	50 to 180	80 to 250	50 to 250	40 to 250	30 to 360	20 to 360	20 to 305	20 to 280
		Intermittent	40 to 320	50 to 220	80 to 380	50 to 380	40 to 380	30 to 450	20 to 450	20 to 385	20 to 350
		A.I.F.	400	270	450	450	450	450	450	385	350

● **Table B Flow Range for Liquid in General (Linearity : ± 0.15%) (Operating temp. range: -5 to +60°C)**

Unit in m³/h

Meter Size	Nom. size mm	Type of Liquid Temp. Viscosity Range Operating Condition	Water		Liquids other than water (Unit in mPa·s)					
			60°C max.	less than 0.3	0.3 to 0.8	0.8 to 2	2 to 5	5 to 1000	1000 to 1500	1500 to 2000
			28	50	Continuous	8 to 25	15 to 30	10 to 30	7 to 30	5 to 40
		Intermittent	8 to 35	15 to 40	10 to 40	7 to 40	5 to 50	3 to 50	3 to 43	3 to 35
		A.I.F.	45	50	50	50	50	50	43	35
29	80	Continuous	15 to 40	22 to 50	15 to 50	13 to 50	9 to 70	6 to 70	6 to 60	6 to 54
		Intermittent	15 to 60	22 to 70	15 to 70	13 to 70	9 to 90	6 to 90	6 to 77	6 to 70
		A.I.F.	80	90	90	90	90	90	77	70
60	100	Continuous	25 to 75	45 to 85	30 to 85	25 to 85	12 to 120	8 to 120	8 to 103	8 to 93
		Intermittent	25 to 110	45 to 125	30 to 125	25 to 125	12 to 150	8 to 150	8 to 125	8 to 115
		A.I.F.	130	150	150	150	150	150	125	115
31	150 ▲100	Continuous	40 to 110	60 to 130	40 to 130	35 to 130	25 to 180	15 to 180	15 to 150	15 to 140
		Intermittent	40 to 160	60 to 190	40 to 190	35 to 190	25 to 230	15 to 230	15 to 195	15 to 175
		A.I.F.	200	230	230	230	230	230	195	175
32	200 ▲150	Continuous	50 to 160	90 to 180	60 to 180	50 to 180	35 to 260	20 to 260	20 to 220	20 to 200
		Intermittent	55 to 240	90 to 270	60 to 270	50 to 270	35 to 320	20 to 320	20 to 275	20 to 245
		A.I.F.	300	320	320	320	320	320	275	245
33	200 ▲150	Continuous	60 to 210	120 to 250	80 to 250	70 to 250	50 to 360	30 to 360	30 to 305	30 to 280
		Intermittent	60 to 320	120 to 380	80 to 380	70 to 380	50 to 450	30 to 450	30 to 385	30 to 350
		A.I.F.	400	450	450	450	450	450	385	350

- ※ : In the Operating Condition column “Continuous” means continuous operation; “Intermittent” means no more than 8 hours operating a day, and “A.I.F.” indicates allowable instantaneous flow rate.
- ※ : Flow range should be selected within the Continuous or Intermittent range specified.
- ※ : For high viscosity liquid more than 2000mPa·s, consult OVAL for the flow rate.
- ※ : Regarding liquid ammonia, consult OVAL.
- ※ : ▲ Special

■ REGISTERS AND UNIT REGISTRATION

Register Model	Dial and Pointer		Total Counter	
	Volume per Point Rev. (L)	Min. Reading (L)	Max. Readout (L)	LSD Drum (L)
Direct-reading Register (LW11)	10	0.1	9 999 990	10
	100	1	99 999 900	100
	1000	10	999 999 000	1000
Direct-reading Register w/Reset Counter (LW15)	10	0.1	9 999 998	2
	100	1	99 999 980	20
	1000	10	999 999 800	200
Resettable Register (LW42)	(Output Shaft) 100	1	999 999 990	10
	(Output Shaft) 1000	10	9 999 999 900	100
Resettable Register w/Printer Combination (LW43)	(Output Shaft) 100	1	999 999 990	10
	(Output Shaft) 1000	10	9 999 999 900	100

As to general specifications of registers, refer to individual General Specification Sheets.

