



# FLOWPET-EG

MODEL LS□□7<sup>6</sup>4□0<sup>A</sup>C

GENERAL SPECIFICATION

GS.No.GBB323-4-E

## ■ GENERAL

FLOWPET-EG is an OVAL flowmeter primarily intended for use in boiler feed water and fuel oil metering applications.

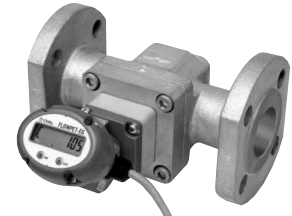
Field proven accuracy and long life along with the best price/performance and ease of use makes this industrial meter ideal as a dedicated tool for heat control.

## ■ FEATURES

1. Available in two product families - for water service and fuel oil service.
2. Newly designed electronic register shows total flow and instantaneous flow on a digital LCD at the touch of mode select switch. Meter face can be oriented to any angle upward or downward over 180 degrees.
3. Electronic register equipped model has an internal battery (good for 8 years); eliminates the need for an external power source. (Operation on external power source is recommended for the pulse output models.)
4. Display capabilities improved over the previously offered NX register. (LCD characters 10mm high now over the former 7mm high. Units in which the register reads also indicated.)



Pulse generator equipped



High temperature model



Less pulse generator

5. Factored pulse width is variable in 1ms steps with front-panel buttons (adjustable 1 to 999ms).
6. Simulated outputs available.  
A 1Hz or 10Hz simulated pulse train is available for loop test.
7. Reliable engineering-unit pulses for total flow and high-pulse-rate output available for flow indicator.

## ■ Electronic Register Specifications

Item	Description
<b>Menu items</b>	1 Accumulated total flow (8-digit) 2 Instantaneous flowrate, L/h (mode: b1) and L/min (mode: b2) } Selectable with mode switch 3 Resettable total flow (zero start/zero resettable, mode: C) (7-digit) 4 Low battery alarm (A low battery indicator " " flickers below 3.0V.) 5 Factored pulse and unfactored pulse output (pulse generator equipped model)
<b>Display</b>	7-segment, 8-digit LCD. Characters 10mm high. Also the units of measurement ["L" (std.)kL, m <sup>3</sup> , g, kg, t, or none]
<b>Register accuracy</b>	Total flow : ±1 count Instantaneous flowrate : ±1% of full scale or better
<b>Display orientation</b>	Top-, horizontal-, or down-directing adjustable in 15° steps over 180°
<b>Flow detection</b>	A magnetic sensor detects alternating magnetic fields. Response frequency 200Hz max.
<b>Output pulse</b>	Type Open collector pulse
	Capacity Allowable current 20mA DC, Max. voltage applied: 30V
	Type Factored * Unfactored
	Pulse width 1ms, 50ms, 100ms, 250ms 2ms (fixed)
<b>Cable</b>	Vinyl-sheathed, 4-conductor (individual elements 0.5mm <sup>2</sup> , ø7 O.D.) cable 1 meter long furnished (standard) (Not furnished with models less pulse generator)
<b>Transmission length</b>	1 kilometer max. (when CVVS: 1.25 ~2.0mm <sup>2</sup> cable is used)
<b>Power source (See Note.)</b>	Lithium battery or external power source
	Lithium battery 3.6V dedicated battery pack incorporated Good for 8 years (A low battery alarm flickers below 3.0V approx.)
	external power source 12~50VDC±10% (Depends on operating conditions.)
<b>Operating temp. range</b>	-10~+60°C
<b>Material</b>	Polycarbonate
<b>Color coded liquid kind</b>	LCD frame: Red (oil service), Blue (water service)
<b>Finish (housing)</b>	Blue
<b>Construction</b>	Meets IP53
<b>Installation location</b>	Under the eaves (Avoid locations exposed to the sunshine.)

NOTE: Dedicated battery pack is all needed for operation.

With an external power source connected, the product operates without lomerling of battery power.

Interrupting the external power automatically switches the model to hattey operation.

\*: Adjustable with front-panel button over a range 1 to 999ms in 1ms steps. Shown above are default settings.