(LSD: Least Significant Digit)

● Unit of Unfactored Pulse Generation

● Unit of Factored Pulse Generated

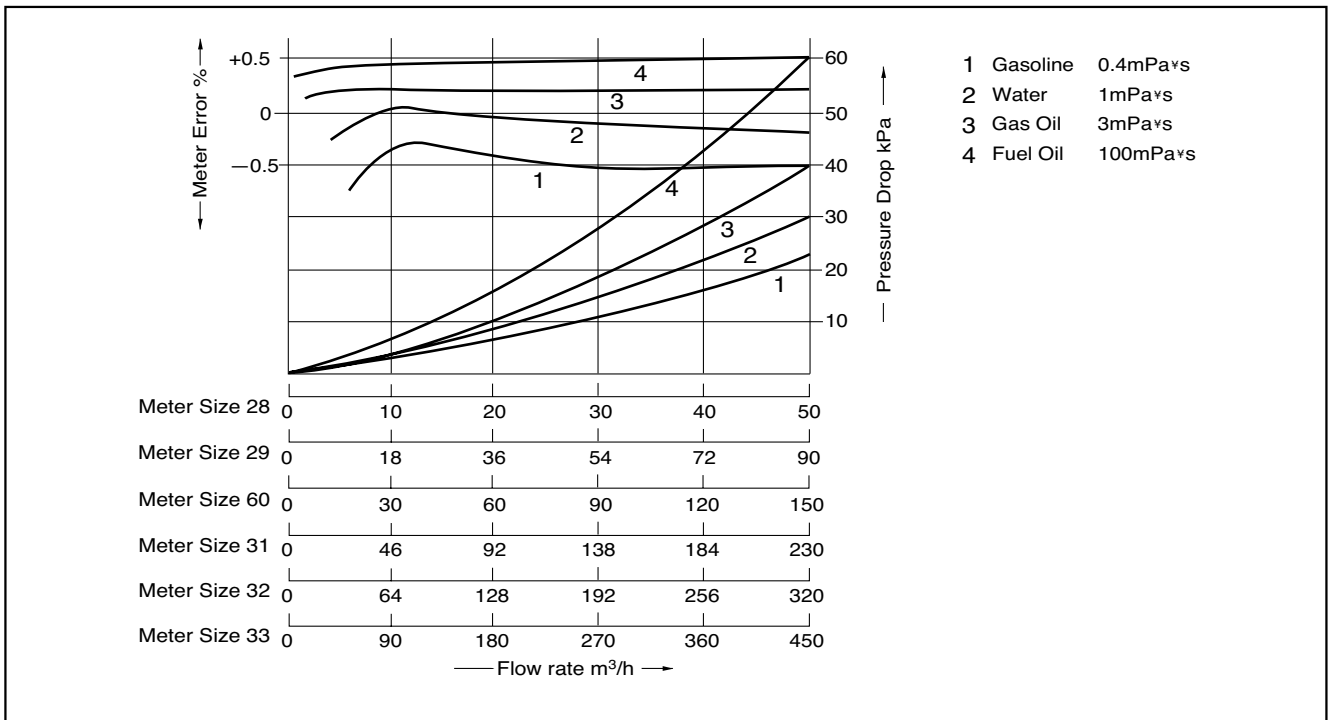
Meter Size	Pulse Unit Signal Unit Volume Per Pointer Rev. L/rev.	PG20EP·PG30SEP				PG30EP·PG30DEP				Max. Flow rate m ³ /h	PG30SEP Nominal Meter Factor (mL/P)	
		1P/rev.		10P/rev.		100P/rev.		1000P/rev.			Less than Full Scale (m ³ /h)	More than Full Scale (m ³ /h)
		Pulse Unit (L/P)	Freq. at Max. Flow rate (Hz)	Pulse Unit (L/P)	Freq. at Max. Flow rate (Hz)	Pulse Unit (L/P)	Freq. at Max. Flow rate (Hz)	Pulse Unit (L/P)	Freq. at Max. Flow rate (Hz)			
28	10	—	—	—	—	0.1	138.9	0.01	100 (Q=36)	50	81.09 (5.5)	162.19 (5.6)
	★100	100	0.1	10	1.4	1	13.9	0.1	138.9			
29	10	—	—	—	—	0.1	250	0.01	1000 (Q=36)	90	119.17 (8.5)	238.3 (8.6)
	★100	100	0.3	10	2.5	1	25	0.1	250			
60	★100	100	0.4	10	4.2	1	41.7	0.1	417	150	203.3 (14)	406.7 (15)
	1000	1000	0.04	100	0.4	10	4.2	1	41.7			
31	100	—	—	—	—	1	63.9	0.1	639	230	377.7 (29)	755.4 (30)
	★1000	1000	0.06	100	0.6	10	6.4	1	63.9			
32	100	—	—	—	—	1	88.9	0.1	889	320	595.6 (47)	1191.2 (48)
	★1000	1000	0.09	100	0.9	10	8.9	1	88.9			
33	100	—	—	—	—	1	125	0.1	1000 (Q=36)	450	894.4 (70)	1788.8 (71)
	★1000	1000	0.1	100	1.3	10	12.5	1	125			