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# FLOWPET-EG for Oil Service

LS□□76-4□0A (C)

## ● Flow Ranges

Model	Nominal Size mm	Flange Rating	Flow Range, L/h		
			Kerosene (Above 0.8mPa·s to 2mPa·s)	Gas Oil (heavy oil A) (Above 2mPa·s to 5mPa·s)	Heavy oil (Above 5mPa·s to 200mPa·s)
LS4976-4 □ 0 A (C)	20	JIS 10K RF	10 (20) ~ 800	7 (14) ~ 800	5 (10) ~ 800
LS5076-4 □ 0 A (C)	20	JIS 10K RF	150 (300) ~ 1600	80 (160) ~ 2000	50 (100) ~ 2000
LS5276-4 □ 0 A (C)	25	JIS 10K RF	300 (600) ~ 3000	150 (300) ~ 3800	80 (160) ~ 3800
LS5376-4 □ 0 A (C)	40	JIS 10K RF	600 (1200) ~ 5000	300 (600) ~ 6400	150 (300) ~ 6400
LS5576-4 □ 0 A	40	JIS 10K RF	1200~11000	600~14000	400~14000
LS5676-4 □ 0 A	50	JIS 10K RF	2000~20000	1400~24000	900~24000

※ : ( ) For high temperature model

## ● Meter Specifications

Item	Description
Operating temp. range (fluid temp.)	0 ~ 120°C (0 ~ 150°C)※
Max. operating pressure	1.18MPa (0.98MPa)
Linearity	±0.5% of RD
Material	Body
	Rotors
Flow directions *	Standard : Right → left    Option : left → right, bottom → top, top → bottom
Finish	Munsell 2.5 YR 6/13

⚠ Install the meter such that the pipe always remains filled with oil.  
See instruction manual if changing flow direction is desired.

※ : ( ) For high temperature model

## ● Electronic Register : Units of Count and Pulse Output Units

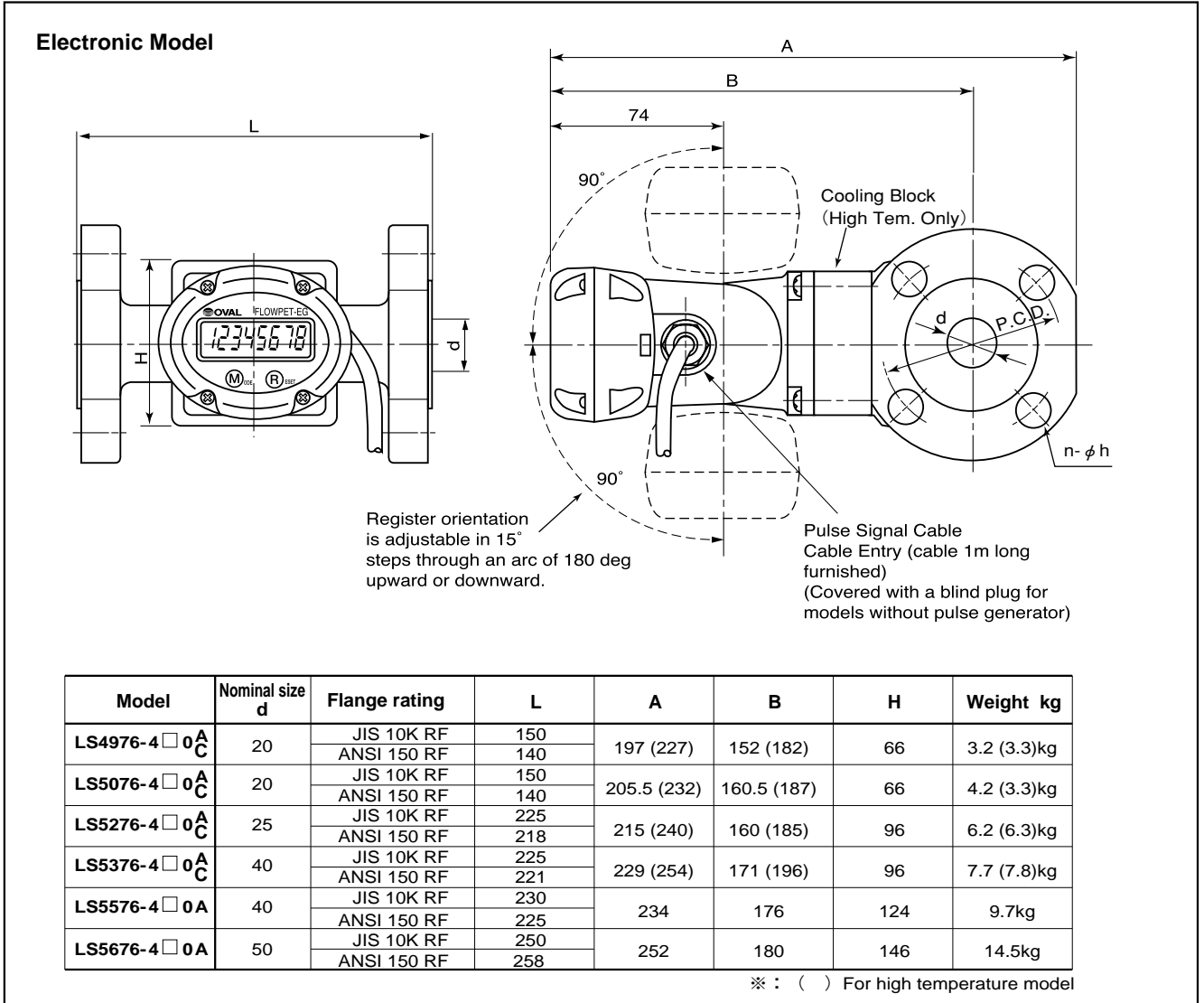
□ Option

Model	Nom. Size, mm	Totalizer Resolution	Output Pulse						Register Full Scales		Max. Flowrate L/h		
			Factored Output Pulse		Factored Pulse Width		Unfactored Output Pulse		Units of Instantaneous Flowrate L				
			Pulse Units	Output Freq. at Max. Flowrate	1ms	50ms	100ms	250ms	Nom. Meter Factor	Output Freq. at Max. Flowrate		/h (mode b1)	/min. (mode b2)
LS4976-4 □ 0 A C	20	999999.99	10mL/P	22.2	○	—	—	—	5.928mL/P	37.49Hz	1	0.01	800
		9999999.9	100mL/P	2.2	○	○	○	○					
		999999999	1L/P	0.22	○	○	○	○					
LS5076-4 □ 0 A C	20	999999.99	10mL/P	55.6	○	—	—	—	9.9128mL/P	56.01Hz	1	0.01	2000
		9999999.9	100mL/P	5.56	○	○	—	—					
		999999999	1L/P	0.56	○	○	○	○					
LS5276-4 □ 0 A C	25	999999.99	10mL/P	105	○	—	—	—	9.639mL/P	109.5Hz	1	0.01	3800
		9999999.9	100mL/P	10.5	○	○	—	—					
		999999999	1L/P	1.05	○	○	○	○					
LS5376-4 □ 0 A C	40	9999999.9	100mL/P	17.7	○	—	—	—	17.470mL/P	101.7Hz	1	0.01	6400
		999999999	1L/P	1.77	○	○	○	○					
		999999999	10L/P	0.17	○	○	○	○					
LS5576-4 □ 0 A	40	9999999.9	100mL/P	38.8	○	—	—	—	34.526mL/P	112.6Hz	1	0.01	14000
		999999999	1L/P	3.88	○	○	○	—					
		999999999	10L/P	0.38	○	○	○	○					
LS5676-4 □ 0 A	50	9999999.9	100mL/P	66.6	○	—	—	—	74.483mL/P	89.5Hz	1	0.01	24000
		999999999	1L/P	6.66	○	○	○	—					
		999999999	10L/P	0.66	○	○	○	○					