★: Standard; ●: Max. frequency is 1000Hz and "Q=" in bracket is limit flow.
For detailed pulse generator specifications, see individual General Specification Sheets.

● Full Scale for Flow rate Indicator or Recorder

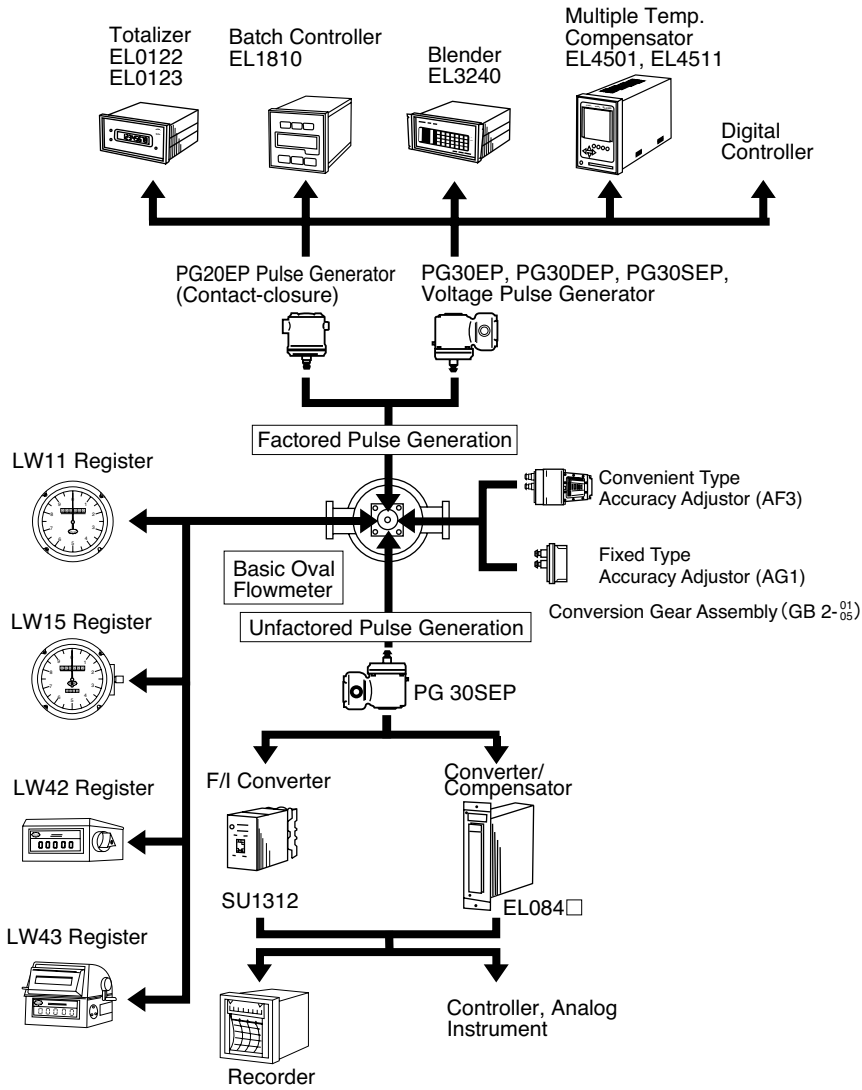
Meter Size	Full Scale m ³ /h						Full Scale L/min.						
	15	20	30	40	50	—	250	300	400	500	600	800	1000
28	15	20	30	40	50	—	250	300	400	500	600	800	1000
29	20	30	40	60	80	100	400	500	600	800	1000	1500	—
60	30	40	60	80	100	150	500	600	800	1000	1500	2000	2500
31	60	80	100	150	200	300	1000	1500	2000	2500	3000	4000	5000
32	100	150	200	300	400	500	1500	2000	2500	3000	4000	5000	6000
33	200	300	400	500	800	—	3000	4000	5000	6000	8000	10000	—