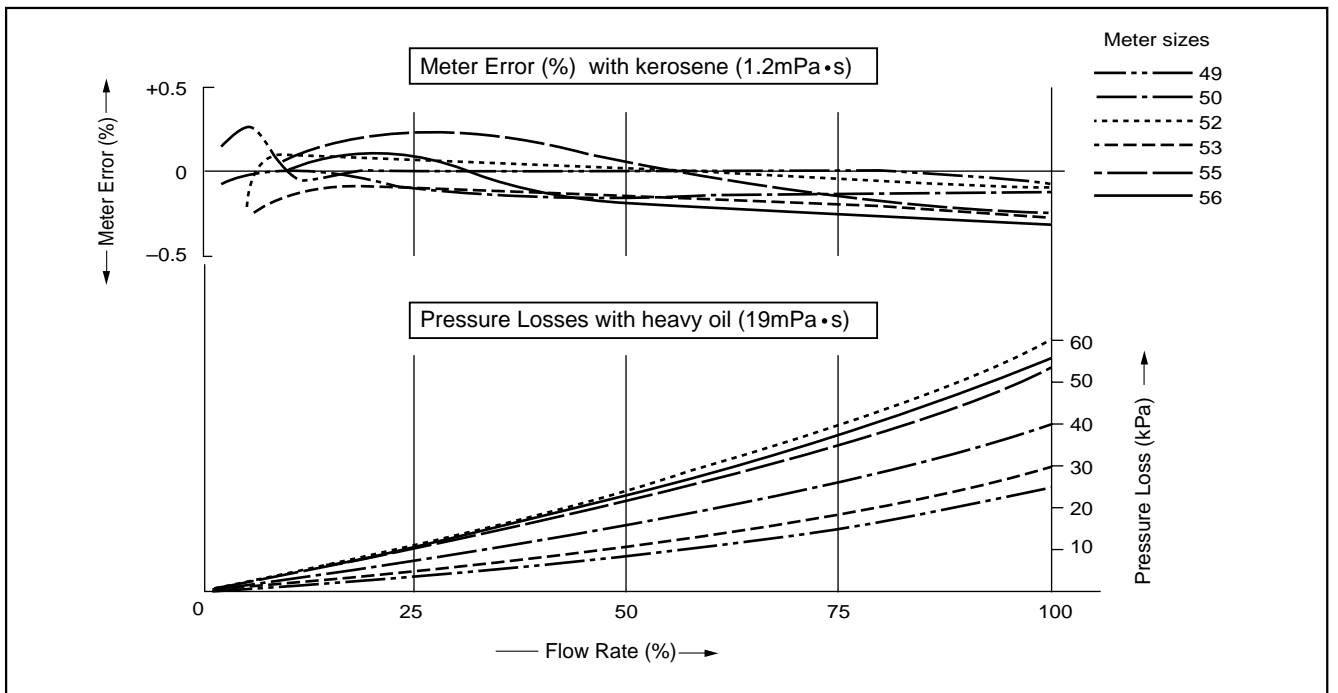
## ■ APPLICABLE EN DIRECTIVES

Applicable EU Directive	Electro-Magnetic Compatibility Directive : 89/336/EEC, 92/31/EEC, 93/68/EEC
Applicable EN standards, etc.	Electro-Magnetic Compatibility Directive EN55011 : 1998/A1 : 1999, Group 1, Class B EN61000-6-2 : 2001

● Outline Dimensions [Unit in mm]



● Meter Errors and Pressure Losses



● **Product Code Explanation**

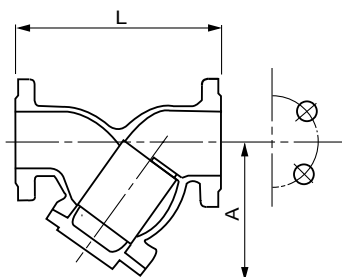
Item	Code No.										Description	
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩		
<b>Model</b>	L	S										Dedicated OVAL flowmeter
<b>Meter Size</b>	4	9										20A JIS 10K RF, ANSI 150 RF
	5	0										20A JIS 10K RF, ANSI 150 RF
	5	2										25A JIS 10K RF, ANSI 150 RF
	5	3										40A JIS 10K RF, ANSI 150 RF
	5	5										40A JIS 10K RF, ANSI 150 RF
	5	6										50A JIS 10K RF, ANSI 150 RF
<b>Model Name</b>						7						Flowpet
<b>Application</b>							6	-				Oil service
<b>Register Type</b>									4			Electronic register (EG Type)
<b>Pulse Generator</b>									0	0		Non pulse generator
									3	0		Open-collector pulse generator : Factored pulse (pulse width 1ms), Unfactored pulse (pulse width 2ms)
									5	0		Open-collector pulse generator : Factored pulse (pulse width 50ms), Unfactored pulse (pulse width 2ms)
									6	0		Open-collector pulse generator : Factored pulse (pulse width 100ms), Unfactored pulse (pulse width 2ms)
									7	0		Open-collector pulse generator : Factored pulse (pulse width 250ms), Unfactored pulse (pulse width 2ms)
<b>Others</b>											A	Standard model (0~120°C)
											B	ANSI 150 RF
											C	High temperature model (0~150°C) Model 49~53 only

**Strainers Dedicated for Oil-Service FLOWPET-EG**

● **General**

Do not fail to directly couple a strainer upstream of the Flowpet-EG.

A strainer safeguards the Flowpet-EG against foreign particles and other suspended matter which could cause costly downtime.



● **Specifications**

Item		Description
<b>Operating Temp. Range (fluid temp.)</b>		0~120°C
<b>Max. Operating Pressure</b>		1.18MPa
<b>Material</b>	<b>Body</b>	Cast iron (FC250)
	<b>Net</b>	SUS304
<b>Finish</b>		Munsell 2.5 YR 6/13

● **Product Code, Outline Dimensions [Unit in mm], Net Mesh, Pressure Losses**

Product Code No.	Nominal Size	Flange Rating	L	A	Approx. Weight kg	Net Mesh	Pressure Loss (kPa) at Max. Flowrate		Applicable Flowpet-NX
							Kerosene 1.2mPa·s	Heavy oil 19mPa·s	
SS5277A	20A	JIS 10K RF	125	85	3.4	80	6( 1600L/h)	50( 2000L/h)	LS4976-4□0A
		ANSI 150 RF	115						LS5076-4□0A
SS5377A	25A	JIS 10K RF	140	105	5.3	60	7( 3000L/h)	28( 3800L/h)	LS5276-4□0A
		ANSI 150 RF	133						
SS5577A	40A	JIS 10K RF	170	130	7.7	60	23(11000L/h)	26( 14000L/h)	LS5376-4□0A
		ANSI 150 RF	166						LS5576-4□0A
SS5677A	50A	JIS 10K RF	190	140	9.6	60	25( 20000L/h)	40( 24000L/h)	LS5676-4□0A
		ANSI 150 RF	189						

# FLOWPET-EG for Water Service

LS□□77-4□0A

## ● Flow Ranges

Model	Nominal Size mm	Flange Rating	Flow Range L/h
LS5277-4□0A	20	JIS 10K RF	200~1200
LS5377-4□0A	25	JIS 10K RF	600~3600
LS5577-4□0A	40	JIS 10K RF	1200~7200
LS5677-4□0A	50	JIS 10K RF	2000~12000

## ● Meter Specifications

Item		Description
Operating Temp. Range (fluid temp.)		0~120°C
Max. Operating Pressure		1.18MPa (with static running water)
Linearity		±1% of RD
Materials	Body	Broze (BC 2)
	Rotors	Special resin
	Register Housing	Polycarbonate
Flow Directions *		Standard : Right → left    Option : left → right, bottom → top, top → bottom
Finish		Munsell 2.5 YR 6/13

⚠ Install the meter such that the pipe always remains filled with water. See instruction manual if changing flow direction is desired.  
The meters can not be used to measure steam flow.

## ● Electronic Register : Units of Count and Pulse Output Units

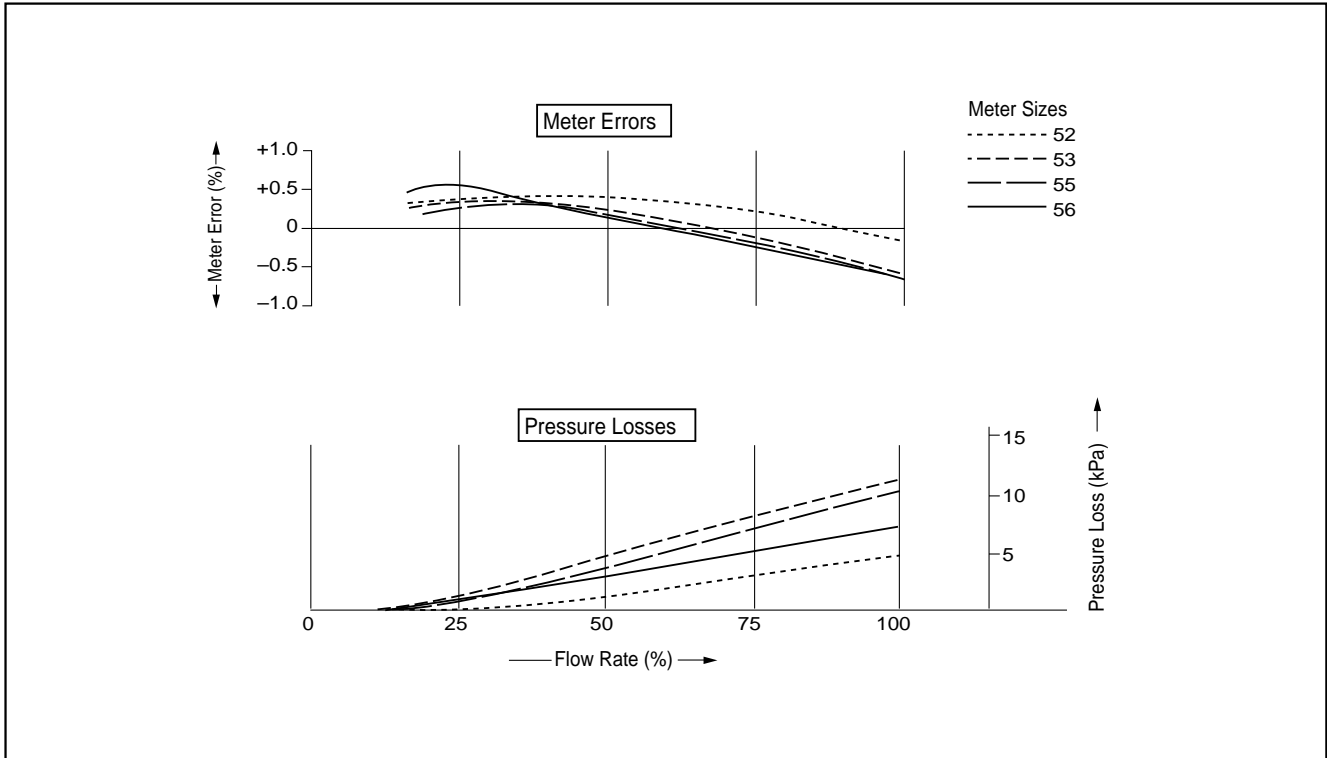
□ Option

Model	Nom. Size, mm	Totalizer Resolution	Output Pulse						Register Full Scales		Max. Flowrate L/h	
			Factored Output Pulse		Unfactored Pulse Width		Unfactored Output Pulse		Units of Instantaneous Flowrate L			
			Pulse Units	Output Freq. at Max. Flowrate	1ms	50ms	100ms	250ms	Nom. Meter Factor	Output Freq. at Max. Flowrate		/h (mode b1)
LS5277-4□0A	20	999999.99	10mL/P	33.3	○	—	—	9.918mL/P	33.6Hz	1	0.01	1200
		9999999.9	100mL/P	3.33	○	○	○					
		99999999	1L/P	0.33	○	○	○					
LS5377-4□0A	25	9999999.9	100mL/P	10.0	○	○	—	17.955mL/P	55.75Hz	1	0.01	3600
		99999999	1L/P	1.00	○	○	○					
		99999999	10L/P	0.10	○	○	○					
LS5577-4□0A	40	99999999	100mL/P	20.0	○	—	—	35.496mL/P	56.3Hz	1	0.01	7200
		99999999	1L/P	2.00	○	○	○					
		99999999	10L/P	0.20	○	○	○					
LS5677-4□0A	50	999999.99	100mL/P	33.3	○	—	—	76.455mL/P	43.6Hz	1	0.01	12000
		99999999	1L/P	3.33	○	○	○					
		99999999	10L/P	0.33	○	○	○					