■ METER ERROR and PRESSURE LOSS

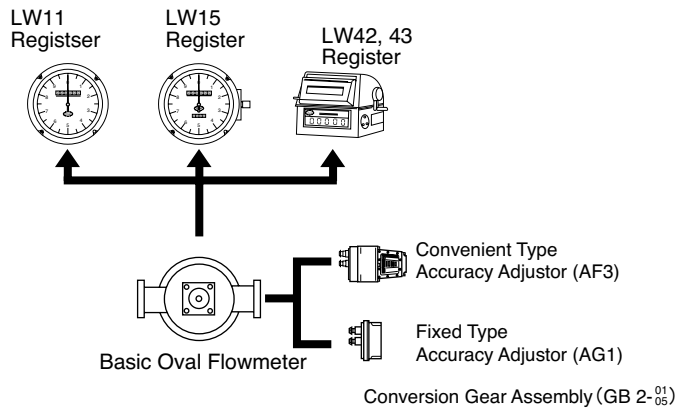


REGISTERS AND REMOTE INSTRUMENTATION SYSTEMS

Direct-coupled Registers and Remote Instrumentation System with Pulse Generator Equipped



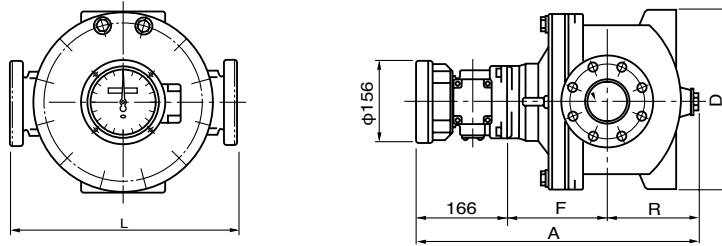
Direct-coupled Registers without Pulse Generator



- NOTES: 1. For details of the direct-coupled registers, pulse generators, receiving instruments, etc., see individual General Specification sheets.
 2. Explosionproof construction of pulse generators are available.

■ DIMENSIONS (Unit in mm)

● **Meter Size 28, 29 (LW11 Register Installed)**



Meter Size		28					29				
Pres. Rating	Symbol	F	R	D	A	Weight kg	F	R	D	A	Weight kg
		10K		206	175	344	547	89.5	265	205	344
30K		205	163	364	534	120	234	184	364	584	140
▲63K		324	180	420	670	180	352	210	420	728	240

1. In case of cooling fin coupled, add 145 mm to dim of "F" above.
2. In case of type 2 coupling system add 30 mm to dim of "F" above.

● **Flange-to-Flange Dimensions (L)**

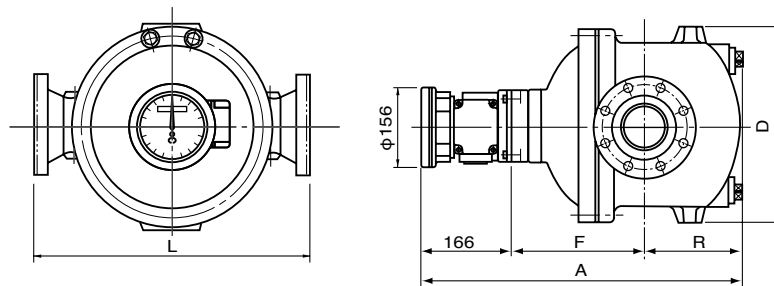
Meter Size	Nominal size mm (inch)	Pres. Rating			10K	30K	▲63K	
		Body Material			FC250	SCPH2	SCPH2	
		Flange ratings						
28	50 (2")	JIS 5K FF					432	—
		JIS 10K RF, FF					440	468
		JIS 16K RF, FF					—	468
		JIS 20K RF					—	472
		JIS 30K RF					—	480
		JIS 40K RF					—	554
		JIS 63K RF					—	570
		ANSI 125 FF					432	—
		ANSI 150 RF					439	474
		ANSI 300 RF					—	482
		ANSI 600 RF					—	566