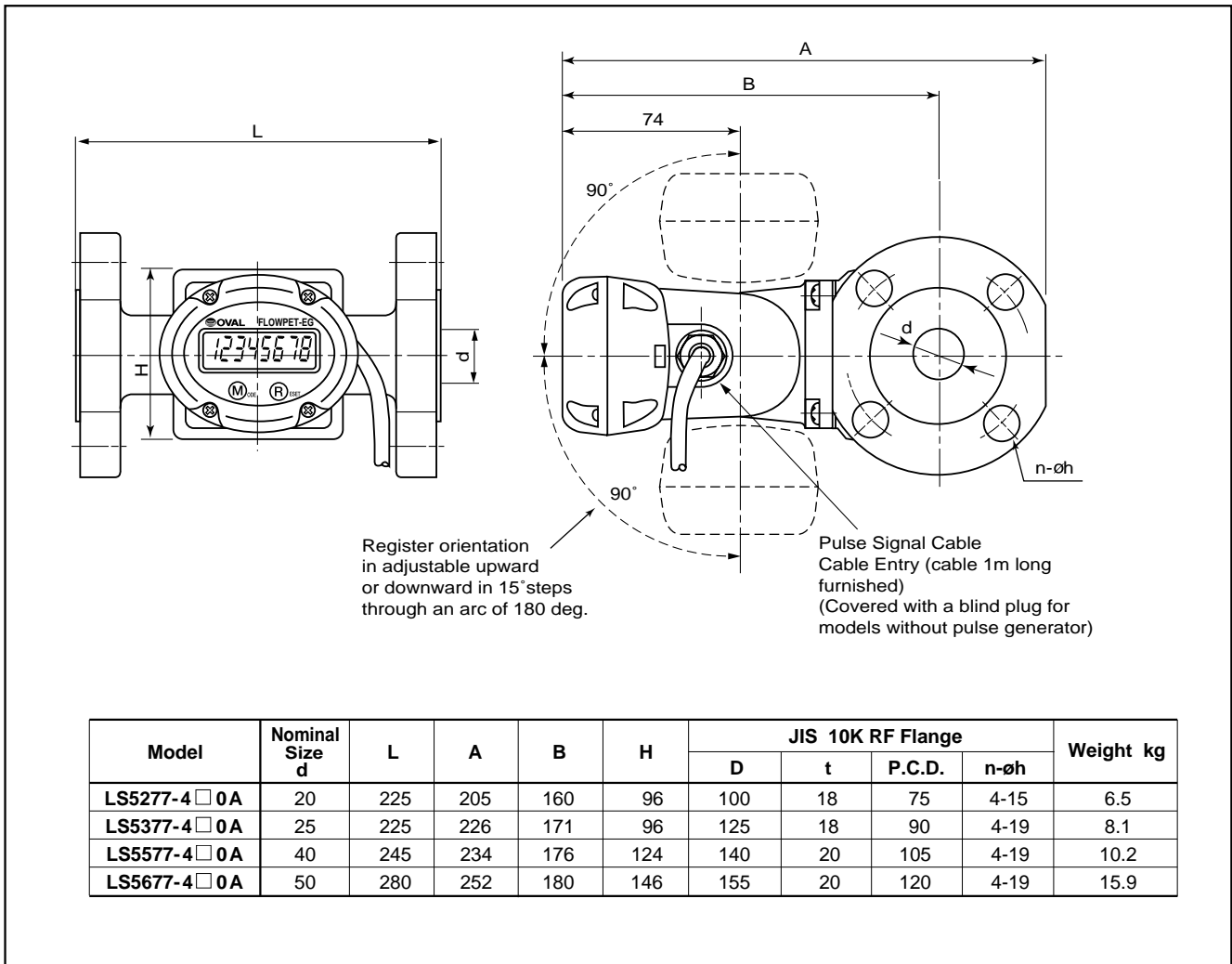
## ■ APPLICABLE EN DIRECTIVES

Applicable EU Directive	Electro-Magnetic Compatibility Directive : 89/336/EEC, 92/31/EEC, 93/68/EEC
Applicable EN standards, etc.	Electro-Magnetic Compatibility Directive EN55011 : 1998/A1 : 1999, Group 1, Class B EN61000-6-2 : 2001

● Meter Errors and Pressure Losses



● Outline Dimensions [Unit in mm]



● **Product Code Explanation**

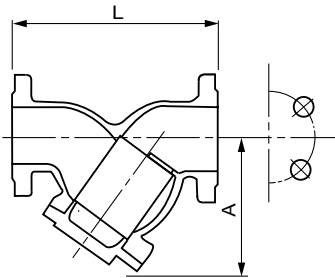
Item	Code No.										Description	
	①	②	③	④	⑤	⑥	—	⑦	⑧	⑨		⑩
<b>Model</b>	L	S										Dedicated OVAL flowmeter
<b>Meter Size</b>	5	2										20A JIS 10K RF
	5	3										25A JIS 10K RF
	5	5										40A JIS 10K RF
	5	6										50A JIS 10K RF
<b>Model Name</b>			7									Flowpet
<b>Application</b>				7	—							Water service
<b>Type of Register</b>						4						Electronic register (EG Type)
<b>Pulse Generator</b>	0	0										Less pulse generator
	3	0										Open-collector pulse generator : Factored pulse (pulse width 1ms), Unfactored pulse (pulse width 2ms)