▲ Special

Meter Size	Nominal size mm (inch)	Pres. Rating			10K	30K	▲63K	
		Body Material			FC250	SCPH2	SCPH2	
		Flange ratings						
29	80 (3")	JIS 5K FF					432	—
		JIS 10K RF, FF					440	480
		JIS 16K RF, FF					—	484
		JIS 20K RF					—	488
		JIS 30K RF					—	500
		JIS 40K RF					—	554
		JIS 63K RF					—	570
		ANSI 125 FF					435	—
		ANSI 150 RF					444	492
		ANSI 300 RF					—	500
		ANSI 600 RF					—	566

▲ Special

● **Meter Size 60 (LW11 Register Installed)**



Meter Size		60				
Pres. Rating	Symbol	F	R	D	A	Weight kg
		10K		221	197	430
30K		247	202	430	615	170
▲63K		377	200	510	743	364

In case of cooling fin coupled, add a 145 mm to "F" above.

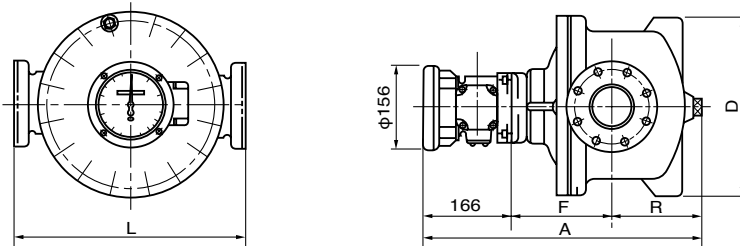
▲ Special

● **Flange-to-Flange Dimensions (L)**

Meter Size	Nominal size mm	Pres. rating			10K	30K	63K	
		Body Material			FC250	SCPH2	SCPH2	
		Flange ratings						
60	100 (4")	JIS 10K RF, FF					550	522
		JIS 16K RF, FF					—	530
		JIS 20K RF					—	534
		JIS 30K RF					—	550
		JIS 40K RF					—	684
		JIS 63K RF					—	700
		ANSI/JPI 125 FF					550	—
		ANSI/JPI 150 RF					550	534
		ANSI/JPI 300 RF					—	550
		ANSI/JPI 600 RF					—	702

DIMENSIONS (Unit in mm)

● Meter Size 31 (LW11 Register Installed)



Meter Size		31				
Pres. Rating	Symbol	R	R	D	A	Approx. Weight kg
10K		274	270	480	710	249
30K		276	275	515	717	361
▲63K		386	295	640	847	500

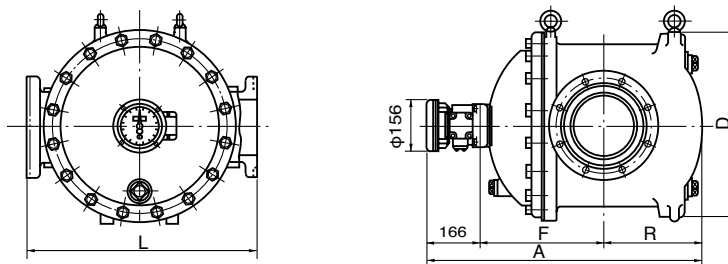
* In case of a meter with cooling fin, add 145 mm to dim "F" above.

● Flange-to-Flange Dimensions (L)

Meter Size	Nominal size mm (inch)	Pres. Rating			
		Flange ratings	10K FC250	30K SCPH2	63K SCPH2
31	▲100 (4")	JIS 10K RF, FF	600 (FF only)	662	—
		JIS 16K RF, FF	—	670	—
		JIS 20K RF	—	674	—
		JIS 30K RF	—	690	—
		JIS 40K RF	—	—	784
		JIS 63K RF	—	—	800
		ANSI 150 RF	600	674	—
		ANSI 300 RF	—	690	—
		ANSI 600 RF	—	—	800
	150 (6")	JIS 10K RF, FF	600 (FF only)	658	—
		JIS 16K RF, FF	—	662	—
		JIS 20K RF	—	670	—
		JIS 30K RF	—	690	—
		JIS 40K RF	—	—	780
		JIS 63K RF	—	—	800
		ANSI 150 RF	599	665	—
		ANSI 300 RF	—	687	—
		ANSI 600 RF	—	—	800

▲ Special

● Meter Size 32, 33 (LW11 Register Installed)



Meter Size		32					33				
Pres. Rating	Symbol	F	R	D	A	Approx. Weight kg	F	R	D	A	Approx. Weight kg
10K		363	305	600	834	425	384	330	680	880	585
30K		364	313	660	843	630	384	340	720	890	980
▲63K		436	370	720	972	—	487	390	790	1043	1300

In case of a meter with cooling fin, add 145 mm to Dim. "F" above. ▲ Special

● Flange-to-Flange Dimensions (L)

Meter Size	Nominal size mm (inch)	Pres. Rating				
		Flange ratings	10K FC250	30K SCPH2	▲63K SCPH2	
32	▲150 (6)	JIS 10K RF, FF	700	768	—	
		JIS 16K RF, FF	—	772	—	
		JIS 20K RF	—	780	—	
		JIS 30K RF	—	800	—	
		ANSI 125 FF	699	—	—	
		ANSI 150 RF	699	775	—	
		ANSI 300 RF	—	800	—	
		200 (8)	JIS 10K RF, FF	700	760	—
			JIS 16K RF, FF	—	768	—
	JIS 20K RF, FF		—	776	—	
	JIS 30K RF, FF		—	800	—	
	JIS 40K RF, FF		—	—	940	
	JIS 63K RF, FF		—	—	960	
	ANSI 125 FF		705	—	—	
	ANSI 150 RF		705	773	—	
	ANSI 300 RF		—	800	—	
	ANSI 600 RF	—	—	964		

▲ Special

Meter Size	Nominal size mm (inch)	Pres. Rating				
		Flange ratings	10K FC250	30K SCPH2	▲63K SCPH2	
33	▲150 (6)	JIS 10K RF, FF	800	888	—	
		JIS 16K RF, FF	—	892	—	
		JIS 20K RF	—	900	—	
		JIS 30K RF	—	920	—	
		ANSI 125 FF	799	—	—	
		ANSI 150 RF	799	895	—	
		ANSI 300 RF	—	920	—	
		200 (8)	JIS 10K RF, FF	800	880	—
			JIS 16K RF, FF	—	888	—
	JIS 20K RF, FF		—	896	—	
	JIS 30K RF, FF		—	920	—	
	JIS 40K RF, FF		—	—	1030	
	JIS 63K RF, FF		—	—	1050	
	ANSI 125 FF		805	—	—	
	ANSI 150 RF		805	893	—	
	ANSI 300 RF		—	920	—	
	ANSI 600 RF	—	—	1054		

▲ Special

■ PRODUCT CODE EXPLANATION

● Main code

Model: ①~③			①②③***-****-***-****-****
L	C	S	Element: stainless steel
L	B	S	Element: cast iron
L	Q	S	Element cast iron + Kernigan plating Size 31 and bigger
Capacity (Nominal Diameter): ④⑤			***④⑤*-****-***-****-****
2	8		50mm (2") ND (Small)
2	9		80mm (3") ND (Small)
6	0		100mm (4") ND (Big)
3	1		100mm or 150mm (4" or 6") ND (Small (special) or Big) ※1
3	2		150mm or 200mm (6" or 8") ND (Small (special) or Big) ※1
3	3		150mm or 200mm (6" or 8") ND (Small (special) or Big) ※1
Nominal diameter: ⑥			*****(⑥)-****-***-****-****
1			Nominal diameter (Small)
2			Nominal diameter (Big)
Hyphen: ⑦			*****-*****-***-****-****
Fluid category: ⑧			*****-⑧****-***-****-****
L			Liquid
Temp. category: ⑨			*****-⑨***-***-****-****
0			60°C and lower
N			Over 60°C up to 80°C
1			Over 60°C up to 120°C
2			Over 120°C up to 200°C
4			Over 200°C up to 300°C
Major material: ⑩			*****-⑩***-***-****-****
F			SCPH2
B			FC250 Limited to JIS10K/ASME150
Z			Special
Process connection: ⑪⑫			*****-***⑪⑫-***-****-****
J	1		JIS 10K RF
J	B		JIS 16K RF
J	2		JIS 20K RF
J	3		JIS 30K RF
J	4		JIS 40K RF
J	6		JIS 63K RF
A	1		ASME 150 RF
A	3		ASME 300 RF
A	6		ASME 600 RF
P	1		JPI 150 RF
P	3		JPI 300 RF
P	6		JPI 600 RF
Z	9		Special
Hyphen: ⑬			*****-*****-***-****-****
Explosion-proof: ⑭			*****-*****-⑭***-****-****
0			Non-explosionproof (no pulse generator)
D			JIS explosionproof
Ex-proof temp. class: ⑮			*****-*****-⑮***-****-****
0			Non-explosionproof (no pulse generator)
4			Ignition G4

※1: Only ND (Big) is available for JIS63K.