	5	0										Open-collector pulse generator : Factored pulse (pulse width 50ms), Unfactored pulse (pulse width 2ms)
	6	0										Open-collector pulse generator : Factored pulse (pulse width 100ms), Unfactored pulse (pulse width 2ms)
	7	0										Open-collector pulse generator : Factored pulse (pulse width 250ms), Unfactored pulse (pulse width 2ms)
<b>Others</b>										A		Always "A"

□ **Strainers Dedicated for Water-Service Flowpet-EG**

● **General**

Do not fail to directly couple a strainer upstream of the Flowpet-EG.

A strainer safeguards the Flowpet-EG against foreign particles and other suspended matter which could cause costly downtime.



● **Specifications**

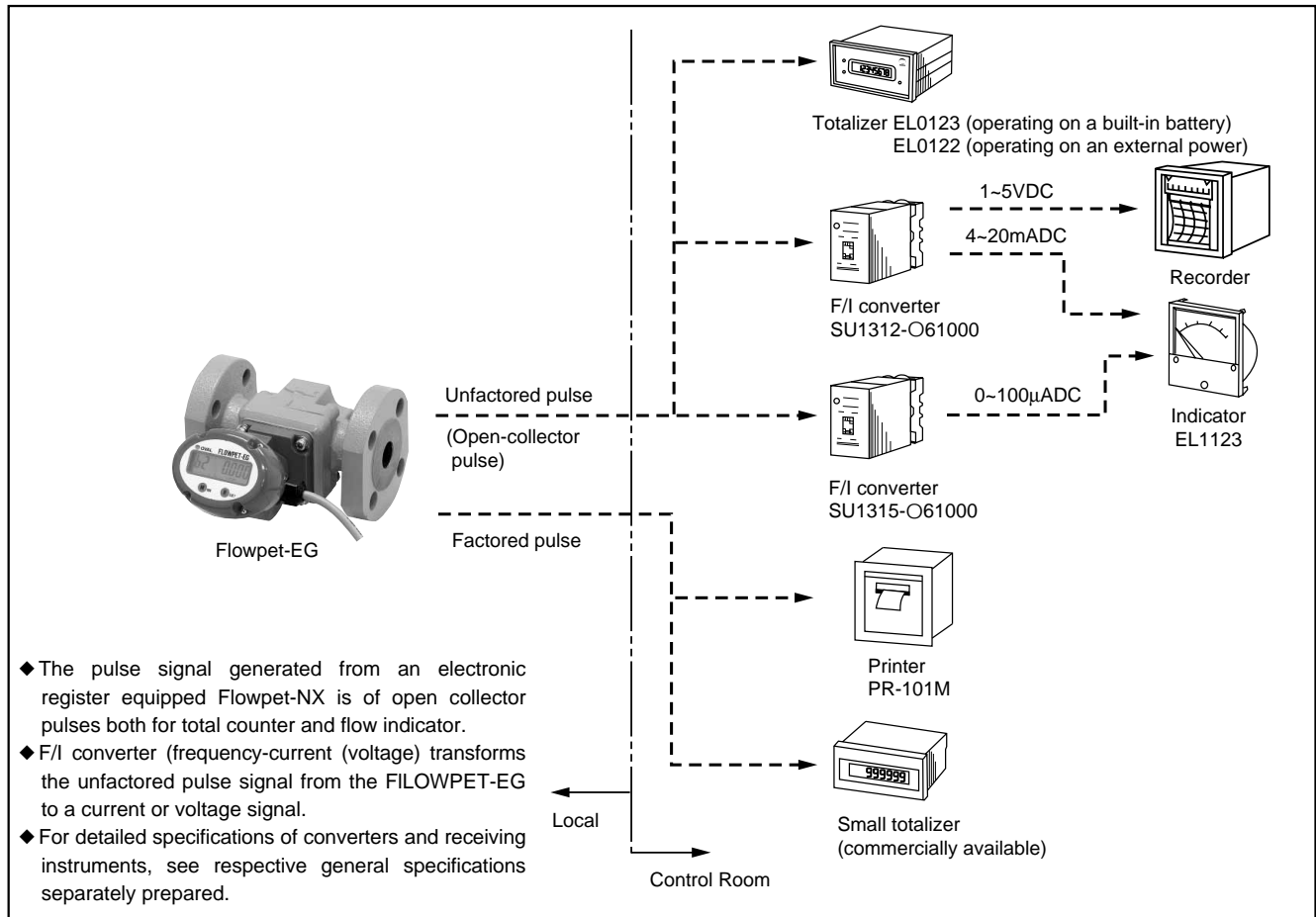
Item		Description
<b>Operating Temp. Range (fluid temp.)</b>		0 ~ 120°C
<b>Max. Operating Pressure</b>		1.18MPa
<b>Materials</b>	<b>Body</b>	Cast iron (FC250)
	<b>Net</b>	SUS304
<b>Finish</b>		Munsell 2.5YR 6/13