Regulations: ⑯			*****-*****-***⑰-****-****
0			Standard
G			High Pressure Gas Safety Act (Approved product) w/Material test certificate
H			High Pressure Gas Safety Act (Individual test) w/Material test certificate (Designed on PO issued)
J			High Pressure Gas Safety Act (Completion inspection) w/Material test certificate
L			Gas Business Act (Approved product) w/Material test certificate (Designed on PO issued)
M			Gas Business Act w/Material test certificate
Q			Electricity Business Act (Certificate required) w/Material test certificate (Designed on PO issued)
R			Electricity Business Act w/Material test certificate
T			Fire Service Act w/Material test certificate
A			Nuclear power w/Material test certificate (Designed on PO issued)
F			w/Material test certificate
Z			Special
Hyphen: ⑰			*****-*****-***-****-****
Register: ⑱			*****-*****-***⑲-****-****
1	LW11	AG1	±0.5% RD
2	LW11	AF3	±0.2% RD
3	LW15	AG1	±0.5% RD
4	LW15	AF3	±0.2% RD
5	LW42	AF3	±0.2% RD
6	LW43	AF3	±0.2% RD
7	LW42 + Pumping meter	AF3	±0.5% RD
Unfactored pulse generator: ⑲			*****-*****-***⑲-****-****
0			No pulse generator
C			Unfactored pulse PG30SEP
L			Unfactored pulse PG30DEP
Z			Special
Factored pulse generator: ⑳			*****-*****-***⑳-****-****
0			No pulse generator
B			Factored pulse PG30EP
C			Factored pulse PG30SEP
K			Factored pulse PG20EP
L			Factored pulse PG30DEP
Z			Special
Version code: ㉑			*****-*****-***-****㉑-****
A			Version code: A
Hyphen: ㉒			*****-*****-***-****-****
Bearing: ㉓			*****-*****-***-****㉓-****
0			Standard (carbon bearing)
8			Polymerizing liquid (carbon bearing)
Viscosity category: ㉔			*****-*****-***-****㉔-****
5			Below 200mPa.s (sintered rotors inapplicable) Cut rotor
6			200mPa.s and over (sintered rotors inapplicable) Special cut cut rotor
Seal material: ㉕			*****-*****-***-****㉕-****
F			O-ring (FPM), gasket (T#1120)
C			O-ring (IIR), gasket (T#1120)
T			O-ring (PTFE), gasket (V7020)
P			O-ring (PTFE), gasket (V7035)
V			Vortex
Z			Special
Special: ㉖			*****-*****-***-****㉖-****
0			Standard
Z			Special

■ PRODUCT CODE EXPLANATION

● Additional code

Category of High Pressure Gas			
H	P	0	Other than High Pressure Gas
H	P	1	Toxic gas and flammable gas
H	P	2	Toxic gas
H	P	3	Flammable gas
H	P	4	Other than toxic or flammable gas
Accuracy			
R	0	5	±0.50% ACCURACY
L	0	1	±0.15% LINEARITY ※Only for export
L	0	3	±0.35% LINEARITY ※Only for export
R	0	2	±0.20% ACCURACY
R	9	9	Special
Operating condition			
F	C	0	Continuous
F	M	0	Intermittent
Special test (instrumental error)			
A	1	0	Taxed custody transfer
A	2	0	By certified measurer
A	6	0	Standard oil meter According to JMIF standard (Bore size 80mm and over)
A	7	0	Standard fuel oil meter, standard water meter
A	8	0	Reference fuel oil meter, reference water meter
A	9	9	Designation of instrumental error test method Addition of one (1) test point, etc.
Flow direction ※Must choose			
F	R	0	R→L
F	L	0	L→R
F	U	0	T→B Electric conduit at the bottom
F	D	0	B→T Electric conduit at the bottom
Designated special paint on body			
B	C	0	Corrosion proof
B	A	0	Salinity and acid tolerance 120°C and lower
B	X	0	Customer designation
Designated special paint on transmitter			
S	F	0	Corrosion proof Special treatment
S	D	0	Salinity tolerance
S	E	0	Acid tolerance Special treatment
S	X	0	Customer designated paint Special treatment
Cleansing			
T	W	0	Non-oil and non-water treatment
T	W	1	Non-oil or non-water treatment equivalent
T	C	0	CIP Choose countermeasure to sudden temp. change
Label			
N	P	J	Label (Japanese)
N	P	E	Label (English)