● **Product Code, Outline Dimensions [Unit in mm], Net Mesh, Pressure Losses**

Product Code	Nominal Size	Flange Rating	L	A	Approx. Weight kg	Net Mesh	Max. Flowrate L/h	Pressure Loss at Max. Flowrate kPa	Applicable Flowpet-NX
SS5277A	20A	JIS 10K RF	125	85	3.4	80	1200	2	LS5277-3□0A
SS5377A	25A	JIS 10K RF	140	105	5.3	60	3600	6	LS5377-3□0A
SS5577A	40A	JIS 10K RF	170	130	7.7	60	7200	6	LS5577-3□0A
SS5677A	50A	JIS 10K RF	190	140	9.6	60	12000	6	LS5677-3□0A

## ■ REMOTE FLOW MEASUREMENT WITH FLOWPET-EG

Pulse generator equipped FLOWPET-EG provides the operator with a quick indication of the process for absolute control of water or oil supply at a remote location.



## ■ OPERATING PRECAUTIONS

**To derive maximum benefit and safety of operation from the FLOWPET-EG, we recommend that the following precautions be taken:**

1. From the flow ranges and operating ranges of the flowmeter, strainer and other available data, select the right pump and valve location to ensure that the required flowrate, pressure and other factors be maintained and that excessive flow rates, pressure rises or other damaging conditions be prevented.
2. In cold regions, take due precautions against freezing. If thermal insulation on meter body is desired, see the instruction manual for the meter. The meter body and strainer are not serviceable at subzero temperatures.
3. Locate the flowmeter itself and signal cable sufficiently away from sources of large magnetic fields (e.g., pumps, electric motor-driven and solenoid valves).  
(For example, keep a solenoid valve 10 watts or so in power consumption at least 10 centimeters away.)
4. Acceptable fluids depend on the type of flowmeter. The Flowpet-EG is primarily designed for boiler feed water and fuel oil. If you have any other application in mind, consult our nearest sales office or agent.
5. Not serviceable for certifying and authenticating legal transactions by the Measurement Law.
6. This register operates over a temperature range -10 to +60°C. In locations where the register is potentially exposed to elevated temperatures by direct sunshine, reflected heat, or other heat source, provide an appropriate sunshade.
7. For outdoor installation, provide a protection against dewdrops. Use within the specified temperature range.
8. This meter has no subtract counter capability. If pulsation (fluduation of flow rate due to the effect of pressure change) or reverse flow of the fluid flow occurs within the pipeline, the total flow reading may be inconsistent.

The specification as of Ougust, 2007 is stated in this GS Sheet. Specifications and design are subject to change without notice.

**Sales Representative:**