Document			
D	S	J	DWG and specifications for approval (Japanese)
D	S	E	DWG and specifications for approval (English)
D	R	0	Re-submission of DWG with specifications
D	C	J	Final DWG (Japanese)
D	C	E	Final DWG (English)
D	P	J	Calculation sheet (Japanese)
D	P	E	Calculation sheet (English)
S	E	J	Instrumental error test report (Japanese)
S	E	E	Instrumental error test report (English)
S	T	J	Pressure test report (Japanese)
S	T	E	Pressure test report (English)
S	A	J	Airtight test report (Japanese)
S	A	E	Airtight test report (English)
D	D	J	Dimensional check record (Japanese)
D	D	E	Dimensional check record (English)
S	P	J	Penetrant test report (Japanese) Welded part of pressure resistant vessel
S	P	E	Penetrant test report (English) Welded part of pressure resistant vessel
S	M	J	Magnetic particle inspection (Japanese) Welded part of pressure resistant vessel
S	M	E	Magnetic particle inspection (English) Welded part of pressure resistant vessel
S	R	J	Radiographic inspection (Japanese) Welded part of pressure resistant vessel
S	R	E	Radiographic inspection (English) Welded part of pressure resistant vessel
S	U	J	Ultrasonic inspection (Japanese) Welded part of pressure resistant vessel
S	U	E	Ultrasonic inspection (English) Welded part of pressure resistant vessel
S	X	J	PMI test report (Japanese)
S	X	E	PMI test report (English)
S	S	J	Impact test report (Japanese)
S	S	E	Impact test report (English)
D	Y	J	WPS/PQR (Japanese)
D	Y	E	WPS/PQR (English)
D	9	J	Photo (Japanese)
D	9	E	Photo (English)
D	T	J	Inspection procedure (Japanese)
D	T	E	Inspection procedure (English)
C	A	J	Inspection certificate: A set Only Japanese
C	B	J	Inspection certificate: B set Only Japanese
C	C	J	Inspection certificate: C set Only Japanese
C	D	J	Inspection certificate: D set Only Japanese
Customer witness inspection			
V	1	0	Required

■ When making inquiries, please state following information :

Please fill out the following specifications when making inquiries.

1. Model	L _____
2. Fluid to be measured	Name _____ Viscosity _____ mPa·s Specific gravity _____
3. Flow rate (m³/h)	Maximum _____ Normal _____ Minimum _____
4. Fluid temperature (°C)	Maximum _____ Normal _____ Minimum _____
5. Ambient temperature (°C)	Maximum _____ Normal _____ Minimum _____
6. Pressure (MPa)	Maximum _____ Normal _____ Minimum _____
7. Flow direction	Right ⇄ Left, Bottom ⇄ Top
8. Flange connection	Nominal diameter _____ mm, Flange rating _____
9. Required accuracy (Linearity)	± _____ %
10. Explosion-proof construction	<input type="checkbox"/> Required class _____ <input type="checkbox"/> Not required
11. Accessories	<input type="checkbox"/> Strainer, <input type="checkbox"/> Air eliminator, <input type="checkbox"/> Companion flange
12. Quantity	Including accessories _____
13. Receiving device	Type, manufacturer, model, specifications (input, output, power supply, etc.)
14. Distance between the flow meter and the receiving device	_____ m

● Remote Instrumentation

1	Signal type and application (totalizer, indicator, recorder, controller, computer input, data logger input, batch, blend)
2	Pulse generator type and signal unit
3	Full scale and unit
4	Flowmeter to receiving instrument distance
5	Power source, voltage, frequency
6	Receiving instrument

● Automatic Batching

1	Quantity per batch, preset full scale
2	Time required for each batch
3	Daily total number of batch
4	Allowable error in each batch
5	Operating air pressure, power source, voltage, frequency
6	Valve used and accessories

The specification as of April, 2017 is stated in this GS Sheet. Specifications and design are subject to change without notice.

Sales Representative: