General Specifications

Model DY
Model DYA
Vortex Flowmeter

digitalYEWFLO

GS 01F06A00-01EN

Model DY-D,DY-E
Integral Type

Model DYA
Remote Type Converter

Model DY-N
Remote Type Detector

Model DY/R1, DY/R2
Reduced Bore Type

Based on the field proven technology

digitalYEWFLO, combines the field proven sensor and body assembly used in more than 300,000 units installed worldwide, with an unique digital electronics including **SSP (Spectral signal processing)*** technology. digitalYEWFLO provides high accuracy and stability, even in harsh process conditions. Combined with high reliability and robust design, it delivers improvements in plant efficiency and reduced operating costs.
digitalYEWFLO Multi-Variable Type (OPTION:/MV) build in temperature sensor, so that temperature measurement and Mass Flow calculation is available.
digitalYEWFLO Reduced Bore Type (OPTION:/R1, /R2) Integrated and casting construction with concentric reduced bore piping.
It benefits piping cost reduction and lower flow range.

* SSP is YOKOGAWA's original technology for digital signal processing.

■ FEATURES

- New functions with **SSP (Spectral Signal Processing)** technology :
  SSP is built into the powerful electronics of digitalYEWFLO. SSP analyses the fluid conditions inside digitalYEWFLO and uses the data to automatically select the optimum adjustment for the application, ***providing features never before realized in a vortex flowmeter***.
  SSP accurately senses vortices in the low flow range, providing outstanding flow stability.
- Advanced Self-diagnostics :
  The application condition, such as high pipeline vibration and abnormal flow, is predicted and indicated.
- High Accuracy :
  ±0.75% of Reading (Liquid)
  (±0.5% of Reading : Typical Accuracy/ Non-Guaranteed)
  ±1% of Reading (Gas, Steam)
- Wide Process Temperature Range :
  High temperature version up to 450°C
  Cryogenic version minimum –196°C
- Simple Parameter settings :
  Frequently-used selections grouped together in a quick-access format decreases commissioning time.
- Clear, Concise Indicator :
  Simultaneous flow rate or temperature (Option) and total flow rate along with process diagnosis conveniently displayed.
- Dual output for Analog / Pulse:
  Simultaneous output for flow rate or temperature (Option) and pulse.
- Alarm output, Status output (Flow switch)
  An alarm signal output, in case alarm occurs.
- No moving parts stainless steel detector : High durable and safety.
- Remote cable length 30m maximum.
- Explosion proof construction, JIS / FM / CENELEC ATEX (KEMA) / CSA / SAA (Explosion proof / Intrinsically safe).
- Communication function includes FOUNDATION™*1 fieldbus, BRAIN and HART*2 protocol.
  Refer to GS01F06F01-01E for Fieldbus communication type marked with "◇".
  *1 FOUNDATION is a registered trade mark of FOUNDATION Fieldbus.
  *2 HART is a registered trade mark of the HART Communication Foundation.

Contents

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[MULTI-VARIABLE TYPE] (OPTION)

digtalYEWFLO build in temperature sensor (Pt1000) in the vortex shedder bar.
Temperature measuremt and Mass Flow Calculation by temperature is available. (Refer to P.10)

- digtalYEWFLO build in steam trend, and Mass measurement of saturated steam and super heat steam (Mass Flow Calculation)
- Accuracy of digtalYEWFLO Multi-Variable type is ±0.5% of rate for temperature measurement, ±2% of rate for Mass Flow Calculation (saturated steam).

[REDUCED BORE TYPE] (OPTION)

Integrated and casting construction with concentric reduced bore piping makes ;

- Cost reduction and safety improvement: expand low flowrate region
- Replace work and cost reduction: the same face-to-face dimension with standard type.

■STANDARD SPECIFICATIONS

Performance Specifications

Fluid to be Measured :
Liquid, Gas, Steam (Avoid Multiphase Flow and Sticky Fluids)

Measuring Flow Rates :
Refer to Table 6

Accuracy : ±0.75% of Reading (Liquid)
±1% of Reading (Gas, Steam)
Refer to P.13.
When Multi-Variable Type is selected, refer to P.13.

Repeatability : ± 0.2% of Reading

Calibration :
This flowmeter is factory-calibrated using a water flow.
Temperature and flow calibration by water flow when Multi-Variable Type is selected.

Normal Operating Condition

Process Temperature Range :
–29 to 250 °C (general)
–196 to 100 °C (Cryogenic Version:option)
–29 to 450 °C (High Process Temperature Version:option)
When Multi-Variable Type is selected, refer to P.10.
Refer to Figure 1 for integral converter type.

Process Pressure Limit :
–0.1MPa (–1 kg/cm^2) to flange rating.

Ambient Temperature Range :
–29 to 85 °C (Remote type detector)
–40 to 85 °C (Remote type converter)
–29 to 85 °C (Integral type, refer to Figure 1)
–29 to 80 °C (Integral type with Indicator, refer to Figure 1)
–30 to 80 °C (Remote type converter with Indicator)

Ambient Humidity : 5 to 100% RH (at 40 °C) (No Condensation)

Power Supply Voltage (◇): 10.5 to 42 V DC
(Refer to Figure 2 ; Relationship Between Power Supply Voltage and Load Resistance)

Mechanical Specifications

Material (General Type):
Refer to Table.1

Wetted Parts:
Body; Stainless steel JIS SCS14A, ASTM CF8M
Shedder Bar; Duplex stainless steel [equivalent to JIS SUS329J1]
Size 15mm ASTM S31803
Size 25mm to 300mm DCS1*1, EN 1.4517
*1 DCS1 is a registered trademark of Daido Castings Co., Ltd.
Gasket: JIS SUS316 stainless steel with polytetrafluoroethylene (Teflon) coating.

Non-Wetted Parts:
Housing (Case, Cover):
Aluminum alloy JIS ADC12
Name Plate: Stainless steel JIS SUS304
DYA Mounting Bracket for 2B pipe:
Cold-reduced carbon steel sheet JIS SPCC, JIS SECC

Coating Color:
Housing:
Polyurethane corrosion-resistant coating
Deep sea moss green (Munsell 0.6GY 3.1/2.0)
DYA Mounting Bracket for 2B pipe:
Polyurethane corrosion-resistant coating
Frosty white (Munsell 2.5Y 8.4/1.2)

Degree of Protection:
IP67, NEMA4X, JIS C0920 watertight protection.

Hazardous Area Classifications:
Refer to item “Option Specifications”

Electrical Connection:
JIS G1/2 female, ANSI 1/2 NPT female, ISO M20 × 1.5 female

Signal Cable:
Model DYC cable, used for remote detector and converter.
Max. length : 30 m.
Outer Sheath Material: Heat resisting polyethylene
Durable Temperature : –40 to 150 °C

Weight:
Refer to item “External Dimensions”.

Mounting:
Integral type and Remote type detector :
Flange mounting or wafer mounting by flange adjacent to the pipeline.
Remote type converter : 2 inch pipe mounting.

Electrical Specifications

Note*: Pulse output,alarm output and status output use the common terminal, therefore these functions are not used simultaneously.

Output Signal (◇): Dual Output (Both Analog and Transistor contact output can be obtained simultaneously). In this case refer to the item

"Remarks on installation" for power supply and pulse output wiring.

Analog : 4 to 20 mA DC, 2-wire system.

Transistor Contact Output* :

Open collector, 3-wire system.
Pulse,alarm,status output are selected by parameter setting.
Contact rating: 10.5 to 30 V DC, 120 mA DC
Low level: 0 to 2 V DC. (refer to Figure3)

Communication Requirements :

Communication Signal :

BRAIN or HART communication signal (superimposed on a 4 to 20 mA DC signal)

Note: HART is a registered trademark of the HART Communication Foundation.

Conditions of Communication Line :

Load Resistance :

250 to 600 Ω(including cable resistance).
Refer to Figure 2.

Supply Voltage :

16.4 to 42 V DC for digital communications BRAIN and HART protocols .(16.4 to 30 V DC for intrinsically safe type).
Refer to Figure 2.

BRAIN:

Space from other Power Line: 15cm or more (Parallel wiring should be avoided.)

Communication Distance :

Up to 2 km,when polyethylene insulated PVC-sheathed cables (CEV cables) are used.Communication distance varies depending on type of cable used and wiring.

Load Capacitance: 0.22 μF or less

Load Inductance: 3.3 mH or less

Input Impedance Communicating Device:

10 kΩ or more at 2.4 kHz.

HART Protocol Revision

HART protocol revision can be selected from 5 or 7 when ordering. ("-J" only)
The protocol revision can be changed by user configuration.

Note: Protocol revision supported by HART configuration tool must be the same or higher than that of the digitalYEWFLO.

	Protocol revision supported by HART configuration tool	
	5	7
DY or DYA HART 5	Available	Available
DY or DYA HART 7	Not Available	Available

Functions:

Damping Time Constant :

0 to 99 Sec (63% response time)

Note: Delay time is 0.5 Sec.
Analog output circuit time constant is 0.3 Sec.

Pulse Output Function*:

Pulse output is selected from scaled pulse, unscaled pulse, frequency (number of pulses output per second at 100% of output).
Pulse frequency : Max 10 kHz
Duty cycles : Approx.50% (1:2 to 2:1)

Self-diagnostics and Alarm Output *:

In case alarm (over range output signal, EEPROM error, vibration noise, abnormal flow such as clogging, bubble) occurs, an alarm signal is output and indicated.
The alarm signal output goes from close(ON) to open(OFF) during alarming.

Analog Output Function:

Analog output is selected from flowrate and temperature value when option code /MV is selected.

Status Output Function *:

Flow Switch:

In case flow rate decreases under the flow set value,a status signal is output.
Status signal output mode can reverse (ON/OFF) .

Data Security During Power Failure:

Data (parameter, totalizer value, etc) storage by EEPROM. No back-up battery required.

Correction:

Instrument Error Correction:

Vortex flowmeter instrument errors can be corrected by segment approximations.

Reynolds Number Correction:

Output error at Reynolds number 20000 or less is corrected by using five-break-point line-segment approximation.

Gas Expansion Correction:

When measuring a compressibility gas and steam, this expansion factor is useful to correct the error at high velocity of flow (35m/s or more).

Down-scale or Up-scale burn out.

In case a CPU or EEPROM failure occurs, flow meter output the signal of Up-scale (21.6 mA or more).
Up-scale or Down-scale (3.6 mA or less) is user-selectable through the fail mode alarm jumper.

Indicator:

Flow rate (% or engineering units) or temperature value and totalizer can be indicated simultaneously.
Short message for self diagnostics indicated.
Local parameter setting can be operated by key switches.
In mounting direction, the right and left 90° is rotatable.

EMC Conformity Standards:

EN61326-1 Class A, Table 2 (For use in industrial locations), EN61326-2-3
EN55011 Class A Group 1

Note1: This instrument is a Class A product, and it is designed for use in the industrial environment. Please use this instrument in the industrial environment only.

Note2: Use the metal conduit for the remote cable.

Pressure Equipment Directive:

Notified Body Identification Number 0038
Module H

MODEL	DN(mm)*	PS(MPa)*	PS-DN(MPa-mm)	CATEGORY**
DY015	15	42	630	Article 3,*** Paragraph 3
DY025	25	42	1050	Article 3,*** Paragraph 3
DY040	40	42	1680	II
DY050	50	42	2100	II
DY080	80	42	3360	II
DY100	100	42	4200	II
DY150	150	42	6300	III
DY200	200	42	8400	III
DY250	250	42	10500	III
DY300	300	42	12600	III

T00.EPS

* PS: Maximum allowable pressure for Flow tube, DN: Nominal size

** Refered to Table 6 coverd by ANNEX II of EC Directive on Pressure Equipment Directive 97/23/EC

*** DY015 and DY025 are not regulated by PED.

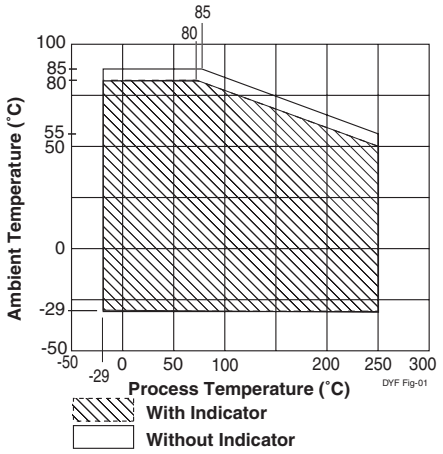


Figure 1 Ambient Temperature limit (Integal Type)

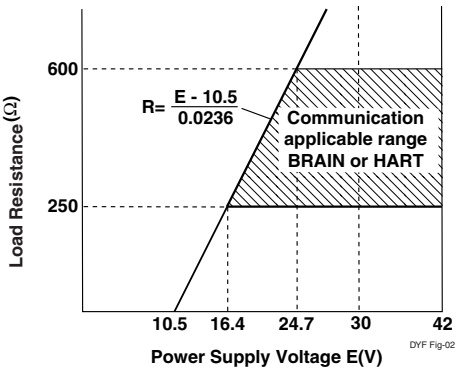


Figure 2 Relationship Between Power Supply and Load Resistance

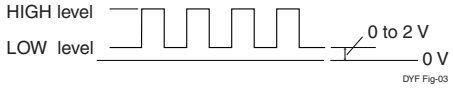


Figure 3 High and low level (Pulse output)

■ Model and Suffix Codes

DY Vortex Flowmeter (Integral Type, Remote type detector)

Model	Suffix Codes	Description
DY015	·····	Size 15 mm (1/2 inch)
DY025	·····	Size 25 mm (1 inch)
DY040	·····	Size 40 mm (1-1/2 inch)
DY050	·····	Size 50 mm (2 inch)
DY080	·····	Size 80 mm (3 inch)
DY100	·····	Size 100 mm (4 inch)
DY150	·····	Size 150 mm (6 inch)
DY200	·····	Size 200 mm (8 inch)
DY250	·····	Size 250 mm (10 inch)
DY300	·····	Size 300 mm (12 inch)
Output Signal /Commu-nication	-D ·····	4 to 20 mA DC, Pulse, BRAIN Communication
	-E ·····	4 to 20 mA DC, Pulse, HART Communication *1
	-J ·····	4 to 20 mA DC, Pulse, HART 5/HART 7 Communication *2
	-F ·····	Digital communication (FOUNDATION Fieldbus protocol) *3
	-N ·····	Remote type detector
Body Material *8	A ·····	JIS SCS14 A *4
	B ·····	ASTM CF8M *5
	X ·····	Others *6
Shedder bar Material *8	L ·····	Duplex Stainless Steel
	E ·····	Duplex Stainless Steel (for TIIS Approval)
	X ·····	Others *7
Process Connection *9 RF : Raised Face SF : Smooth Finish RJ : Ring Joint	AJ1 ·····	JIS 10 K Wafer
	AJ2 ·····	JIS 20 K Wafer
	AJ4 ·····	JIS 40 K Wafer
	AA1 ·····	ANSI Class 150 Wafer
	AA2 ·····	ANSI Class 300 Wafer
	AA4 ·····	ANSI Class 600 Wafer
	AD1 ·····	DIN PN10 Wafer
	AD2 ·····	DIN PN16 Wafer
	AD3 ·····	DIN PN25 Wafer
	AD4 ·····	DIN PN40 Wafer
	BJ1 ·····	JIS 10K Flange(RF)
	BJ2 ·····	JIS 20K Flange(RF)
	BJ4 ·····	JIS 40K Flange(RF)
	BA1 ·····	ANSI Class 150 Flange(RF)
	BA2 ·····	ANSI Class 300 Flange(RF)
	BA4 ·····	ANSI Class 600 Flange(RF)
	BA5 ·····	ANSI Class 900 Flange(RF)
	BS1 ·····	ANSI Class 150 Flange(RF, SF)
	BS2 ·····	ANSI Class 300 Flange(RF, SF)
	BS4 ·····	ANSI Class 600 Flange(RF, SF)
	BS5 ·····	ANSI Class 900 Flange(RF, SF)
	BD1 ·····	DIN PN10 Flange(RF)
	BD2 ·····	DIN PN16 Flange(RF)
	BD3 ·····	DIN PN25 Flange(RF)
	BD4 ·····	DIN PN40 Flange(RF)
	CA4 ·····	ANSI Class 600 Flange(RJ)
	CA5 ·····	ANSI Class 900 Flange(RJ)
Electrical Connection *10	-0 ·····	JIS G 1/2 Female
	-2 ·····	ANSI 1/2 NPT Female *11
	-4 ·····	ISO M20×1.5 Female
Indicator *12	D ·····	With Indicator
	N ·····	None Indicator, Remote type detector
Options	/□	Refer to Option Specifications

DYF Tab-01

DYA Vortex Flowmeter Converter(Remote Type)

Model	Suffix Code	Description
DYA	·····	Vortex Flowmeter Converter (Remote Type)
Output Signal /Commu-nication	-D ·····	4 to 20 mA DC, Pulse BRAIN Communication
	-E ·····	4 to 20 mA DC, Pulse HART Communication *1
	-J ·····	4 to 20 mA DC, Pulse HART 5/HART 7 Communication *2
	-E ·····	Digital communication (FOUNDATION Fieldbus protocol) *3
Electrical Connection *10	0 ·····	JIS G 1/2 Female
	2 ·····	ANSI 1/2 NPT Female *11
	4 ·····	ISO M20 ×1.5 Female
Indicator	D ·····	With Indicator
	N ·····	None Indicator
Options	/□	Refer to Option Specifications
	/MV	Multi-Variable Type *13

DYC Signal Cable

Model	Suffix Code	Description
DYC	·····	Signal Cable
Cable End	-0 ·····	Without End finish *14
	-1 ·····	With End finish
Cable Length *15	-05 ·····	5 m
	-10 ·····	10 m
	-15 ·····	15 m
	-20 ·····	20 m
	-25 ·····	25 m
	-30 ·····	30 m
	-35 ·····	35 m
	-40 ·····	40 m
	-45 ·····	45 m
	-50 ·····	50 m
	-55 ·····	55 m
	-60 ·····	60 m
	-65 ·····	65 m
	-70 ·····	70 m
	-75 ·····	75 m
	-80 ·····	80 m
	-85 ·····	85 m
	-90 ·····	90 m
	-95 ·····	95 m
Options	/C1 ·····	Cable End Finish Parts 1 set
	/C2 ·····	2 set
	/C3 ·····	3 set
	/C4 ·····	4 set
	/C5 ·····	5 set
	/C6 ·····	6 set
	/C7 ·····	7 set
	/C8 ·····	8 set
	/C9 ·····	9 set
	/MV ·····	Multi-variable Type

DYF Tab-02

* 1 : Output signal code '-E': HART 5. (Output signal code '-J' is recommended for HART communication.)
* 2 : Output signal code '-J': HART 5 or HART 7 selectable. Specify HART 5 or HART 7 when ordering.
* 3 : For FOUNDATION Fieldbus protcol, refer to GS 01F06F01-01E. For Fieldbus communication type, there are not setting keys on the display board.
* 4 : In case of A (JIS SCS14A), the process connection is available for JIS (AJ1, AJ2, AJ4, BJ1, BJ2, BJ4)
* 5 : In case of B (ASTM CF8M), the process connection is available for ANSI (AA1 to 4, BA1 to 5, BS1 to 5, CA4 to 5) and DIN (AD1 to 4, BD1 to 4).
* 6 : Refer to Table 1. In case of /NC or /HY or /HT or /LT, select X (others).
* 7 : Refer to Table 1. In case of /NC or /HY or /HT or /LT, select X (others).
* 8 : Users must consider the characteristics of selected wetted parts material and the influence of process fluids. The use of inappropriate materials can result in the leakage of corrosive process fluids and cause injury to personnel and/or damage to plant facilities. It is also possible that the instrument itself can be damaged and that fragments from the instrument can contaminate the user's process fluids.
Be very careful with highly corrosive process fluids such as hydrochloric acid, sulfuric acid, hydrogen sulfide, sodium hypochlorite, and high-temperature steam (150°C [302°F] or above). Contact Yokogawa for detailed information of the wetted parts material.
* 9 : Refer to Table 2.
*10 : In case of an explosion protect type, it depends for an electrical connecion on the kind of an explosion protect type. Refer to " OPTION SPECIFICATION (HAZARDOUS AREA CLASSIFICATIONS)"
*11 : In case of /FF1 or /CF1, the screw length is deeper than ANSI standard for 0.5 to 3.5 threads.
*12 : Indicator is not available for remote type detector.
*13 : DYA-□□□/MV and DY□□□-N***/MV should be combined.
*14 : One set of end finish part is attached.
*15 : DYC Cable can be used up to 30m. When you divide the cable below 30m, select the Cable End code [-0].

Table 1 Body, Shedder bar, Gasket Material

Body Material

Model (Note 3)			Standard (Note 1)	Anti-corrosion version II (/HY) (Note 2)	High process temperature version (/HT) (Note 2)	Cryogenic version (/LT) (Note 2)	Compliance with NACE (/NC)
DY015	DY025/R1	DY040/R2	**A** JIS SCS14A **B** ASTM CF8M	**X** (Note 2) JIS SCS14A ASTM CF8M	—	**X** (Note 2) DIN1.4308 (JIS SCS13)	**B** ASTM CF8M
DY025	DY040/R1	DY050/R2			**X** (Note 2) JIS SCS14A ASTM CF8M		
DY040	DY050/R1	DY080/R2					
DY050	DY080/R1	DY100/R2					
DY080	DY100/R1	DY150/R2					
DY100	DY150/R1	DY200/R2					
DY150	DY200/R1	—		—		—	
DY200	—	—		—		—	
DY250	—	—		—	—	—	—
DY300	—	—		—	—	—	—

(Note1) In case of the suffix code of the body material is A, the code of the process connection is for one of AJ□, AJ□, BJ□, AP□ or BP□.
In case of the code B, process connection code is for one of AA□, BA□, BS□, CA□, AD□ or BD□.
(Note2) In cases of optional specifications code "/HY", "/HT", "/LT", select "X" for both body material code and shedder bar material code.
(Note3) Wafer type (Process Connection:A**): DY015-DY100, Flange type (Process Connection :B**) : DY015-DY300
Reduced bore type is Flange type only.
In case of the reduced bore type (/R1, /R2), refer to ■OPTION REDUCED BORE TYPE (P.12).

Shedder bar material

Model (Note 3)			Standard	TIIS Flame proof approval (/JF3)	Anti-corrosion version II (/HY) (Note 1)	High process temperature version (/HT) (Note 1)	Cryogenic version (/LT) (Note 1)	Compliance with NACE (/NC) (Note 1)
DY015	DY025/R1	DY040/R2	**L** ASTM S31803		**X** ASTM N10276	—	**X** ASTM N10276	**X** ASTM N10276
DY025	DY040/R1	DY050/R2	**L** DCS1 or **EN1.4517**	**E** **EN1.4517** (Note 2)	**X** ASTM CW-12MW	**X** ASTM CW-12MW	**X** ASTM CW-12MW	**X** ASTM CW-12MW
DY040	DY050/R1	DY080/R2						
DY050	DY080/R1	DY100/R2						
DY080	DY100/R1	DY150/R2						
DY100	DY150/R1	DY200/R2						
DY150	DY200/R1	—	**L** DCS1		—		—	
DY200	—	—			—		—	
DY250	—	—			—	—	—	—
DY300	—	—			—	—	—	—

(Note1) Select body code [X] and shedder bar code [X] for /HY, /HT, /LT and /NC.
(Note2) Select shedder bar code [E] in case of TIIS Flame proof type (/JF3) and general specification for DY025 to DY100.
Select [L] for other nominal sizes.
The combination of /JF3 and /HY, /HT, /LT and NC, select [X] according to Note1.
(Note3) Wafer type (Process Connection: A**): DY015-DY100, Flange type (Process Connection :B**) : DY015-DY300
Reduced bore type is Flange type only.
In case of the reduced bore type (/R1, /R2), refer to ■OPTION REDUCED BORE TYPE (P.12).

Gasket material

Model (Note 1)			Standard	Anti-corrosion version II (/HY)	High process temperature version (/HT)	Cryogenic version (/LT)	Compliance with NACE (/NC)
DY015	DY025/R1	DY040/R2	JIS SUS316 stainless steel with polytetra-fluoroethylene (Teflon) coating	JIS SUS316 stainless steel with polytetra-fluoroethylene (Teflon) coating	—	JIS SUS316 stainless steel with polytetra-fluoroethylene (Teflon) coating	JIS SUS316 stainless steel with polytetra-fluoroethylene (Teflon) coating
DY025	DY040/R1	DY050/R2			JIS SUS316 stainless steel plated with silver		
DY040	DY050/R1	DY080/R2					
DY050	DY080/R1	DY100/R2					
DY080	DY100/R1	DY150/R2					
DY100	DY150/R1	DY200/R2					
DY150	DY200/R1	—		—		—	
DY200	—	—		—		—	
DY250	—	—		—	—	—	—
DY300	—	—		—	—	—	—

(Note1) Wafer type (Process Connection:A**): DY015-DY100, Flange type (Process Connection :B**) : DY015-DY300
Reduced bore type is Flange type only.
In case of the reduced bore type (/R1, /R2), refer to ■OPTION REDUCED BORE TYPE (P.12).

T03.EPS

Table 2 Flowmeter Selection Guide

Process Connection	Wafer		Flange(Raised Face)				Flange(Ring Joint)		Flange(Raised Face, Smooth Finish)			
	Suffix Code	Model Code	Suffix Code	Model Code			Suffix Code	Model Code	Suffix Code	Model Code		
JIS 10 K	AJ1	DY015 up to DY100	BJ1	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	—	—	—	—		
JIS 20 K	AJ2	DY015 up to DY100	BJ2	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	—	—	—	—		
JIS 40 K	AJ4	DY015 up to DY100	BJ4	DY015 up to DY150			—	—	—	—		
ANSI Class 150	AA1	DY015 up to DY100	BA1	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	—	—	BS1	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2
ANSI Class 300	AA2	DY015 up to DY100	BA2	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	—	—	BS2	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2
ANSI Class 600	AA4	DY015 up to DY100	BA4	DY015 up to DY200			CA4	DY015 up to DY200	BS4	DY015 up to DY200		
ANSI Class 900	—	—	BA5	DY015 up to DY200			CA5	DY015 up to DY200	BS5	DY015 up to DY200		
DIN PIN 10	AD1	DY015 up to DY100	BD1	DY015 up to DY200			—	—	—	—		
DIN PIN 16	AD2	DY015 up to DY100	BD2	DY015 up to DY200			—	—	—	—		
DIN PIN 25	AD3	DY015 up to DY100	BD3	DY015 up to DY200			—	—	—	—		
DIN PIN 40	AD4	DY015 up to DY100	BD4	DY015 up to DY200			—	—	—	—		

(Note)
- ANSI standardized types are worked by serration finishing except the Smooth Finish type.
- The Smooth Finish type is shipped without serration finishing.
- Refer to “OPTION REDUCED BORE TYPE (/R1, /R2)” (P.11), when you select reduced bore type (/R1, /R2).

DYF Tab-04

■OPTION SPECIFICATIONS

Item	Specification	Applicable Model	Code
Multi-Variable Type (Note 5)	Build in Temperature sensor (Pt 1000) in vortex shedder bar.	DY / DYA	MV
Reduced bore type (Note 8) See P.11	Integrated and welded construction with concentric reduced bore piping. R1 : Detector size (B) is one meter body size down of digitalYEWFLO to flange pipe size (A).	DY	R1
	R2 : Detector size (B) is two meter body size down of digitalYEWFLO to flange pipe size (A).		R2
Stainless Steel Tag Plate (Note 1)	JIS SUS304 tag plate, hung on the case.	DY / DYA	SCT
Stainless Steel Bolt & Nut Assembly	JIS SUS304 bolt/nut assembly. Used when a wafer type is installed.	DY Wafer Type	BL
Paint Color Change	Only for the covers: See refer to Table.3	DY / DYA	See Table3
Hydrostatic / Pneumatic Test Certificate	Test pressure value is in accordance with Table 4. Test time: 10 minutes. Available for the general type. Test medium: Air, Nitrogen or Water.	DY	T01
Hydrostatic Test Certificate	Test pressure value is in accordance with Table 4. Test time: 10 minutes. Available for the general type. Test medium: Water.	DY	T02
Degrease Treatment (Note 2)	Degrease cleansing treatment.	DY	K1
Epoxy Coating	Epoxy coating for case and cover.	DY / DYA	X1
Pilling up coating to keep off corrosion	Epoxy and Polyurethane coating for the purpose of corrosion - proof improvement; salt damage, alkali, climate and acidity	DY/DYA	X2
High Process Temperature Version (Note 7)	For Liquid and Steam (NOT for Gas) This specification temperature is from -29 to +450 ℃ Refer to Table 1 , Figure 4. Refer to Table 5 for minimum velocity. In case of another size, please contact to YOKOGAWA sales person.	DY***-N	HT
Cryogenic Version	This specification temperature is from -196 to +100 ℃ Refer to Table 1 , Figure 5. In case of another size, please contact to YOKOGAWA sales person.	DY***-N	LT
Stainless Steel Bracket for Remote Conveter (DYA)	The bracket material for remote converter type (DYA) is JIS SUS304.	DYA	SB
Lightning Protector	There is an arrester inside converter for power supply line. Maximum power supply voltage : 30VDC	DY***-D,E / DYA	A
Compliance with NACE	Compliance with NACE (MR01-75). Refer to Table 1.	DY	NC
Compliance with NAMUR (Note 6)	Compliance with NAMUR43. Current signal for measurement is 4mA up to 20.5mA. Set output 3.6mA or less when burn-out occurred.	DY / DYA	NM
Anti-corrosion Version II	Anti-corrosion Version II. Refer to Table 1.	DY	HY
Converter Installing Direction 180° Change (Note4)	Converter installing direction 180° change inversely when shipped.	DY	CRC
Down-scale burn-out in CPU or EEPROM failure (Note 3)	Set output 3.6mA or less when burn-out occurred.	DY***-D,E / DYA	C1
Stainless steel housing (Note 9)	Converter housing, case and cover material: JIS SCS14A or ASTM, ASME CF8M stainless steel castings. (equivalent to JIS SUS316)	DY***-N / DYA	E1
Flameproof Packing Adapter	Power source connection port and signal cable (remote type) connection port. JIS G1/2 female thread. Other cable shape: ø 8 to ø 12. G11 : One piece, G12 : Two pieces.	DY / DYA, / JF3	G11
			G12
Calibration Certificate	Level 2 Declaration and Calibration Equipment List	DY / DYA	L2
	Level 3 Declaration and Primary Standard List	DY / DYA	L3
	Level 4 Declaration and YOKOGAWA Measuring	DY / DYA	L4

DYF Tab-07-1

(Note 1) The specified Tag Number is engraved on the data plate and stainless tag plate. The limitation of characters for Tag Number is, for BRAIN communication or name plate, staimles steel tag plate: 16 characters, and for HART communication: 8 characters.
(Note 2) There is a case that calibration water should stay in the meter tube. So this is not degrease treatment in the strict sense.
(Note 3) The output is set 3.6mA or less (General type is set 21.6mA or more at shipping).
(Note 4) The electrical connection turn to a downstream side.
(Note 5) Refer to “OPTION MULTI-VARIABLE (BUILD IN TEMPERATURE SENSOR) TYPE (/MV)” (p.10)
In case of Remote type detector (DY***-N), select “/MV” both DY and DYA.
(Note 6) /NM can not combine with Remote type (DY***-N).
(Note 7) SAA Flameproof Approval (/SF1) can not combine with High Process Temperature Version (/HT).
(Note 8)
- Cryogenic version (/LT) is not available.
- High process temperature version (/HT) and Multi-variable type (/MV) for DY025/R1 and DY040/R2 is not available.
- Explosion protected types, SAA (/SF1,/SS1) are not available.
- Flange type only and available process connections are JIS10k, 20k (BJ1, BJ2) and ANSI150, 300 (BA1,BA2,BS1,BS2).
- Model Code (A) means “DY***-” nominal size.

(Note 9)
- Applicable for Option code /FF1, /KF1, /KS1 and /KN1.
- Not applicable for Option code /P1, /P2, /P7, /X1, /X2, /HT, /LT, /SB /JF3, /FS1, /CF1, /CS1, /CF11, /CS11, /SF1, /SS1.
- The materials of exterior parts, name plate, screw, bolts on the stainless steel housing and bracket, u-bolt, nuts for DYA/E1 and tag plate for /E1/SCT are JIS SUS316 or SUS316L.

Item	Specification		Applicable Model	Code
Material certificates: Mill sheets	Each certificate to be attached produced by the vendors.		DY	
	Item to be specified	1. Meterbody		M01
		1. Meterbody, 2. Shedder bar		M02
		1. Meterbody, 2. Shedder bar, 3. Bottom plug		M03
		1. Meterbody, 2. Shedder bar, 3. Bottom plug, 4. Welding rod		M04
Material certificates: 3.1B	3.1B certificate to be attached according to EN10204. Each certificate to beattached produced by the vendors.		DY	
	Item to be specified	1. Meterbody		E01
		1. Meterbody, 2. Shedder bar		E02
		1. Meterbody, 2. Shedder bar, 3. Bottom plug		E03
		1. Meterbody, 2. Shedder bar, 3. Bottom plug, 4. Welding rod		E04
PAMI test certificate	Positive Material Identification certificate to be attached for the main 3 chemical components of specified materials. Each certificate to be attached.		DY	
				PM1
	Item to be specified	1. Meterbody		PM2
		1. Meterbody, 2. Shedder bar		
ASME welding documents submission	1. Welder/Welding Operator Performance Qualification (or Welder Qualification Record) 2. Welding Procedure Specification (WPS) 3. Procedure Qualification Record (PQR) Each certificate to be attached. The customer's name and job name to be specified when ordered.		DY	WP
	Item to be specified	1. Welded portion for the bottom plug 2. Welded portion for the flange in case of the welding construction		
Dye Penetrant test certificate	Dye Penetrant test certificate for the welded portion to be attached. Each certificate to be attached.		DY 2. is for DY250 and DY300.	PT
	Item to be specified	1. Welded portion for the bottom plug 2. Welded portion for the flange in case of the welding construction		

DYF Tab-07-2

Table 3 Paint Color and Codes

Codes	Munsell Renotation Code	Color
P1	N1.5	Black
P2	7.5BG4/1.5	Jade green
P7	————	Metallic silver

DYF Tab-08

Table 4 Test Pressure Value

Flange Rating	Pressure
JIS 10 K	2.1 MPa {21 kgf/cm^2}
JIS 20 K	5.0 MPa {51 kgf/cm^2}
JIS 40 K	10.0 MPa {102 kgf/cm^2}
ANSI Class 150	2.9 MPa {29 kgf/cm^2}
ANSI Class 300	7.5 MPa {76 kgf/cm^2}
ANSI Class 600	14.9 MPa {152 kgf/cm^2}
ANSI Class 900	22.4 MPa {228 kgf/cm^2}
DIN PN 10	1.5 MPa {15 kgf/cm^2}
DIN PN 16	2.4 MPa {24 kgf/cm^2}
DIN PN 25	3.8 MPa {38 kgf/cm^2}
DIN PN 40	5.9 MPa {60 kgf/cm^2}

DYF Tab-09

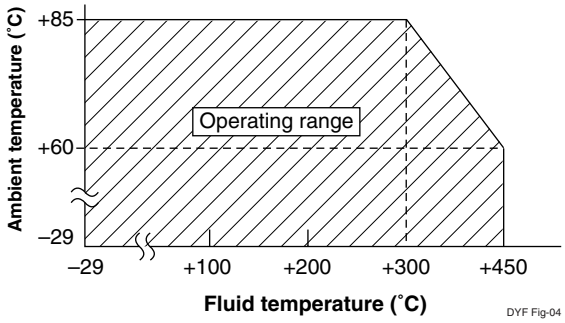


Figure 4 Fluid temperature range of high process temperature version

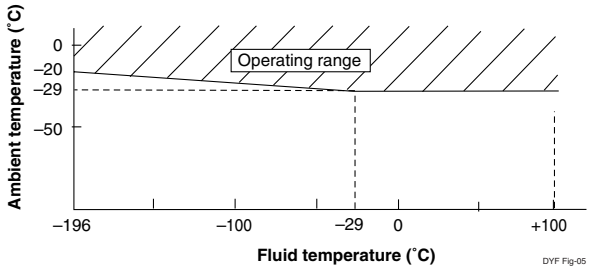


Figure 5 Fluid temperature range of cryogenic version

■ OPTION MULTI-VARIABLE (BUILD IN TEMPERATURE SENSOR) TYPE (/MV) (*1)

This options is the same as standard specification except the following items.

		Multi-variable Type					Standard Type
Size		Wafer Type	25mm to 100mm				15mm to 100mm
		Flange Type	25mm to 200mm				15mm to 300mm
Function		Only for indication and output	Mass Flow calculation. (Volumetric flowrate at Standard condition for GAS)				
Fluid	Type	Liquid, Gas Saturated Steam Superheat Steam	Saturated Steam	Superheat Steam	Gas	Liquid	Liquid, Gas Saturated Steam Superheat Steam
	Selectable Flow Unit		kg, t, lb, klb	kg, t, lb, klb	Nm^3, kNm^3, M Nm^3, Nℓ, Sm^3, kSm^3, MSm^3, Sℓ, Scf, kscf, Mscf N: Normal S: Standard	kg, t, lb, klb	
Temperature Range		–29 to 250°C	100 to 250°C	100 to 250°C	–29 to 250°C	–29 to 250°C	–29 to 250°C
Accuracy (*2)	Mass Flow		Refer to P.14				
	Temperature		±0.5% OF RATE	±1% OF RATE	±1°C (Less than 100°C) ±1% OF RATE (100°C or more)	±0.5°C (Less than 100°C) ±0.5% OF RATE (100°C or more)	
Temperature Response (50% response)		60sec (Churning Underwater)					
Mass Flow Calculation Method			Density Calculation (*3)	Density Calculation (Constant pressure is assumed) (*4)	Temp.-Pressure Correction (Constant pressure is assumed) (*5)	Density change Calculation (*6)	
Output	Analog Output	Select from Flow rate or temperature (*7)					Only for Flow Rate
	Pulse Output	Only for Flow rate					Only for Flow Rate
	Alarm Output	Standard Alarm+Error of thermometer etc.					Only for Standard
	StatusOutput	Only for Flow Switch					Flow Switch
Display	Upper	Select from Flow rate (%,Engineering Unit) or Temperature (%) (*8)					Only for Flow Rate
	Lower	Select from Total Rate or temperature (°C, °F) (*9)					Only for Total Rate
Remote Type		Flow Converter : Select DYA-□□□/MV Signal Cable : Select DYC-□□□/MV (*10)					

T09.eps

(*1) When /MV is selected /HT, /LT is not available.

(*2) For detailed accuracy, see “SIZING”. Measurement temperature is changed by the heat-insullation method of piping and piping method. Refer to “REMARKS ON INSTALLATION” about heat-insullation.In case of the Mass Flow measurement of saturated steam and superheat steam, it is necessary to make a heat-insullation.

(*3) Mass Flow rate is calculated from density values by temperature measurment using saturated steam table.

(*4) Mass Flow rate is calculated from density values to temperature measured by using steam table.In order to measure superheated steam, it is necessary to make canstant pressure value.A pressure value which is indicated by order sheet is used.

(*5) In order to measure gas, Pressure-Temperature correction is carried out. It is it is necessary to make constant pressure value.
A pressure values at operational condition, temperature and pressure value at standard condition which is indicated by order sheet is used.

(*6) In order to measure mass flowrate of liquid application, the density at normal condition is used, and if fluid temperature deviates from normal temperature density values is calculated by 2 dimensional equation. In this case, temperature coefficient should be prepared by user’s side.

(*7) Default setting is Flow rate. It is necessary to change the parameter of output in case of setting temperature output.

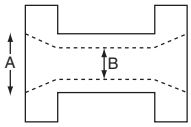
(*8) In case of indicating the temperature %, the display indicate not only “%” but also “t” . (“t” is the means of temperature)

(*9) Default setting is “temperature” but “Total “ is setup when ordering the Total Rate.

(*10) In case of Multi variable(/MV), it is necessary to setup the parameter of Cable Length.

■OPTION REDUCED BORE TYPE (/R1, /R2) (Note 1)

This option is the same as standard specification except the following items.

	Reduced bore type (Option Code: /R1, /R2)			
Model Code (Note 2) 	Flange piping size (A)	R1 Detector size (inner dia.) (B)	R2 Detector size (inner dia.) (B)	[Pressure Loss] R1: about 15% increases to standard type. R2: about 28% increases to standard type. see P.16
	DY025	15 (14.6) (mm) (Note 3)		
	DY040	25 (25.7) (mm)	15 (14.6) (mm) (Note 3)	
	DY050	40 (39.7) (mm)	25 (25.7) (mm)	
	DY080	50 (51.1) (mm)	40 (39.7) (mm)	
	DY100	80 (71) (mm)	50 (51.1) (mm)	
	DY150	100 (93.8) (mm)	80 (71) (mm)	
	DY200	150 (138.8) (mm)	100 (93.8) (mm)	
Measurable minimum flow velocity	Liquid, Gas, Steam		Refer to table 5.	
Range of measurable flow velocity	Liquid, Gas, Steam		Refer to table 6.	

T10-1.EPS

(Note 1) For detailed accuracy, see “SIZING”. Not available for /LT.
Not available for /SF1, /SS1

(Note 2) Flange type only: JIS10K,20K (BJ1,BJ2) and ANSI150,300 (BA1,BA2,BS1,BS2)
MS Code [*] of “DY***-” means flange piping size.

(Note 3) High process temperature version (/HT) and Multi-variable type (/MV) for DY025/R1 and DY040/R2 are not available.

■ SIZING

The following items are the basic specifications.
In case of the definite sizing, it is neccessary to check by the sizing software.

■ Measurable minimum flow velocity

Table 5 Relationship between Minimum Velocity and Density (In case of "Gas, Steam", Use the Large of the Two Values)

Model Code			Liquid		Gas, Steam	Steam
			General Type, Cryogenic Type (unit: m/s) (Note)	High Process Temperature Version (unit: m/s)	General Type, Cryogenic Type (unit: m/s) (Note)	High Process Temperature version (unit: m/s)
DY015	DY025-/R1	DY040-/R2	$\sqrt{250/\rho}$	—	$\sqrt{80/\rho}$ or 3	—
DY025	DY040-/R1	DY050-/R2	$\sqrt{122.5/\rho}$	$\sqrt{490/\rho}$	$\sqrt{45/\rho}$ or 2	$\sqrt{125/\rho}$ or 2
DY040	DY050-/R1	DY080-/R2	$\sqrt{90/\rho}$	$\sqrt{302.5/\rho}$	$\sqrt{31.3/\rho}$ or 2	$\sqrt{90.3/\rho}$ or 2
DY050	DY080-/R1	DY100-/R2	$\sqrt{90/\rho}$	$\sqrt{160/\rho}$	$\sqrt{31.3/\rho}$ or 2	$\sqrt{61.3/\rho}$ or 2
DY080	DY100-/R1	DY150-/R2	$\sqrt{90/\rho}$	$\sqrt{160/\rho}$	$\sqrt{31.3/\rho}$ or 2	$\sqrt{61.3/\rho}$ or 2
DY100	DY150-/R1	DY200-/R2	$\sqrt{90/\rho}$	$\sqrt{160/\rho}$	$\sqrt{31.3/\rho}$ or 2	$\sqrt{61.3/\rho}$ or 2
DY150	DY200-/R1	—	$\sqrt{90/\rho}$	$\sqrt{160/\rho}$	$\sqrt{31.3/\rho}$ or 3	$\sqrt{61.3/\rho}$ or 3
DY200	—	—	$\sqrt{122.5/\rho}$	$\sqrt{202.5/\rho}$	$\sqrt{45/\rho}$ or 3	$\sqrt{80/\rho}$ or 3
DY250	—	—	$\sqrt{160/\rho}$	—	$\sqrt{61.3/\rho}$ or 3	—
DY300	—	—	$\sqrt{160/\rho}$	—	$\sqrt{61.3/\rho}$ or 3	—

DYF Tab-10

ρ : Density at operating conditions (kg/m^3)
Liquid density is 400 up to 2000kg/m^3
(Note) Reduced bore type (/R1 and /R2) are not available to combine for Cryogenic type (/LT.)

■ Range of measurable flow velocity

Table 6 Range of measurable flow velocity

Fluid	Model Code			Minimum flow velocity	Maximum flow velocity (Note)
Liquid	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	"flow velocity obtained from Table.5" or "flow velocity at Reynolds number of 5000", whichever is greater. For liquid Reynolds number of 5000 : See P.14 "Calculation formula".	10 m/s
Gas, Steam	DY015 up to DY300	DY025-/R1 up to DY200-/R1	DY040-/R2 up to DY200-/R2	"flow velocity obtained from Table.5" or "flow velocity at Reynolds number of 5000", whichever is greater. For Gas and steam Reynolds number of 5000 : See P.14 "Calculation formula".	80 m/s

DYF Tab-11

When the flow velocity is lower than minimum, both the analog output and the pulse output is displayed as zero "0".

■ Range of fixed accuracy flow velocity

Table 7 Range of fixed accuracy flow velocity

Fluid	Model Code			Minimum flow velocity	Maximum flow velocity (Note)
Liquid	DY015 up to DY100	DY025-/R1 up to DY150-/R1	DY040-/R2 up to DY200-/R2	"flow velocity obtained from Table.5" or "flow velocity at Reynolds number of 20000", whichever is greater. For liquid Reynolds number of 20000 : The value is four times velocity value in P.14 "Calculation formula".	10 m/s
	DY150 up to DY300	DY200-/R1	—	"flow velocity obtained from Table.5" or "flow velocity at Reynolds number of 40000", whichever is greater. For liquid Reynolds number of 40000 : The value is eight times velocity value in P.14 "Calculation formula".	
Gas, Steam	DY015 up to DY100	DY025-/R1 up to DY150-/R1	DY040-/R2 up to DY200-/R2	"flow velocity obtained fromTable.5" or "flow velocity at Reynolds number of 20000", whichever is greater. For gas and steam Reynolds number of 20000 : See P.14 "Calculation formula".	80 m/s
	DY150 up to DY300	DY200-/R1	—	"flow velocity obtained fromTable.5" or "flow velocity at Reynolds number of 40000", whichever is greater. For gas and steam Reynolds number of 40000 : See P.14 "Calculation formula".	

DYF Tab-12

■ Detailed Accuracy (for Table 7 Range of Fixed Accurancy Flow Velocity.)

Volumetric flow rate at operation condition

<table>
<tr><th></th><th>Model Code</th><th>General Type</th><th>Multi-Variable Type (/MV)</th><th>Reduced Bore Type (/R1)</th><th>Reduced Bore Type (/R2)</th></tr>
<tr><td rowspan="11">Liquid</td><td>DY015</td><td>± 1.0%
(20000 ≦ Re < 2000*D)
± 0.75%
(2000*D ≦ Re)</td><td></td><td></td><td></td></tr>
<tr><td>DY025</td><td>± 1.0%
(20000 ≦ Re < 1500*D)
± 0.75%
(1500*D ≦ Re)</td><td>± 1.0%
(20000 ≦ Re < 1500*D)
± 0.75%
(1500*D ≦ Re)</td><td rowspan="5">± 1.0%
(20000 ≦ Re)</td><td></td></tr>
<tr><td>DY040</td><td rowspan="4">± 1.0%
(20000 ≦ Re < 1000*D)
± 0.75%
(1000*D ≦ Re)</td><td rowspan="4">± 1.0%
(20000 ≦ Re < 1000*D)
± 0.75%
(1000*D ≦ Re)</td><td rowspan="5">± 1.0%
(20000 ≦ Re)</td></tr>
<tr><td>DY050</td></tr>
<tr><td>DY080</td></tr>
<tr><td>DY100</td></tr>
<tr><td>DY150</td><td rowspan="4">± 1.0%
(40000 ≦ Re < 1000*D)
± 0.75%
(1000*D ≦ Re)</td><td rowspan="4">± 1.0%
(40000 ≦ Re < 1000*D)
± 0.75%
(1000*D ≦ Re)</td></tr>
<tr><td>DY200</td><td>± 1.0%
(40000 ≦ Re)</td></tr>
<tr><td>DY250</td><td></td><td></td></tr>
<tr><td>DY300</td><td></td><td></td><td></td></tr>
<tr><td rowspan="10">Gas, Steam</td><td>DY015</td><td rowspan="10">± 1.0%
(Velocity 35m/s or less)
± 1.5%
(Velocity 35m/s up to 80m/s)</td><td></td><td></td><td></td></tr>
<tr><td>DY025</td><td rowspan="8">± 1.0%
(Velocity 35m/s or less)
± 1.5%
(Velocity 35m/s up to 80m/s)</td><td rowspan="8">± 1.0%
(Velocity 35m/s or less)
± 1.5%
(Velocity 35m/s up to 80m/s)</td><td rowspan="8">± 1.0%
(Velocity 35m/s or less)
± 1.5%
(Velocity 35m/s up to 80m/s)</td></tr>
<tr><td>DY040</td></tr>
<tr><td>DY050</td></tr>
<tr><td>DY080</td></tr>
<tr><td>DY100</td></tr>
<tr><td>DY150</td></tr>
<tr><td>DY200</td></tr>
<tr><td>DY250</td><td></td><td></td></tr>
<tr><td>DY300</td><td></td><td></td><td></td></tr>
</table>

DYF Tab-13

D : Inner diameter of digitalYEWFLO detecter (mm)
Re: Reynolds number (non unit)
Note: This table shows the accuracy of pulse output. In case of analog output, add up ± 0.1% of full scale to the values mentioned above.
Guarantee conditions of liquid volumetric flow rate: the accuracy of a product before shipment in our water actual test facility.
Totalized value of 2000 pulse or greater, straight pipe length: upper 10D or greater, lower 5D or greater, Fluid temp. 20 ± 10degC
Gas, Steam : The accuracy which is add up from liquid measurement accuracy.
The accuracy is confirmed by actual measured value of typical nominal size.

Mass flow or Volumetric flow rate at Normal/Standard condition:
for Multi-Variable Type and combination of Multi-Variable Type and Reduced Bore Type

<table>
<tr><th></th><th>Model Code</th><th>Multi-VariableType (/MV)</th><th>Multi-VariableType (/MV) / Reduced Bore Type (/R1)</th><th>Multi-VariableType (/MV) / Reduced Bore Type (/R2)</th></tr>
<tr><td rowspan="7">Liquid</td><td>DY025</td><td>± 2.0% (20000 ≦ Re <1500*D)
± 1.5% (1500*D ≦ Re)</td><td></td><td></td></tr>
<tr><td>DY040</td><td rowspan="3">± 2.0% (20000 ≦ Re <1000*D)
± 1.5% (1000*D ≦ Re)</td><td rowspan="4">± 2.0% (20000 ≦ Re)</td><td></td></tr>
<tr><td>DY050</td><td rowspan="4">± 2.0% (20000 ≦ Re)</td></tr>
<tr><td>DY080</td></tr>
<tr><td>DY100</td></tr>
<tr><td>DY150</td><td rowspan="2">± 2.0% (40000 ≦ Re <1000*D)
± 1.5% (1000*D ≦ Re)</td></tr>
<tr><td>DY200</td><td>± 2.0% (40000 ≦ Re)</td></tr>
<tr><td rowspan="9">Gas, Steam</td><td>DY025</td><td rowspan="9">± 2.0% (Velocity 35m/s or less)
± 2.5% (Velocity 35m/s up to 80m/s)</td><td></td><td></td></tr>
<tr><td>DY040</td><td rowspan="8">± 2.0% (Velocity 35m/s or less)
± 2.5% (Velocity 35m/s up to 80m/s)</td><td></td></tr>
<tr><td>DY050</td><td rowspan="8">± 2.0% (Velocity 35m/s or less)
± 2.5% of (Velocity 35m/s up to 80m/s)</td></tr>
<tr><td>DY080</td></tr>
<tr><td>DY100</td></tr>
<tr><td>DY150</td></tr>
<tr><td>DY200</td></tr>
</table>

DYF Tab-13-b

D : Inner diameter of digitalYEWFLO detecter (mm)
Re: Reynolds number (non unit)
Note: This table shows the accuracy of pulse output. In case of analog output, add up ± 0.1% of full scale to the values mentioned above.

■ Calculation formula

■ How to calculate volume flow rate at operating conditions.

• $Qf = 3600 \times \upsilon \times S$ or $Qf = \frac{\upsilon \times D^2}{354}$

■ How to calculate the velocity of a Reynolds number.

• $\upsilon = 5 \times \nu / D$ (Reynolds number of 5000)

• $\upsilon = 20 \times \nu / D$ (Reynolds number of 20000)

• $\upsilon = 40 \times \nu / D$ (Reynolds number of 40000)

however

• $Re = \frac{354 \times 10^3 \times Qf}{\nu \times D}$ ..... (1)

• $\nu = \frac{\mu}{\rho f} \times 10^3$ ..... (2)

Qf : Volume flow rate at operating conditions (m^3/h)
D : Inner diameter of YEWFLO (mm)
S : Sectional area of YEWFLO(m^2)
υ : Flow velocity (m/s)
Re : Reynolds number (non unit)
ρf : Density at operating conditions (kg/m^3)
μ : Viscosity at operating conditions (mPa·s (cP))
ν : Kinematic viscosity at operating conditions ($10^{-6}m^2/s$ (cSt))

■ Typical fluid example

Table 8 Range of Measurable Water Flow Rate
(At standard condition of 15°C, ρ = 1000 kg/m^3)

Model Code			Measurable Flow Rate in m^3/h	Range of Fixed Accuracy Flow Rate in m^3/h
DY015	DY025-/R1	DY040-/R2	0.30 up to 6	0.94 up to 6
DY025	DY040-/R1	DY050-/R2	0.65 up to 18	1.7 up to 18
DY040	DY050-/R1	DY080-/R2	1.3 up to 44	2.6 up to 44
DY050	DY080-/R1	DY100-/R2	2.2 up to 73	3.3 up to 73
DY080	DY100-/R1	DY150-/R2	4.3 up to 142	4.6 up to 142
DY100	DY150-/R1	DY200-/R2	7.5 up to 248	7.5 up to 248
DY150	DY200-/R1	—	17 up to 544	18 up to 544
DY200	—	—	34 up to 973	34 up to 973
DY250	—	—	60 up to 1506	60 up to 1506
DY300	—	—	86 up to 2156	86 up to 2156

DYF Tab-14-b

Table 9 Range of Measurable Air Flow Rate at Selected Process Pressures

Model Code			Flow Rate Limits	Minimum and Maximum Measurable Flow Rate in Nm³/h									
				0 MPa	0.1 MPa	0.2 MPa	0.4 MPa	0.6 MPa	0.8 MPa	1 MPa	1.5 MPa	2 MPa	2.5 MPa
DY015	DY025 -/R1	DY040 -/R2	min.	4.8(11.1)	6.7(11.1)	8.2(11.1)	10.5(11.1)	12.5	16.1	19.7	28.6	37.5	46.4
			max.	48.2	95.8	143	239	334	429	524	762	1000	1238
DY025	DY040 -/R1	DY050 -/R2	min.	11.0(19.5)	15.5(19.5)	19.0(19.5)	24.5	29.0	33.3	40.6	59.0	77.5	95.9
			max.	149	297	444	739	1034	1329	1624	2361	3098	3836
DY040	DY050 -/R1	DY080 -/R2	min.	21.8(30.0)	30.8	37.8	48.7	61.6	79.2	97	149	184	229
			max.	356	708	1060	1764	2468	3171	3875	5634	7394	9153
DY050	DY080 -/R1	DY100 -/R2	min.	36.2(38.7)	51	62.4	80.5	102	131	161	233	306	379
			max.	591	1174	1757	2922	4088	5254	6420	9335	12249	15164
DY080	DY100 -/R1	DY150 -/R2	min.	70.1	98.4	120	155	197	254	310	451	591	732
			max.	1140	2266	3391	5642	7892	10143	12394	18021	23648	29274
DY100	DY150 -/R1	DY200 -/R2	min.	122	172	211	272	334	442	540	786	1031	1277
			max.	1990	3954	5919	9847	13775	17703	21632	31453	41274	51095
DY150	DY200 -/R1	—	min.	268	377	485	808	1131	1453	1776	2583	3389	4196
			max.	4358	8659	12960	21559	30163	38765	47365	68867	90373	111875
DY200	—	—	min.	575	809	990	1445	2202	2599	3175	4617	6059	7501
			max.	7792	15482	23172	38549	53933	69313	84693	123138	161591	200046
DY250	—	—	min.	1037	1461	1788	2306	3127	4019	4911	7140	9370	11600
			max.	12049	23939	35833	59611	83400	107181	130968	190418	249881	309334
DY300	—	—	min.	1485	2093	2561	3303	4479	5756	7033	10226	13419	16612
			max.	17256	34286	51317	85370	119441	153499	187556	272699	357856	443017

DYF Tab-15

(1) At standard conditions STP (0˚C. 1atm).
(2) Pressure listed is at process temperature of 0˚C.
(3) Maximum flow rate is the lower of 80 m/s.
(4) Minimum values are determined from Table 7. The values in parenthesis show the minimum linear flow rates (Re = 20,000 or 40,000) when they are higher than the minimum measurable flow rate.

Table 10 Range of Measurable Saturated Steam Flow Rate at Selected Process Pressures

Model Code			Flow Rate Limits	Minimum and Maximum Measurable Flow Rate in kg/h									
				0.1 MPa	0.2 MPa	0.4 MPa	0.6 MPa	0.8 MPa	1 MPa	1.5 MPa	2 MPa	2.5 MPa	3 MPa
DY015	DY025 -/R1	DY040 -/R2	min.	5.8(10.7)	7.0(11.1)	8.8(11.6)	10.4(12.1)	11.6(12.3)	12.8	15.3	19.1	23.6	28.1
			max.	55.8	80	129	177	225	272	390	508	628	748
DY025	DY040 -/R1	DY050 -/R2	min.	13.4(18.9)	16.2(20.0)	20.5	24.1	27.1	30	36	41	49	58
			max.	169.7	247.7	400	548	696	843	1209	1575	1945	2318
DY040	DY050 -/R1	DY080 -/R2	min.	26.5(29.2)	32	40.6	47.7	53.8	59	72	93	116	138
			max.	405	591	954	1310	1662	2012	2884	3759	4640	5532
DY050	DY080 -/R1	DY100 -/R2	min.	44.0	53	67.3	79	89	98	119	156	192	229
			max.	671	979	1580	2170	2753	3333	4778	6228	7688	9166
DY080	DY100 -/R1	DY150 -/R2	min.	84.9	103	130	152	171	189	231	300	371	442
			max.	1295	1891	3050	4188	5314	6435	9224	12024	14842	17694
DY100	DY150 -/R1	DY200 -/R2	min.	148	179	227	267	300	330	402	524	647	772
			max.	2261	3300	5326	7310	9276	11232	16102	20986	25907	30883
DY150	DY200 -/R1	—	min.	324	392	498	600	761	922	1322	1723	2127	2536
			max.	4950	7226	11661	16010	20315	24595	35258	45953	56729	67624
DY200	—	—	min.	697	841	1068	1252	1410	1649	2364	3081	3803	4534
			max.	8851	12918	20850	28627	36325	43976	63043	82165	101433	120913
DY250	—	—	min.	1256	1518	1929	2260	2546	2801	3655	4764	5882	7011
			max.	13687	19977	32243	44268	56172	68005	97489	127058	156854	186978
DY300	—	—	min.	1799	2174	2762	3236	3646	4012	5235	6823	8423	10041
			max.	19602	28609	46175	63397	80445	97390	139614	181960	224633	267772

DYF Tab-16

(1) Maximum flow rate is the lower of 80 m/s.
(2) Minimum values are determined from Table 7. The values in parenthesis show the minimum linear flow rates (Re = 20,000 or 40,000) when they are higher than the minimum measurable flow rate.

■ Reference

Table 11 Inner Diameter and Nominal value

Model Code			Inner Diameter mm	Nominal K-Factor Pulse/L	Nominal Pulse Rate	
					Hz/m/s	Hz/m³/h
DY015	DY025-/R1	DY040-/R2	14.6	376	62.7	104
DY025	DY040-/R1	DY050-/R2	25.7	65.6	35.5	19.1
DY040	DY050-/R1	DY080-/R2	39.7	18.7	23.1	5.19
DY050	DY080-/R1	DY100-/R2	51.1	8.95	18.3	2.49
DY080	DY100-/R1	DY150-/R2	71.0	3.33	13.2	0.925
DY100	DY150-/R1	DY200-/R2	93.8	1.43	9.88	0.397
DY150	DY200-/R1	—	138.8	0.441	6.67	0.123
DY200	—	—	185.6	0.185	5.00	0.0514
DY250	—	—	230.8	0.0966	4.04	0.0268
DY300	—	—	276.2	0.0563	3.37	0.0156

DYF Tab-14

■ Pressure Loss

Calculation of pressure loss for general type

obtained from the following equations.

$\Delta P = 108 \times 10^{-5} \cdot \rho_f \cdot \upsilon^2$ ····· (1)

or

$\Delta P = 135 \times \rho_f \cdot \frac{Q_f^2}{D^4}$ ····· (2)

where,

ΔP : Pressure loss (kPa)
ρ_f : Density at operating condition (kg/m³)
υ : Flow velocity (m/s)
Q_f : Actual flow rate (m³/h)
D : Internal Diameter of detector (mm)

(Example)

DY050, hot water: 80°C, flowrate: 30 m³/h

1. Since the density of water at 80°C is 972 kg/m³, substitute this value in equation (2):

$\Delta P = 135 \times 972 \times 30^2 / 51.1^4$
$= 17.3$ kPa

2. Obtain the pressure loss using equation (1). The flow velocity when the flow rate is 30 m³/h is given by:

$\upsilon = 354 \times Q_f / D^2 = \frac{354 \times 30}{51.1^2} = 4.07$ m/s

Therefore, substitute this value in equation (1):

$\Delta P = 108 \times 10^{-5} \times 972 \times 4.07^2$
$= 17.3$ kPa

Calculation of pressure loss for reduced bore type (Option code: /R1)

obtained from the following equations.

$\Delta P = 124 \times 10^{-5} \times \rho_f \times \upsilon^2$ ····· (3)

or

$\Delta P = 155 \times \rho_f \times Qf^2 / D^4$ ····· (4)

(Example)

DY040-/R1, hot water: 50 deg C, flowrate: 10 m³/h

1. Since the density of water at 50 deg C is 992 kg/cm³, substitute this value in equation (4):

$\Delta P = 155 \times 992 \times 10^2 / 25.7^4$
$= 35.3$ kPa

2. Obtain by using equation (3). The flow velocity when the flow rate is 10 m³/h is given by:

$\upsilon = 354 \times Qf \times / D^2 = 354 \times 10 \times 25.7^2$
$= 5.4$ m/s

Therefore, substitute this value in equation (3):

$\Delta P = 124 \times 10^{-5} \times 992 \times 5.4^2$
$= 35.3$ kPa

Calculation of pressure loss for reduced bore type (Option code: /R2)

obtained from the following equations.

$\Delta P = 138 \times 10^{-5} \cdot \rho_f \cdot \upsilon^2$ ····· (5)

or

$\Delta P = 173 \times \rho_f \cdot \frac{Q_f^2}{D^4}$ ····· (6)

(Example)

DY050-/R2, hot water: 50 deg C, flowrate: 15 m³/h

1. Since the density of water at 50 deg C is 992 kg/cm³, substitute this value in equation (6):

$\Delta P = 173 \times 992 \times 15^2 / 25.7^4$
$= 88.5$ kPa

2. Obtain by using equation (5). The flow velocity when the flow rate is 20m³/h is given by:

$\upsilon = 354 \times Q_f / D^2 = \frac{354 \times 15}{25.7^2} = 8.0$ m/s

Therefore, substitute this value in equation (5):

$\Delta P = 138 \times 10^{-5} \times 992 \times 8.0^2$
$= 88.5$ kPa

■ Cavitation

(Minimum Back Pressure, Liquid service only):

Cavitation occurs when the flow line pressure is low and flow velocity is high during fluid measurement, preventing correct measurement of flow rate. The optimum line pressure can be obtained from the following equation.

$P = 2.7 \cdot \Delta P + 1.3 \cdot Po$ ..... (7)

Where,

P : Line pressure, 2 to 7 times as large as internal diameter on downstream of flowmeter body surface. (kPa absolute).

ΔP : Pressure loss (kPa). Refer to the item above.

Po : Saturation liquid vapor pressure at operating temperature (kPa absolute).

(Example) Confirmation of presence of cavitation

Suppose that the line pressure is 120 kPa abs and the flow rate scale is 0 to 30 m^3/h. It is only necessary to confirm the pressure at the maximum flow rate ; therefore, the saturated steam pressure of water at 80°C is as follows from the table of saturated steam pressures:

Po = 47.4 kPa abs

Therefore, substitute this value in equation (7):

$P = 2.7 \times 17.3 + 1.3 \times 47.4$

$= 108.3$ kPa abs

Since the operating pressure of 120 kPa abs is higher than 108.3 kPa abs, no cavitation occurs.

■ OPTION SPECIFICATIONS (For Explosion Protected type)

Item	Specification	Code
TIIS Certification	**TIIS Flame proof Approval** (Note 1) Flame proof Ex d IIC T6 Certified by TIIS. (TIIS is the abbreviation of Technology Institution of Industrial Safety.) Amb. Temp: –20 to 60°C Electrical connection: JIS G1/2 female	JF3
Factory Mutual (FM)	**FM Explosion proof Approval** Applicable Standard : FM3600, FM3611, FM3615, FM3810, Including Suppliment 1, ANSI/NEMA 250 Type of Protection : Explosion proof for Class I, Division 1, Groups A, B, C and D; Dust-ignitionproof Class II/III, Division 1, Groups E, F, and G. "SEAL ALL CONDUITS WITHIN 18 INCHES." "WHEN INSTALLED IN DIV.2, SEALS NOT REQUIRED." Enclosure Rating : NEMA TYPE 4X Temperature Code : T6 Ambient Temperature : –29 to 60°C (Integral Type Flowmeter and Remote Type Flowmeter) –40 to 60°C (Remote Type Converter) Ambient Humidity : 0 to 100%RH Maximum Working Pressure : 16MPa (DY015 to DY200) 5MPa (DY250 and DY300) Coating of Enclosure : Epoxy resin coating or Polyurethane resin coating. Electrical Connection : ANSI 1/2NPT female	FF1
	FM Intrinsically safe Approval (Note 2) Applicable Standard : FM3600, FM3610, FM3611, FM3810, ANSI/NEMA 250, IEC529, ANSI/ISA-60079-0, ANSI/ISA 60079-11 Type of Protection : Intrinsically Safe for Class I, II, III, DIV.1, Groups A, B, C, D, E, F and G, T4, and Class I, Zone 0, AEx ia IIC T4 Nonincendive for Class I, II, Div.2, Groups A, B, C, D, F and G, Class III, DIV.1, T4, and Class I, Zone 2, Groups IIC, T4 Ambient Temperature : –29 to +60°C (Integral Type Flowmeter) –29 to +80°C (Remote Type Flowmeter) –40 to +60°C (Remote Type Converter) Ambient Humidity : 0 to 100% RH (No condensation) Indoors and Outdoors : NEMA TYPE 4X Electrical Parameter : Vmax=30Vdc, Imax=165mAdc, Pi=0.9W, Ci=12nF, Li=0.15mH Electrical Connection : ANSI 1/2NPT female	FS1

DYF Tab-05-01.EPS

(Note 1) The flameproof packing adapter (/G11, G12) is necessary except the electrical conduit work. In case the ambient temperature exceeds 50deg.C, use heat resistant cables with maximum allowable temperature of 70degC or above.

(Note 2) For intrinsically safe approval, use the barrier certified by the testing laboratories (BARD-400 is not applicable).

■ Option Specifications (For Explosion Protected type)

Item	Specification	Code
CENELEC ATEX (KEMA)	**CENELEC ATEX(DEKRA) Explosionproof Approval** Applicable Standard : EN50014, EN50018 Type of protection : EExd IIC T6...T1(Integral Type Flowmeter and Remote Type Flowmeter) EExd IIC T6 (Remote Type Converter) Groups : Group II Category : Category 2G Temperature Class : T6...T1(Integral Type Flowmeter and Remote Type Flowmeter) T6(Remote Type Converter) Process temp.: T6; 85°C, T5;100°C; T4;135°C; T3;200°C;T2;300°C; T1;450°C (Use /HT version above 250°C) Degree of Protection of Enclosure : IP67 Tamb: –29 to +60°C (Integral Type Flowmeter and Remote Type Flowmeter) –30 to +60°C (Remote Type Converter) –29 to +60°C (Integral Type Flowmeter with indicator) –30 to +60°C (Remote Type Converter with indicator) Ambient Humidity : 0 to 100% RH Maximum working Pressure : 16MPa (DY015 to DY200) 5MPa (DY250 and DY300) Coating of Enclosure : Epoxy resin coating or Polyurethane resin coating. Electrical Connection : ANSI 1/2 NPT female, ISO M20 × 1.5 female.	KF1
	CENELEC ATEX(DEKRA) Intrinsically safe Approval (Note 1) Applicable Standard : EN50014, EN50020, EN50284 Type of protection : EEx ia IIC T4...T1(Integral Type Flowmeter and Remote Type Flowmeter) EEx ia IIC T4(Remote Type Converter) Groups : II Category : 1G Maximum Working Pressure : 16MPa (DY015 to DY200) 5MPa (DY250 and DY300) Tamb.(Integral Type Flowmeter) : –29 to +60°C Tamb.(Remote Type Flowmeter) : –29 to +80°C Tamb.(Remote Type Converter) : –40 to +60°C Ambient Humidity : 0 to 100%RH (No condensation) Process temp.: T4;135°C; T3;200°C; T2;300°C; T1; 450°C (Use /HT version above 250°C) For connection to certified Intrinsically Safe circuit with Signal/Supply and Pulse circuit of Integral Type Flowmeter and Remote Type Converter Ui=30Vdc, Ii=165mAdc, Pi=0.9W, Ci=6nF, Li=0.15mH Connect sensor circuit of DYA and DY-N(/HT) Maximum cable capacitance:160nF Electrical connection : ANSI 1/2NPT female, ISO M20 × 1.5 female.	KS1
	CENELEC ATEX (DEKRA) Type n Approval Applicable Standard : EN60079-15, EN60079-0 Type of protection : Ex nL IIC T4...T1 (Integral type flowmeter and Remote type flowmeter) Ex nL IIC T4 (Remote type converter) Groups : II Category : 3G Maximum working pressure : 16MPa (DY015 to DY200) 5MPa (DY250 and DY300) Ambient temperature: –29 to 60°C (Integral type flowmeter) –29 to 80°C (Remote type flowmeter) –40 to 60°C (Remote type converter) Ambient humidity : 0 to 100% RH (No condensation) Process temp.: T4;135°C; T3;200°C; T2;(*)300°C; T1(*); 450°C (*Use /HT version above 250°C) Degree of protection of enclosure: IP67 Maximum capacitance of cable: 160nF Electrical connection: ANSI 1/2NPT female, ISO M20×1.5 female	KN1

DYF Tab-05-02.EPS

(Note 1) For intrinsically safe approval, use the barrier certified by the testing laboratories (BARD-400 is not applicable).

■ Option Specifications (For Explosion Protected type)

Item	Specification	Code
Canadian Standards Association (CSA)	**CSA Explosion proof Approval** Applicable Standard : C22.1-98, C22.2 No.0, C22.2 No.0.4, C22.2 No.0.5, C22.2 No.25, C22.2 No.30, C22.2 No.94, C22.2 No.142, C22.2, No.61010-1, ANSI/ISA-12.27.01 Type of Protection: Explosionproof for Class I, Groups B, C and D; Class II, Groups E, F, and G; Class III. For Class I, Division 2 locations- "FACTRY SEALED, CONDUIT SEAL NOT REQUIRD" Enclosure : Type 4X Temperature Class: T6...T1 (Integral Type Flowmeter and Remote Type Flowmeter) T6 (Remote Type Converter) Amb.Temp.: –29 to +60°C (Integral Type Flowmeter and Remote Type Flowmeter) –40 to +60°C (Remote Type Converter) Process temp.: T6;85°C, T5;100°C, T4;135°C, T3;200°C, T2;300°C, T1; 450°C Enclosure: Type 4X Maximum working Pressure : 16MPa (DY015 to DY200) 5MPa (DY250 to DY300) Coating of Enclosure: Epoxy resin coating or Polyurethane resin coating. Electrical Connection: ANSI 1/2 female	CF1
	CSA Explosion proof Approval · The approval specification is the same with /CF1. · Process Sealing Certification Dual Seal Certified by CSA to the requirement of ANSI/ISA 12.27.01 No additional sealing required	CF11
	CSA Intrinsically safe Approval (Note 1) Applicable Standard : C22.2 No. 0.4, C22.2 No. 157, C22.2 No. 213, C22.2 No. 1010.1, CAN/CSA-E60079-0, CAN/CSA-E60079-11, CAN/CSA-E60079-15 and ANSI/ISA 12.27.01 Type of Protection: Ex ia IIC T4...T1 and Ex nC IIC T4...T1(Integral Type Flowmeter and Remote Type Flowmeter) Ex ia IIC T4 and Ex nC IIC T4(Remote Type Converter) Process Temp.: T4;135°C, T3;200°C, T2;300°C, T1;450°C (Integral Type Flowmeter and Remote Type Flowmeter) Amb. Temp.: –29 to +60°C (Integral Type Flowmeter and Remote Type Flowmeter) –40 to +60°C (Remote Type Converter) Amb. Hum. : 0 to 100%RH (No condensation) Degree of Protection of Enclosure:IP67 Electrical Parameter:Ui=30Vdc, Ii=165mAdc, Pi=0.9W, Ci=12nF, Li=0.15mH. Electrical Connection: ANSI 1/2 NPT female Type of Protection: Intrinsically Safe for Class I, II, III, DIV.1, Groups A, B, C, D, E, F and G Non-incendive for Class I, II, DIV.2, Groups A, B, C, D, E, F and G, ClassIII, DIV.1. Temperature Code: T4...T1(Integral Type Flowmeter and Remote Type Flowmeter) T4(Remote Type converter) Process Temp. : T4;135°C, T3; 200°C, T2; 300°C, T1; 450°C (Integral Type Flowmeter and Remote Type Flowmeter) Amb. Temp. : –29 to +60°C (Integral Type Flowmeter and Remote Type Flowmeter) : –40 to +60°C (Remote Type Converter) Amb. Hum.: 0 to 100%RH (No condensation) Enclosure: Type 4X Electrical Parameter:Vmax =30Vdc, I max =165mAdc, Pmax = 0.9W, Ci =12nF, Li = 0.15mH. Electrical Connection: ANSI 1/2 NPT female	CS1
	CSA Intrinsically safe Approval · The approval specification is the same with /CS1. · Process Sealing Certification Dual Seal Certified by CSA to the requirement of ANSI/ISA 12.27.01 No additional sealing required	CS11
Standards Association of Australia (SAA)	**SAA Flame proof Approval** (Note 2) Applicable Standard : AS 2380.1, AS2380.2 Ex d IIC T6...T1, IP67, Class I, Zone 1 Amb.Temp.: –29 to +60°C (Integral Type Flowmeter and Remote Type Flowmeter) : –40 to +60°C (Remote Type Converter) Max. process temp. : T6; 85°C, T5; 100°C, T4; 135°C, T3; 200°C, T2; 300°C, T1;450°C Electrical Connection: ANSI 1/2 NPT female, ISO M20 X 1.5 female	SF1
	SAA Intrinsically safe Approval (Note 2) Applicable Standard : AS 2380.1, AS 2380.7, AS 2380.9 Type of Protection: Ex ia IIC T4 IP67 (Integral Type Flowmeter, Remote Type Flowmeter and Remote Type Converter) Hazerdous Area: Class I, Zone 0 Maximum Input Voltage (Ui)=30V dc Maximum Input Current (Ii)=165mA dc Maximum Input Power (Pi)=0.9W Internal Capacitance (Ci)=37nF Internal Inductance (Li)=0mH Ambient Temperature: –20 to +60°C Ambient Humidity: 0 to 100% RH (No condensation) Type of Protection: Ex n IIC T4 IP67 (Integral Type Flowmeter, Remote Type Flowmeter and Remote Type Converter) Hazerdous Area: Class I, Zone 2 Maximum Input Voltage (Ui)=30V dc Ambient Temperature: –20 to +80°C Ambient Humidity: 0 to 100% RH (No condensation) Electrical Connection: ANSI 1/2 NPT female, ISO M20 X 1.5 female	SS1

DYF Tab-6.EPS

(Note 1) For intrinsically safe approval, use the barrier certified by the testing laboratories (BARD-400 is not applicable).
(Note 2) SAA Flameproof Approval (/SF1) can not combine with High Process Temperature Version (/HT).

■ REMARKS ON INSTALLATION

●Piping support

Typical vibration immunity level is 1G for normal piping condition.Piping support should be fixed in case of over 1G vibration level.

●Installation direction

If a pipe is always filled with liquids, the pipe can be installed vertically or at inclined angle.

●Adjacent pipes

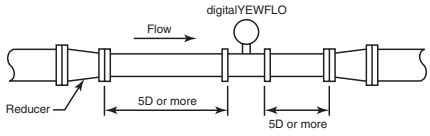
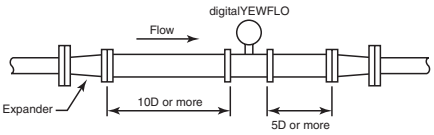
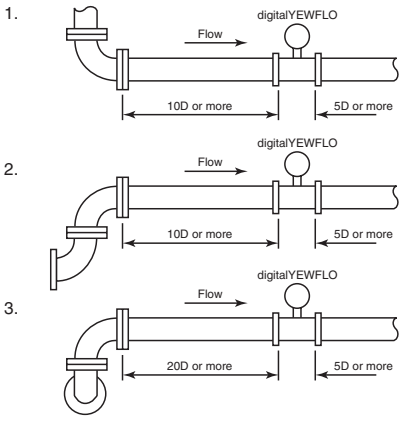
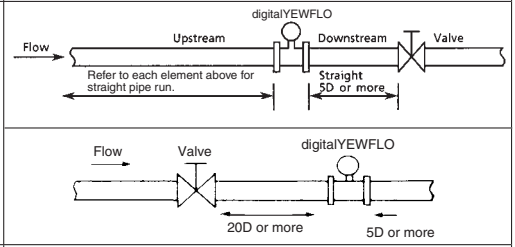
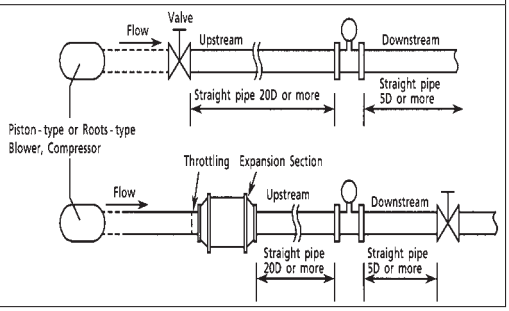
The process pipline inner diameter should be larger than the digitalYEWFLO inner diameter.
Use the following adjacent pipe.

Model Code DY015 up to DY050 : Sch 40
DY025-/R1 up to DY080-/R1 } or less
DY040-/R2 up to DY100-/R2

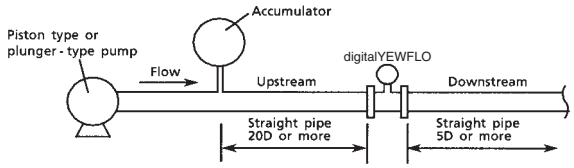
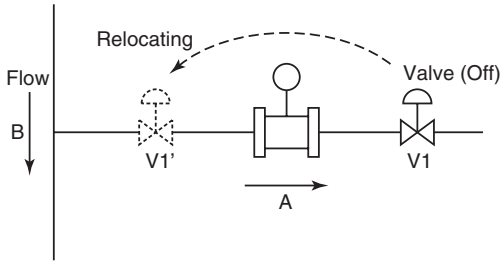
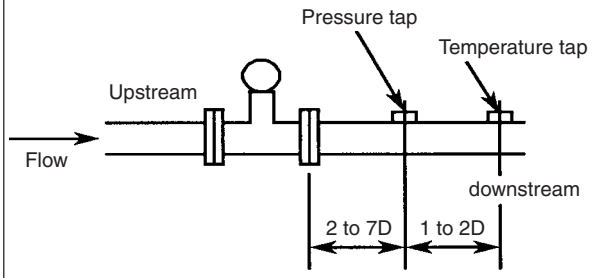
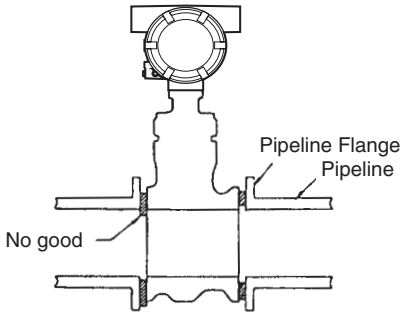
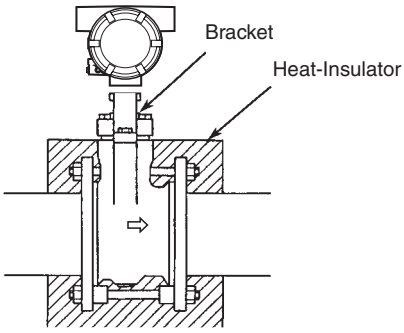
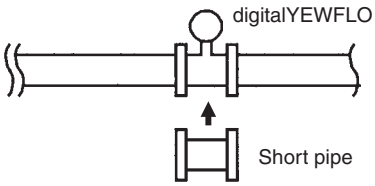
Model Code DY080 up to DY300 : Sch 80
DY100-/R1 up to DY200-/R1 } or less
DY150-/R2 up to DY200-/R2

●Straight pipe length

*D: piping diameter
*K-factor may be influenced about 0.5% in case that straight pipe length of upstream is less than values below.

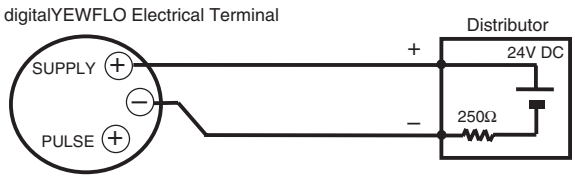
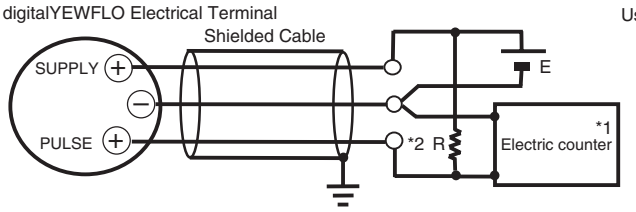
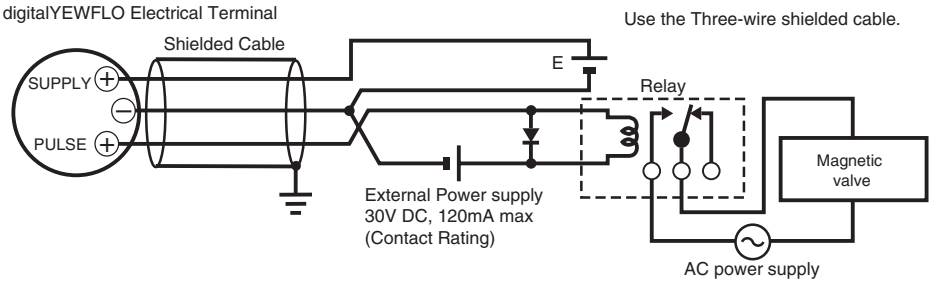
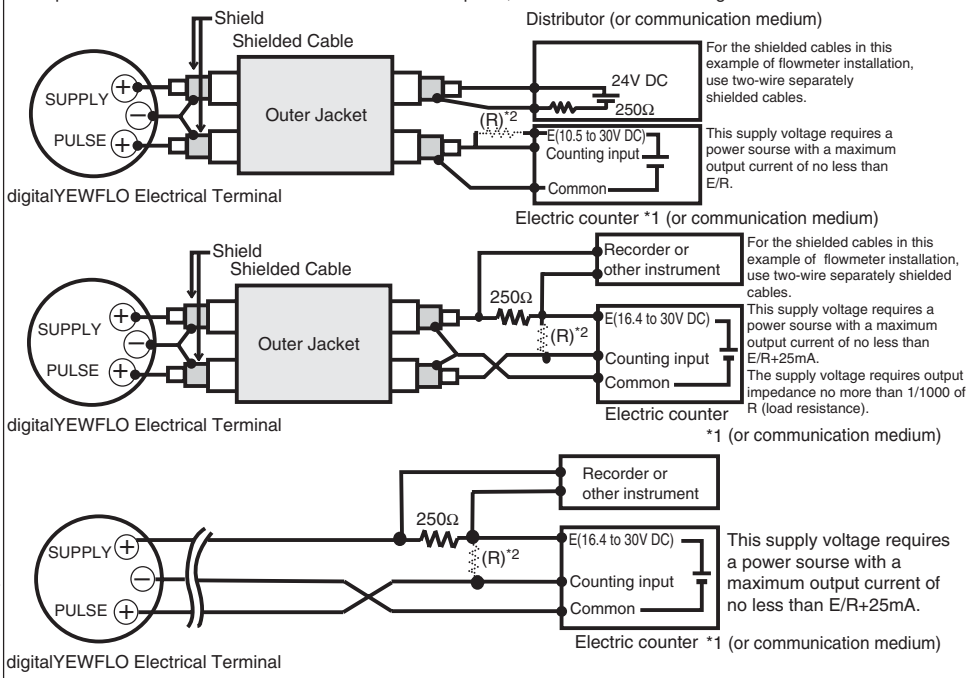
Description	Figure
Reducer pipe: Ensure the upstream straight pipe length to be 5D or more, and the downstream straight pipe length to be 5D or more for per reducer pipe.	
Expander pipe: Ensure the upstream straight pipe length to be 10D or more, and the downstream straight pipe length to be 5D or more for per expander pipe.	
Bent pipe and straight pipe length: 1. Single bent pipe 2. Double bent pipe; coplanar 3. Double bent pipe; non coplanar	
Valve position and straight pipe length: ■ Install the valve on the downstream side of the flowmeter. The upstream straight pipe length dependent on the element located on the upstream such as reducer/expander, bent and etc., refer to description as above. Keep 5D or more for downstream straight pipe length. ■ In case the valve has to be installed on the upstream of the flowmeter, ensure the upstream straight pipe length to be 20D or more, and the downstream straight pipe length be 5D or more.	
Fluid vibration: For a gas line which uses a position-type or roots-type blower compressor or a high-pressure liquid line (about 1MPa or more) which uses piston-type or plunger-type pump, fluid vibrations may be produced. In these case, install valve on the upstream side of digitalYEWFLO. For inevitable fluid vibration, put a vibration damping device such as throttling plate or expansion section in the upstream side of digitalYEWFLO.	

F01.01.EPS

Description	Figure
Piston-type or plunger pump: Install the accumulator on the upstream side of digitalYEWFLO to reduce fluid vibrations.	
Valve positon (T-type piping exist): When pulsation causes by a T-type piping exist, install the valve on the upstream of the flowmeter. Example:As shown in the figure, when the valve V1 is turned off, the fluid flow throught B as to meter A the flow is zero. But due to the pulsating pressure is detected, the meter is zero point become fluctuating. To avoid this, change the valve V1 location to V1'.	
Pressure and Temperature Taps: Pressure tap outlet: install this tap between 2D and 7D on the downstream side of a flowmeter. Temperature tap outlet: install this on the downstream side 1D to 2D away from a pressure tap.	
Mounting Gasket: Avoid mounting gaskets which protrude into the pipe line. This may cause inaccurate readings. Use the gaskets with bolt holes, even if digitalYEWFLO is the wafer type. When using a spiral gasket(without bolt holes), confirm the size with the gasket -manufacturer, as standard items may not be used for certain flange ratings.	
Heat-Insulation: When an integral-type flowmeter or a remote type detector is installed and the pipe carrying higt-temperature fluids is heat-insulated, do not wrap adiabatic materials around the installation bracket of the converter.	
Flushing of the pipe line: Flush and clean scale, incrustation and sludge on the inside of pipe for newly installed pipe line and repaired pipe line before the operation. For flushing, the flow should flow through bypass-piping to avoid damaging the flowmeter. If there is no bypass-piping, install short pipe instead of the flowmeter.	

F01.02.EPS

The wiring example for simultaneous analog and pulse and alarm, status output.

Connection	Description
Analog Output In this case, Communication is possible (up to a distance of 2km when a CEV cable is used.)	
Pulse Output In this case, No communication is possible.	 Use the Three-wire shielded cable. This supply voltage requires a power sourse with a maximum output current of no less than E/R+25mA.
Status Output **Alarm Output** In this case, No communication is possible.	 Use the Three-wire shielded cable.
Simultaneous Analog -Pulse Output *3 Example 1 In this case, Communica -tion is possible(up to a distance of 2km when a CEV cable is used). Example 2 In this case, Communica -tion is possible (up to a distance of 200m when a CEV cable is used) and R = 1kΩ). Example 3 In this case, No communi -cation is possible (when shielded cable is not used).	When analog and pulse output are used, the length of communication line is subjected to wiring conditions. Refer to example 1 to 3. If the communication carries out from amplifier, no need to consider wiring conditions. 
The range of load resistance R for the pulse output.	The load resistance should be selected by calculation as shown below. $\frac{E\,(V)}{120} \leqq R\,(k\Omega) \leqq \frac{0.1}{C\,(\mu F) \times f\,(kHz)}$ Example of CEV cable capacitance ≒ 0.1μF/km $P\,(mW) = \frac{E^2\,(V)}{R\,(k\Omega)}$ Where E = Supply voltage (V) f = Frequency of pulse output (kHz) R = Value of load resistance (kΩ) C = Cable capacitance (μF) P = Power ratio of the load resistance (mW)

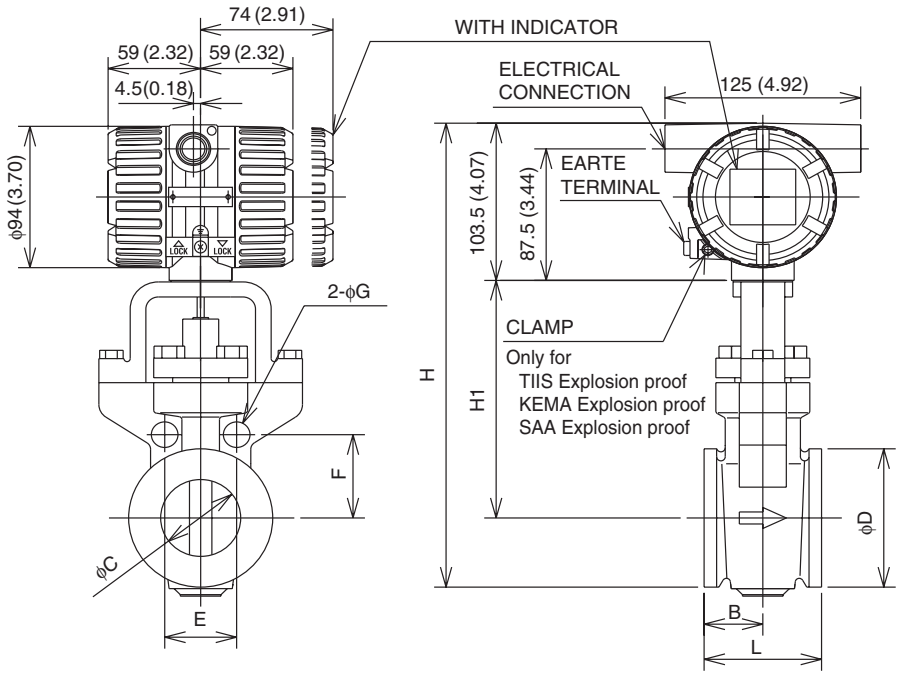
*1 : To avoid the influence of external noise, use an electric counter which fits to the pulse frequency.
*2 : Resistor is not necessary in case of an electric counter which can receive contact pulse signal directly.
*3 : When using analog and pulse output simultaneously, the HART communication may be influenced by noise comparing analog output only.

T004.02.EPS

■ EXTERNAL DIMENSIONS

■ Wafer type (DY015 up to DY100)

Unit: mm
(approx. inch)



TYPE	INTEGRAL/REMOTE													
CODE	DY015 (15mm,½in)							DY025 (25mm,1in)						
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4
L	70 (2.76)							70 (2.76)						
B	35 (1.38)							35 (1.38)						
C	14.6 (0.57)							25.7 (1.01)						
D	35.1 (1.38)							50.8 (2.00)						
H	248 (9.76)							258 (10.16)						
H1	127 (5.00)							129 (5.08)						
E	49.5 (1.95)	49.5 (1.95)	56.6 (2.23)	42.7 (1.68)	47.1 (1.85)	47.1 (1.85)	46 (1.81)	63.6 (2.50)	63.6 (2.50)	67.2 (2.65)	56 (2.21)	62.9 (2.48)	62.9 (2.48)	60.1 (2.37)
F	24.7 (0.97)	24.7 (0.97)	28.3 (1.11)	21.4 (0.84)	23.5 (0.93)	23.5 (0.93)	23 (0.91)	31.8 (1.25)	31.8 (1.25)	33.6 (1.32)	28 (1.10)	31.4 (1.24)	31.4 (1.24)	30.1 (1.19)
G	13 (0.51)	13 (0.51)	17 (0.67)	14 (0.55)	14 (0.55)	14 (0.55)	13 (0.51)	17 (0.67)	17 (0.67)	17 (0.67)	14 (0.55)	17 (0.67)	17 (0.67)	13 (0.51)
WEIGHT kg	2.8 (6.17lb)							3.7 (8.16lb)						

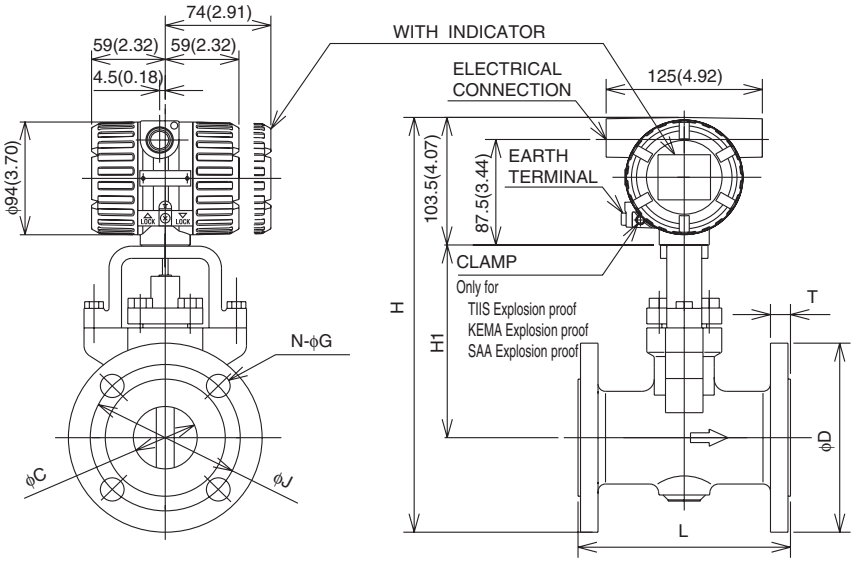
TYPE	INTEGRAL/REMOTE													
CODE	DY040 (40mm,1½in)							DY050 (50mm,2in)						
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AP4 AA4	AD1 - AD4
L	70 (2.76)							75 (2.95)						
B	35 (1.38)							37.5 (1.48)						
C	39.7 (1.56)							51.1 (2.01)						
D	73 (2.87)							92 (3.62)						
H	276 (10.87)							307.5 (12.11)						
H1	136 (5.35)							158 (6.22)						
E	74.2 (2.92)	74.2 (2.92)	84.9 (3.34)	69.7 (2.74)	80.8 (3.18)	80.8 (3.18)	77.8 (3.06)	(Note 3)	45.9 (1.81)	49.8 (1.96)	(Note 3)	48.6 (1.91)	48.6 (1.91)	(Note 3)
F	37.1 (1.46)	37.1 (1.46)	42.4 (1.67)	34.8 (1.37)	40.4 (1.59)	40.4 (1.59)	38.9 (1.53)	(Note 3)	55.4 (2.18)	60.1 (2.36)	(Note 3)	58.7 (2.31)	58.7 (2.31)	(Note 3)
G	17 (0.67)	17 (0.67)	21 (0.83)	14 (0.55)	20 (0.79)	20 (0.79)	17 (0.67)	(Note 3)	17 (0.67)	17 (0.67)	(Note 3)	17 (0.67)	17 (0.67)	(Note 3)
WEIGHT kg	4.3 (9.48lb)							6.0 (13.23lb)						

TYPE	INTEGRAL/REMOTE														
CODE	DY080 (80mm,3in)								DY100 (100mm,4in)							
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD2	AD3 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD2	AD3 - AD4
L	100 (3.94)								120 (4.72)							
B	40 (1.57)								50 (1.97)							
C	71 (2.80)								93.8 (3.69)							
D	127 (5.00)								157.2 (6.19)							
H	342 (13.47)								372 (14.65)							
H1	175 (6.89)								190 (7.48)							
E	57.4 (2.26)	61.2 (2.41)	65.1 (2.56)	(Note 3)	64.4 (2.54)	64.4 (2.54)	61.2 (2.41)	61.2 (2.41)	67 (2.64)	70.8 (2.79)	78.5 (3.09)	72.9 (2.87)	76.6 (3.02)	82.6 (3.25)	68.9 (2.71)	72.7 (2.86)
F	69.3 (2.73)	73.9 (2.91)	78.5 (3.09)	(Note 3)	77.7 (3.06)	77.7 (3.06)	73.9 (2.91)	73.9 (2.91)	80.8 (3.18)	85.5 (3.37)	94.7 (3.73)	88 (3.46)	92.5 (3.64)	99.7 (3.93)	83.1 (3.27)	87.8 (3.46)
G	17 (0.67)	21 (0.83)	21 (0.83)	(Note 3)	20 (0.79)	20 (0.79)	17 (0.67)	17 (0.67)	17 (0.67)	21 (0.83)	23 (0.91)	17 (0.67)	20 (3.06)	23 (0.91)	17 (0.67)	21 (0.83)
WEIGHT kg	9.4 (20.73lb)								12.8 (28.22lb)							

(Note 1) Integral weight is the same as Remote.
(Note 2) In case of with Indicator, add 0.2kg.
(Note 3) The hole is not provided.
(Note 4) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ Flange type (DY015 up to DY100)

Unit: mm
(approx. inch)



TYPE		INTEGRAL/REMOTE																			
CODE		DY015 (15mm, ½in)										DY025 (25mm,1in)									
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5
L		130 (5.12)						160 (6.30)	130 (5.12)	140 (5.51)	160 (6.30)	150 (5.91)						190 (7.48)	150 (5.91)	170 (6.69)	190 (7.48)
C		14.6 (0.58)										25.7 (1.01)									
D		95 (3.74)	95 (3.74)	115 (4.53)	88.9 (3.50)	95.3 (3.75)	95.3 (3.75)	120.7 (4.75)	95 (3.74)	95.3 (3.75)	120.7 (4.75)	125 (4.92)	125 (4.92)	130 (5.12)	108 (4.25)	124 (4.88)	124 (4.88)	149.4 (5.88)	115 (4.53)	124 (4.88)	149.4 (5.88)
H		278 (10.94)	278 (10.94)	288 (11.34)	275 (10.83)	278 (10.94)	278 (10.94)	291 (11.46)	278 (10.94)	278 (10.94)	291 (11.46)	295 (11.61)	295 (11.61)	297.5 (11.91)	286.5 (11.28)	294.5 (11.59)	294.5 (11.59)	307 (12.09)	290 (11.42)	294.5 (11.59)	307 (12.09)
H1		127 (5.00)										129 (5.08)									
T		12 (0.47)	14 (0.55)	20 (0.79)	11.2 (0.44)	14.2 (0.56)	21 (0.83)	28.8 (1.13)	16 (0.63)	19.9 (0.78)	28.8 (1.13)	14 (0.55)	16 (0.63)	22 (0.87)	14.2 (0.56)	17.5 (0.69)	24 (0.94)	34.9 (1.37)	18 (0.71)	24 (0.94)	34.9 (1.37)
J		70 (2.76)	70 (2.76)	80 (7.15)	60.5 (2.38)	66.5 (2.62)	66.5 (2.62)	82.6 (3.25)	65 (2.56)	66.5 (2.62)	82.6 (3.25)	90 (3.54)	90 (3.54)	95 (3.74)	79.2 (3.12)	89 (3.50)	89 (3.50)	101.6 (4.00)	85 (3.35)	89 (3.50)	101.6 (4.00)
N		4 (0.16)										4 (0.16)									
G		15 (0.59)	15 (0.59)	19 (0.75)	15.7 (0.62)	15.7 (0.62)	15.7 (0.62)	22.4 (0.88)	14 (0.55)	15.7 (0.62)	22.4 (0.88)	19 (0.75)	19 (0.75)	19 (0.75)	15.7 (0.62)	19 (0.75)	19 (0.75)	25.4 (1.00)	14 (0.55)	19 (0.75)	25.4 (1.00)
WEIGHT	kg	4.2	4.3	5.9	4.1	4.3	4.6	6.7	4.2	4.5	6.8	6.9	7.1	8.6	6.6	7.2	7.7	11.1	6.9	7.9	11.4
	lb	9.26	9.48	13.01	9.04	9.48	10.14	14.77	9.26	9.92	14.99	15.21	15.66	18.96	14.55	15.88	16.98	24.48	15.21	17.42	25.14

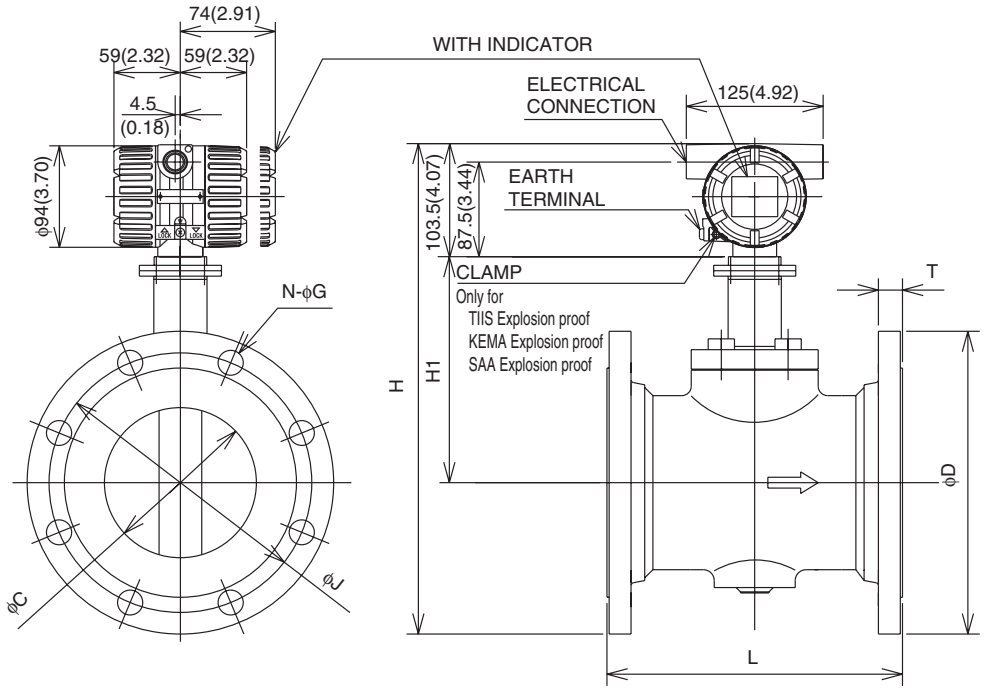
TYPE		INTEGRAL/REMOTE																			
CODE		DY040 (40mm, 1½in)										DY050 (50mm, 2in)									
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5
L		150 (5.91)						200 (7.87)	150 (5.91)	185 (7.28)	200 (7.87)	170 (6.69)						230 (9.06)	170 (6.69)	205 (8.07)	230 (9.06)
C		39.7 (1.56)										51.1 (2.01)									
D		140 (5.51)	140 (5.51)	160 (6.30)	127 (5.00)	155.4 (6.12)	155.4 (6.12)	177.8 (7.00)	150 (5.91)	155.4 (6.12)	177.8 (7.00)	155 (6.10)	155 (6.10)	165 (6.50)	152.4 (6.00)	165.1 (6.50)	165.1 (6.50)	215.9 (8.50)	165 (6.50)	165.1 (6.50)	215.9 (8.50)
H		309.5 (12.19)	309.5 (12.19)	319.5 (12.58)	303 (11.93)	317 (12.48)	317 (12.48)	328.5 (12.93)	314.5 (12.38)	317 (12.48)	328.5 (12.93)	339 (13.35)	339 (13.35)	344 (13.54)	337.5 (13.29)	344 (13.54)	344 (13.54)	369.5 (14.55)	344 (13.54)	344 (13.54)	369.5 (14.55)
H1		136 (5.35)										158 (6.22)									
T		16 (0.63)	18 (0.71)	26 (1.02)	17.5 (0.69)	20.6 (0.81)	28.8 (1.13)	38.2 (1.50)	18 (0.71)	28.8 (1.13)	38.2 (1.50)	16 (0.63)	18 (0.71)	26 (1.02)	19.1 (0.75)	22.4 (0.88)	31.8 (1.25)	44.5 (1.75)	20 (0.79)	33.3 (1.31)	46 (1.81)
J		105 (4.13)	105 (4.13)	120 (4.72)	98.6 (3.88)	114.3 (4.50)	114.3 (4.50)	124 (4.88)	110 (4.33)	114.3 (4.50)	124 (4.88)	120 (4.72)	120 (4.72)	130 (5.12)	120.7 (4.75)	127 (5.00)	127 (5.00)	165.1 (6.50)	125 (4.92)	127 (5.00)	165.1 (6.50)
N		4 (0.16)										4 (0.16)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)
G		19 (0.75)	19 (0.75)	23 (0.91)	15.7 (0.62)	22.4 (0.88)	22.4 (0.88)	28.4 (1.12)	18 (0.71)	22.4 (0.88)	28.4 (1.12)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	25.4 (1.00)	18 (0.71)	19 (0.75)	25.4 (1.00)
WEIGHT	kg	8.2	8.4	11.9	8.1	9.3	11.3	16.2	8.8	11.7	16.3	11.1	11.6	14.3	11.7	13.2	14.8	26.5	11.3	15.8	26.9
	lb	18.08	18.52	26.24	17.86	20.51	24.92	35.72	19.40	25.80	35.94	24.48	25.58	31.53	25.80	29.11	32.63	58.43	24.92	34.84	59.31

TYPE		INTEGRAL/REMOTE																			
CODE		DY080 (80mm, 3in)										DY100 (100mm, 4in)									
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5
L		200 (7.87)						245 (9.65)	200 (7.87)		235 (9.25)	250 (9.84)	220 (8.66)					240 (9.45)	280 (11.02)	220 (8.66)		270 (10.63)	285 (11.22)
C		71 (2.80)											93.8 (3.69)										
D		185 (7.28)	200 (7.87)	210 (8.27)	190.5 (7.50)	209.6 (8.25)	209.6 (8.25)	241.3 (9.50)	200 (7.87)	200 (7.87)	209.6 (8.25)	241.3 (9.50)	210 (8.27)	225 (8.90)	250 (9.84)	228.6 (9.00)	254 (10.00)	273 (10.75)	292.1 (11.50)	220 (8.66)	235 (9.25)	273 (10.75)	292.1 (11.50)
H		371 (14.61)	378.5 (14.90)	383.5 (15.10)	374 (14.72)	383.5 (15.10)	383.5 (15.10)	399 (15.71)	378.5 (14.90)	378.5 (14.90)	383.5 (15.10)	399 (15.71)	398.5 (15.69)	406 (15.98)	418.5 (16.48)	409 (16.10)	420.5 (16.56)	430 (16.93)	439.5 (17.30)	403.5 (15.89)	411 (16.18)	430 (16.93)	439.5 (17.30)
H1		175 (6.89)											190 (7.48)										
T		18 (0.71)	22 (0.87)	32 (1.26)	23.9 (0.94)	28.4 (1.12)	38.2 (1.50)	44.5 (1.75)	20 (0.79)	24 (0.95)	39.7 (1.56)	46 (1.81)	18 (0.71)	24 (0.95)	36 (1.42)	23.9 (0.94)	31.8 (1.25)	44.5 (1.75)	50.9 (2.00)	20 (0.79)	24 (0.95)	46 (1.81)	52.4 (2.06)
J		150 (5.91)	160 (6.30)	170 (6.69)	152.4 (6.00)	168.2 (6.62)	168 (6.61)	190.5 (7.50)	160 (6.30)	160 (6.30)	170 (6.69)	180 (7.09)	175 (6.89)	185 (7.28)	205 (8.07)	190.5 (7.50)	200.2 (7.88)	216 (8.50)	235 (9.25)	180 (7.09)	190 (7.48)	216 (8.50)	235 (9.25)
N		8 (0.31)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)										
G		19 (0.75)	23 (0.91)	23 (0.91)	19 (0.75)	22.4 (0.88)	22.4 (0.88)	25.4 (1.00)	18 (0.71)	18 (0.71)	22.4 (0.88)	25.4 (1.00)	19 (0.75)	23 (0.91)	25 (0.98)	19 (0.75)	22.4 (0.88)	25.4 (1.00)	31.8 (1.25)	18 (0.71)	22 (0.87)	25.4 (1.00)	31.8 (1.25)
WEIGHT	kg	17.4	20	25.4	20	23.8	25.4	35.7	19.4	20	27.1	36.3	22.8	26.8	38.1	27.4	35.9	50.8	55.9	23.2	27.4	52.8	56.6
	lb	38.37	44.10	56.01	44.10	52.48	56.01	78.72	42.78	44.10	59.76	80.04	50.27	59.09	84.01	60.42	79.16	112.01	123.26	51.16	60.42	116.42	124.80

(Note 1) Integral weight is the same as Remote
(Note 2) In the case of with Indicator, add 0.2 kg
(Note 3) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ Flange type (DY150 up to DY300)

Unit: mm
(approx. inch)



TYPE		INTEGRAL/REMOTE																							
CODE		DY150 (150mm, 6in)												DY200 (200mm, 8in)											
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5	BJ1	BJ2	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1	BD2	BD3	BD4	CA4	CA5
L		270 (10.63)					310 (12.21)	336 (13.23)	270 (10.63)		325 (12.80)	340 (13.39)	310 (12.20)				370 (14.57)	386 (15.20)	310 (12.20)				375 (14.76)	390 (15.35)
C		138.8 (5.46)											185.6 (7.31)											
D		280 (11.02)	305 (12.01)	355 (13.98)	279.4 (11.00)	317.5 (12.50)	356 (14.02)	381 (15.00)	285 (11.22)	300 (11.81)	356 (14.02)	381 (15.00)	330 (12.99)	350 (13.78)	342.9 (13.50)	381 (15.00)	419.1 (16.50)	469.9 (18.50)	340 (13.39)	340 (13.39)	360 (14.17)	375 (14.76)	419.1 (16.50)	469.9 (18.50)
H		453 (17.83)	465 (18.31)	490 (19.29)	452 (17.80)	471 (18.54)	491 (19.33)	503 (19.80)	455 (17.91)	463 (18.23)	491 (19.33)	503 (19.80)	510 (20.08)	520 (20.47)	516 (20.31)	535 (21.06)	554 (21.81)	579 (22.80)	515 (20.28)	515 (20.28)	525 (20.67)	532 (20.94)	554 (21.81)	579 (22.80)
H1		209 (8.23)											241 (9.49)											
T		22 (0.87)	28 (1.10)	44 (1.73)	25.4 (1.00)	36.6 (1.44)	54.4 (2.14)	62 (2.44)	22 (0.87)	28 (1.10)	55.7 (2.19)	63.6 (2.50)	22 (0.87)	30 (1.18)	28.4 (1.12)	41.1 (1.62)	62 (2.44)	69.9 (2.75)	24 (0.95)	24 (0.95)	30 (1.18)	34 (1.34)	63.6 (2.50)	71.4 (2.81)
J		240 (9.45)	260 (10.24)	295 (11.61)	241.3 (9.50)	269.7 (10.62)	292 (11.50)	317.5 (12.50)	240 (9.45)	250 (9.84)	292 (11.50)	317.5 (12.50)	290 (11.42)	305 (12.01)	298.5 (11.75)	330.2 (13.00)	349.3 (13.75)	393.7 (15.50)	295 (11.61)	295 (11.61)	310 (12.20)	320 (12.60)	349.3 (13.75)	393.7 (15.50)
N		8 (0.31)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)
G		23 (0.91)	25 (0.98)	33 (1.30)	22.4 (0.88)	22.4 (0.88)	28.4 (1.12)	31.8 (1.25)	22 (0.87)	26 (1.02)	28.4 (1.12)	31.8 (1.25)	23 (0.91)	25 (0.98)	22.4 (0.88)	25.4 (1.00)	31.8 (1.25)	38.1 (1.50)	22 (0.87)	22 (0.87)	26 (1.02)	30 (1.18)	31.8 (1.25)	38.1 (1.50)
WEIGHT	kg	33.4	43.4	76.4	36.4	54.4	84.4	106	33.4	42.9	90	107	45.4	52.4	55.4	80.4	136	182	46.3	46.3	53.6	55.9	139	183
	lb	73.65	95.70	168.46	80.26	119.95	186.10	233.73	73.65	94.59	198.45	235.94	100.11	115.54	122.16	177.28	299.88	401.31	102.09	102.09	118.19	123.26	306.52	403.52

TYPE		INTEGRAL/REMOTE							
CODE		DY250 (250mm, 10in)				DY300 (300mm, 12in)			
PROCESS CONNECTION		BJ1	BJ2	BA1 BS1	BA2 BS2	BJ1	BJ2	BA1 BS1	BA2 BS2
L		370 (14.57)				400 (15.75)			
C		230.8 (9.09)				276.2 (10.87)			
D		400 (15.75)	430 (16.93)	406.4 (16.00)	444.5 (17.50)	445 (17.52)	480 (18.90)	482.6 (19.00)	520.7 (20.50)
H		581 (22.87)	596 (23.46)	584 (22.99)	603 (23.74)	633 (24.92)	651 (25.63)	652 (25.67)	671 (26.42)
H1		277 (10.91)				307 (12.09)			
T		25 (0.98)	35 (1.38)	31.2 (1.23)	48.8 (1.92)	25 (0.98)	37 (1.46)	32.8 (1.29)	51.8 (2.04)
J		355 (13.98)	380 (14.96)	362 (14.25)	387.4 (15.25)	400 (15.75)	430 (16.93)	431.8 (17.00)	450.9 (17.75)
N		12 (0.47)	12 (0.47)	12 (0.47)	16 (0.63)	16 (0.63)	16 (0.63)	12 (0.47)	16 (0.63)
G		25 (0.98)	27 (1.06)	25.4 (1.00)	28.5 (1.12)	25 (0.98)	27 (1.06)	25.4 (1.00)	31.8 (1.25)
WEIGHT	kg	78	100	90	125	100	128	140	178
	lb	171.99	220.50	198.45	275.63	220.50	282.24	308.70	392.49

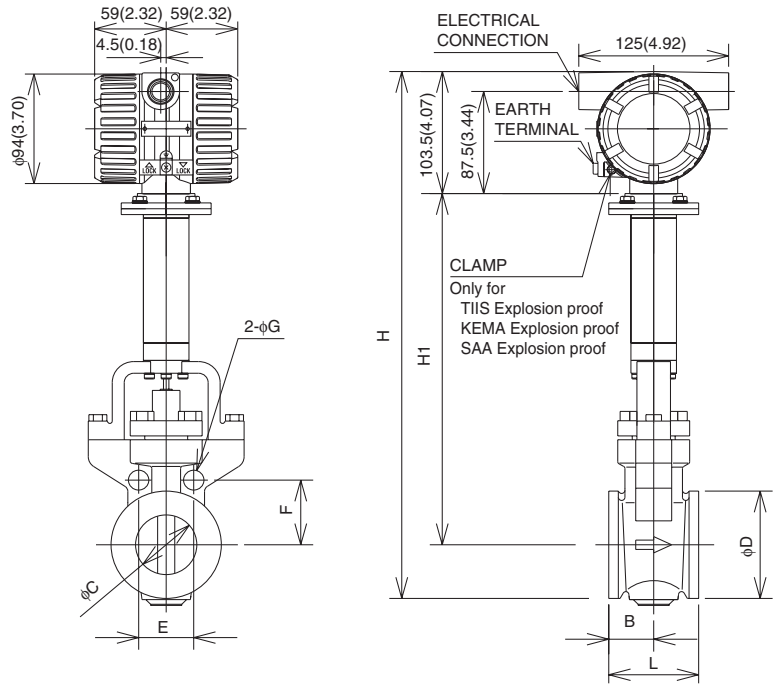
(Note 1) Integral weight is the same as Remote
(Note 2) In case of with indicator, add 0.2kg
(Note 3) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ **High Process Temperature Version (/HT): DY025-/HT up to DY100-/HT**

■ **Cryogenic Version (/LT): DY015-/LT up to DY100-/LT**

■ **Wafer type**

Unit: mm
(approx. inch)



TYPE	Only for REMOTE						
CODE	DY015 (15mm,½in) Only for /LT						
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4
L	70 (2.76)						
B	35 (1.38)						
C	14.6 (0.57)						
D	35.1 (1.38)						
H	391 (15.39)						
H1	270 (10.63)						
E	49.5 (1.95)	49.5 (1.95)	56.6 (2.23)	42.7 (1.68)	47.1 (1.85)	47.1 (1.85)	46 (1.81)
F	24.7 (0.97)	24.7 (0.97)	28.3 (1.11)	21.4 (0.84)	23.5 (0.93)	23.5 (0.93)	23 (0.91)
G	13 (0.51)	13 (0.51)	17 (0.67)	14 (0.55)	14 (0.55)	14 (0.55)	13 (0.51)
WEIGHT kg	3.2 (7.06lb)						

TYPE	Only for REMOTE																							
CODE	DY025 (25mm,1in) /LT, /HT							DY040 (40mm,1½in) /LT, /HT							DY050 (50mm,2in) /LT, /HT									
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD4			
L	70 (2.76)							70 (2.76)							75 (2.95)									
B	35 (1.38)							35 (1.38)							37.5 (1.48)									
C	25.7 (1.01)							39.7 (1.56)							51.1 (2.01)									
D	50.8 (2.00)							73 (2.87)							92 (3.62)									
H	401 (15.79)							419 (16.50)							450.5 (17.74)									
H1	272 (10.71)							279 (10.98)							301 (11.85)									
E	63.6 (2.50)	63.6 (2.50)	67.2 (2.65)	56 (2.20)	62.9 (2.48)	62.9 (2.48)	60.1 (2.37)	74.2 (2.92)	74.2 (2.92)	84.9 (3.34)	69.7 (2.74)	80.8 (3.18)	80.8 (3.18)	77.8 (3.06)	(Note 1)	45.9 (1.81)	49.8 (1.96)	(Note 1)	48.6 (1.91)	48.6 (1.91)	(Note 1)			
F	31.8 (1.25)	31.8 (1.25)	33.6 (1.32)	28 (1.10)	31.4 (1.24)	31.4 (1.24)	30.1 (1.19)	37.1 (1.46)	37.1 (1.46)	42.4 (1.67)	34.8 (1.37)	40.4 (1.59)	40.4 (1.59)	38.9 (1.53)	(Note 1)	55.4 (2.18)	60.1 (2.37)	(Note 1)	58.7 (2.31)	58.7 (2.31)	(Note 1)			
G	17 (0.67)	17 (0.67)	17 (0.67)	14 (0.55)	17 (0.67)	17 (0.67)	13 (0.51)	17 (0.67)	17 (0.67)	21 (0.83)	14 (0.55)	20 (0.79)	20 (0.79)	17 (0.67)	(Note 1)	17 (0.67)	17 (0.67)	(Note 1)	17 (0.67)	17 (0.67)	(Note 1)			
WEIGHT kg	4.1 (9.04lb)							4.7 (10.36lb)							6.4 (14.11lb)									

TYPE	Only for REMOTE															
CODE	DY080 (80mm,3in) /LT, /HT								DY100 (100mm,4in) /LT, /HT							
PROCESS CONNECTION	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD2	AD3 - AD4	AJ1	AJ2	AJ4	AA1	AA2	AA4	AD1 - AD2	AD3 - AD4
L	100 (3.94)								120 (4.72)							
B	40 (1.57)								50 (1.97)							
C	71 (2.80)								93.8 (3.69)							
D	127 (5.00)								157.2 (6.19)							
H	485 (19.09)								515 (20.28)							
H1	318 (12.52)								333 (13.11)							
E	57.4 (2.26)	61.2 (2.41)	65.1 (2.56)	(Note 1)	64.4 (2.54)	64.4 (2.54)	61.2 (2.41)	61.2 (2.41)	67 (2.64)	70.8 (2.79)	78.5 (3.09)	72.9 (2.87)	76.6 (3.02)	82.6 (3.25)	68.9 (2.71)	72.7 (2.86)
F	69.3 (2.73)	73.9 (2.91)	78.5 (3.09)	(Note 1)	77.7 (3.06)	77.7 (3.06)	73.9 (2.91)	73.9 (2.91)	80.8 (3.18)	85.5 (3.37)	94.7 (3.73)	88 (3.46)	92.5 (3.64)	99.7 (3.93)	83.1 (3.27)	87.8 (3.46)
G	17 (0.67)	21 (0.83)	21 (0.83)	(Note 1)	20 (0.79)	20 (0.79)	17 (0.67)	17 (0.67)	17 (0.67)	21 (0.83)	23 (0.91)	17 (0.67)	20 (0.79)	23 (0.91)	17 (0.67)	21 (0.83)
WEIGHT kg	9.8 (21.61lb)								13.2 (29.11lb)							

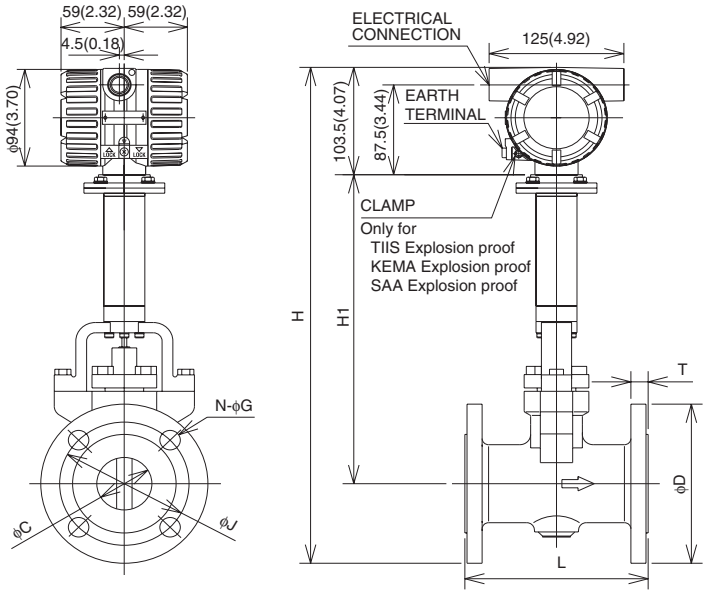
(Note 1) The hole is not provided.
(Note 2) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ **High Process Temperature Version (/HT): DY025-/HT up to DY100-/HT**

■ **Cryogenic Version (/LT): DY015-/LT up to DY100-/LT**

■ **Flange type**

Unit: mm
(approx. inch)



TYPE		Only for REMOTE																			
CODE		DY015 (15mm,½in) Only for /LT										DY025 (25mm,2in) /LT, /HT									
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5
L		130 (5.12)						160 (6.30)	130 (5.12)	140 (5.51)	160 (6.30)	150 (5.91)						190 (7.48)	150 (5.91)	170 (6.69)	190 (7.48)
C		14.6 (0.57)										25.7 (1.01)									
D		95 (3.74)	95 (3.74)	115 (4.53)	88.9 (3.50)	95.3 (3.75)	95.3 (3.75)	120.7 (4.75)	95 (3.74)	95.3 (3.75)	120.7 (4.75)	125 (4.92)	125 (4.92)	130 (5.12)	108 (4.25)	124 (4.88)	124 (4.88)	149.4 (5.88)	115 (4.53)	124 (4.88)	149.4 (5.88)
H		421 (16.57)	421 (16.57)	431 (16.97)	418 (16.46)	421 (16.57)	421 (16.57)	434 (17.09)	421 (16.57)	421 (16.57)	434 (17.09)	438 (17.24)	438 (17.24)	441 (17.36)	430 (16.93)	438 (17.24)	438 (17.24)	450 (17.72)	433 (17.05)	438 (17.24)	450 (17.18)
H1		270 (10.63)										272 (10.71)									
T		12 (0.47)	14 (0.55)	20 (0.79)	11.2 (0.44)	14.2 (0.56)	21 (0.83)	28.8 (1.13)	16 (0.63)	19.9 (0.78)	28.8 (1.13)	14 (0.55)	16 (0.63)	22 (0.87)	14.2 (0.56)	17.5 (0.69)	24 (0.94)	34.9 (1.37)	18 (0.71)	24 (0.94)	34.9 (1.37)
J		70 (2.76)	70 (2.76)	80 (3.15)	60.5 (2.38)	66.5 (2.62)	66.5 (2.62)	82.6 (2.25)	65 (2.56)	66.5 (2.62)	82.6 (2.25)	90 (3.54)	90 (3.54)	95 (3.74)	79.2 (3.12)	89 (3.50)	89 (3.50)	101.6 (4.00)	85 (3.35)	89 (3.50)	101.6 (4.00)
N		4 (0.16)										4 (0.16)									
G		15 (0.59)	15 (0.59)	19 (0.75)	15.7 (0.62)	15.7 (0.62)	15.7 (0.62)	22.4 (0.88)	14 (0.55)	15.7 (0.62)	22.4 (0.88)	19 (0.75)	19 (0.75)	19 (0.75)	15.7 (0.62)	19 (0.75)	19 (0.75)	25.4 (1.00)	14 (0.55)	19 (0.75)	25.4 (1.00)
WEIGHT	kg	4.6	4.7	6.3	4.5	4.7	5.0	7.1	4.6	4.9	7.2	7.3	7.5	9.0	7.0	7.6	8.1	11.5	7.3	8.3	11.8
	lb	10.14	10.36	13.89	9.92	10.36	11.03	15.66	10.14	10.80	15.88	16.10	16.54	19.85	15.44	16.76	17.86	25.36	16.10	18.30	26.02

TYPE		Only for REMOTE																			
CODE		DY040 (40mm,1½in) /LT, /HT										DY050 (50mm,2in) /LT, /HT									
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD4	CA4	CA5
L		150 (5.91)						200 (7.87)	150 (5.91)	185 (7.28)	200 (7.87)	170 (6.69)						230 (9.06)	170 (6.69)	205 (8.07)	230 (9.06)
C		39.7 (1.56)										51.1 (2.01)									
D		140 (5.51)	140 (5.51)	160 (6.30)	127 (5.00)	155.4 (6.12)	155.4 (6.12)	177.8 (7.00)	150 (5.91)	155.4 (6.12)	177.8 (7.00)	155 (6.10)	155 (6.10)	165 (6.50)	152.4 (6.00)	165.1 (6.50)	165.1 (6.50)	215.9 (8.50)	165 (6.50)	165.1 (6.50)	215.9 (8.50)
H		453 (17.83)	453 (17.83)	463 (18.23)	446 (17.56)	460 (18.11)	460 (18.11)	472 (18.58)	458 (18.03)	460 (18.11)	472 (18.58)	482 (18.98)	482 (18.98)	487 (19.17)	481 (18.94)	487 (19.17)	487 (19.17)	513 (20.20)	487 (19.17)	487 (19.17)	513 (20.20)
H1		279 (10.98)										301 (11.85)									
T		16 (0.63)	18 (0.71)	26 (1.02)	17.5 (0.69)	20.6 (0.81)	28.8 (1.13)	38.2 (1.50)	18 (0.71)	28.8 (1.13)	38.2 (1.50)	16 (0.63)	18 (0.71)	26 (1.02)	19.1 (0.75)	22.4 (0.88)	31.8 (1.25)	44.5 (1.75)	20 (0.79)	33.3 (1.31)	46 (1.81)
J		105 (4.13)	105 (4.13)	120 (4.72)	98.6 (3.88)	114.3 (4.50)	114.3 (4.50)	124 (4.88)	110 (4.33)	114.3 (4.50)	124 (4.88)	120 (4.72)	120 (4.72)	130 (5.12)	120.7 (4.75)	127 (5.00)	127 (5.00)	165.1 (6.50)	125 (4.92)	127 (5.00)	165.1 (6.50)
N		4 (0.16)										4 (0.16)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)
G		19 (0.75)	19 (0.75)	23 (0.91)	15.7 (0.62)	22.4 (0.88)	22.4 (0.88)	28.4 (1.12)	18 (0.71)	22.4 (0.88)	28.4 (1.12)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	19 (0.75)	25.4 (1.00)	18 (0.71)	19 (0.75)	25.4 (1.00)
WEIGHT	kg	8.6	8.8	12.3	8.5	9.7	11.7	16.6	9.2	12.1	16.7	11.5	12.0	14.7	12.1	13.6	15.2	26.9	11.7	16.2	27.3
	lb	18.96	19.40	27.12	18.74	21.39	25.80	36.60	20.29	26.68	36.82	25.36	26.46	32.42	26.68	29.99	33.52	59.32	25.80	35.72	60.20

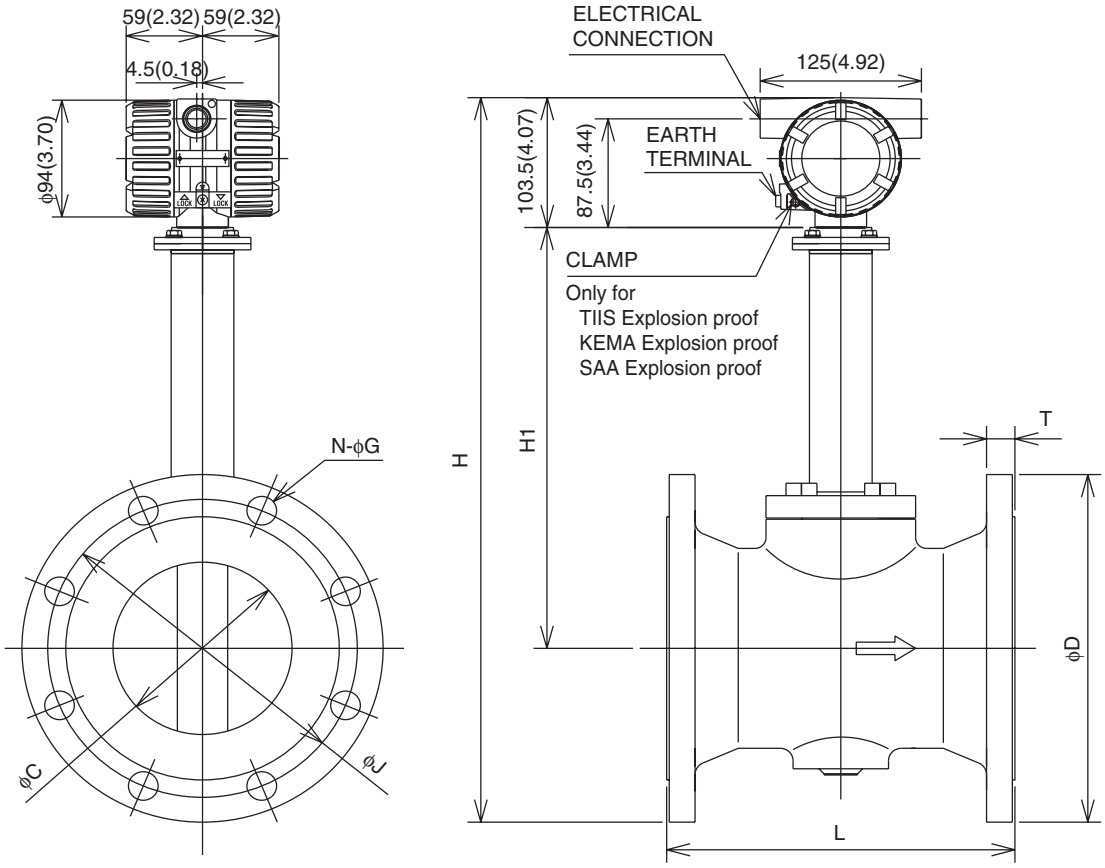
TYPE		Only for REMOTE																					
CODE		DY080 (80mm,3in) /LT, /HT											DY100 (100mm,4in) /LT, /HT										
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5	BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5
L		200 (7.87)						245 (9.65)	200 (7.87)		235 (9.25)	250 (9.84)	220 (8.66)					240 (9.45)	280 (11.02)	220 (8.66)		270 (10.63)	285 (11.22)
C		71 (2.80)											93.8 (3.69)										
D		185 (7.28)	200 (7.87)	210 (8.27)	190.5 (7.50)	209.6 (8.25)	209.6 (8.25)	241.3 (9.50)	200 (7.87)	200 (7.87)	209.6 (8.25)	241.3 (9.50)	210 (8.27)	225 (8.86)	250 (9.84)	228.6 (9.00)	254 (10.00)	273 (10.75)	292.1 (11.50)	220 (8.66)	235 (9.25)	273 (10.75)	292.1 (11.50)
H		514 (20.24)	522 (20.55)	527 (20.75)	517 (20.35)	527 (20.75)	527 (20.75)	542 (21.34)	522 (20.55)	522 (20.55)	527 (20.75)	542 (21.34)	542 (21.34)	549 (21.61)	562 (22.13)	552 (21.73)	564 (22.20)	573 (22.56)	583 (22.95)	547 (21.54)	554 (21.81)	573 (22.56)	583 (22.95)
H1		318 (12.52)											333 (13.11)										
T		18 (0.71)	22 (0.87)	32 (1.26)	23.9 (0.94)	28.4 (1.12)	38.2 (1.50)	44.5 (1.75)	20 (0.79)	24 (0.94)	39.7 (1.56)	46 (1.81)	18 (0.71)	24 (0.94)	36 (1.42)	23.9 (0.94)	31.8 (1.25)	44.5 (1.75)	50.9 (2.00)	20 (0.79)	24 (0.94)	46 (1.81)	52.4 (2.06)
J		150 (5.91)	160 (6.30)	170 (6.69)	152.4 (6.00)	168.2 (6.62)	168 (6.61)	190.5 (7.50)	160 (6.30)	160 (6.30)	170 (6.69)	180 (7.09)	175 (6.89)	185 (7.28)	205 (8.07)	190.5 (7.50)	200.2 (7.88)	216 (8.50)	235 (9.25)	180 (7.09)	190 (7.48)	216 (8.50)	235 (9.25)
N		8 (0.31)	8 (0.31)	8 (0.31)	4 (0.16)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)	8 (0.31)										
G		19 (0.75)	23 (0.91)	23 (0.91)	19 (0.75)	22.4 (0.88)	22.4 (0.88)	25.4 (1.00)	18 (0.71)	18 (0.71)	22.4 (0.88)	25.4 (1.00)	19 (0.75)	23 (0.91)	25 (0.98)	19 (0.75)	22.4 (0.88)	25.4 (1.00)	31.8 (1.25)	18 (0.71)	22 (0.87)	25.4 (1.00)	31.8 (1.25)
WEIGHT	kg	17.8	20.4	25.8	20.4	24.2	25.8	36.1	19.8	20.4	27.5	36.7	23.2	27.2	38.5	27.7	36.3	51.2	56.3	23.6	27.8	53.2	57.0
	lb	39.25	44.98	56.89	44.98	53.36	56.89	79.60	43.66	44.98	60.64	80.92	51.16	59.98	84.89	61.30	80.04	112.90	124.14	52.04	61.30	117.31	125.69

(Note 1) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ **High Process Temperature Version (/HT): DY150-/HT up to DY200-/HT**

■ **Flange type**

Unit: mm
(approx. inch)

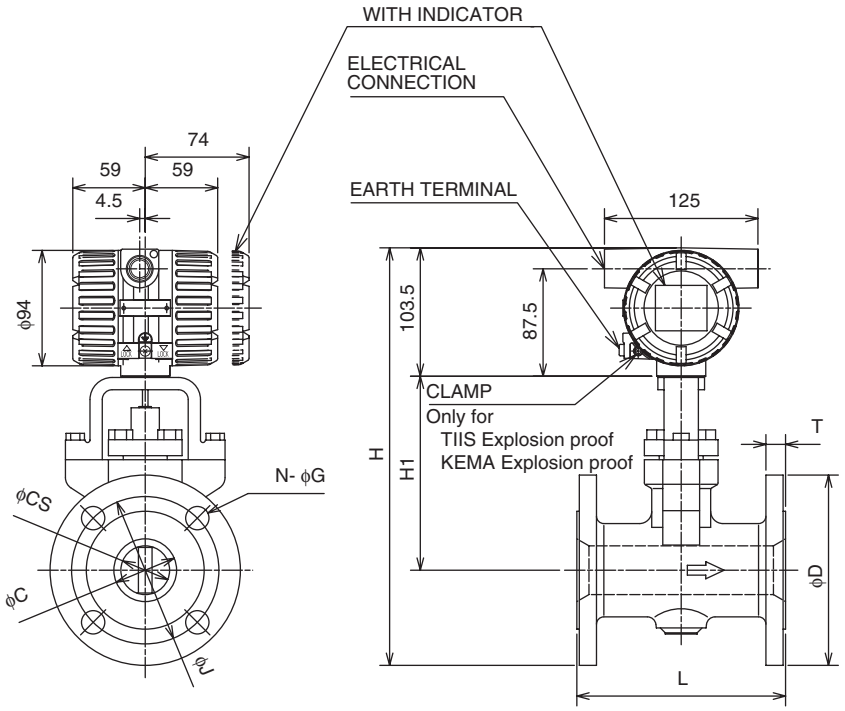


TYPE		Only for REMOTE																							
CODE		DY150 (150mm,6 in) / HT											DY200 (200mm,8 in) / HT												
PROCESS CONNECTION		BJ1	BJ2	BJ4	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1 - BD2	BD3 - BD4	CA4	CA5	BJ1	BJ2	BA1 BS1	BA2 BS2	BA4 BS4	BA5 BS5	BD1	BD2	BD3	BD4	CA4	CA5
L		270 (10.63)					310 (12.20)	336 (13.23)	270 (10.63)		325 (12.80)	340 (13.39)	310 (12.20)				370 (14.57)	386 (15.20)	310 (12.20)				375 (14.77)	390 (15.35)
C		138.8 (5.46)											185.6 (7.31)											
D		280 (11.02)	305 (12.01)	355 (13.98)	279.4 (11.00)	317.5 (12.50)	356 (14.02)	381 (15.00)	285 (11.22)	300 (11.81)	356 (14.02)	381 (15.00)	330 (12.99)	350 (13.78)	342.9 (13.50)	381 (15.00)	419.1 (16.50)	469.9 (18.50)	340 (13.39)	340 (13.39)	360 (14.17)	375 (14.76)	419.1 (16.50)	469.9 (18.50)
H		583 (22.95)	595 (23.43)	620 (24.41)	582 (22.91)	601 (23.66)	621 (24.45)	633 (24.92)	585 (23.03)	593 (23.35)	621 (24.45)	633 (24.92)	640 (25.20)	650 (25.59)	646 (25.43)	665 (26.18)	684 (26.93)	709 (27.91)	645 (25.39)	645 (25.39)	655 (25.79)	662 (26.06)	684 (26.93)	709 (27.91)
H1		339 (13.35)											371 (14.61)											
T		22 (0.87)	28 (1.10)	44 (1.73)	25.4 (1.00)	36.6 (1.44)	54.4 (2.14)	62 (2.44)	22 (0.87)	28 (1.10)	55.7 (2.19)	63.6 (2.50)	22 (0.87)	30 (1.18)	28.4 (1.12)	41.1 (1.62)	62 (2.44)	69.9 (2.75)	24 (0.95)	24 (0.95)	30 (1.18)	34 (1.34)	63.6 (2.50)	71.4 (2.81)
J		240 (9.45)	260 (10.24)	295 (11.61)	241.3 (9.50)	269.7 (10.62)	292 (11.50)	317.5 (12.50)	240 (9.45)	250 (9.84)	292 (11.50)	317.5 (12.50)	290 (11.42)	305 (12.01)	298.5 (11.75)	330.2 (13.00)	349.3 (13.75)	393.7 (15.50)	295 (11.61)	295 (11.61)	310 (12.20)	320 (12.60)	349.3 (13.75)	393.7 (15.50)
N		8 (0.31)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.31)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)
G		23 (0.91)	25 (0.98)	33 (1.30)	22.4 (0.88)	22.4 (0.88)	28.4 (1.12)	31.8 (1.25)	22 (0.87)	26 (1.02)	28.4 (1.12)	31.8 (1.25)	23 (0.91)	25 (0.98)	22.4 (0.88)	25.4 (1.00)	31.8 (1.25)	38.1 (1.50)	22 (0.87)	22 (0.87)	26 (1.02)	30 (1.18)	31.8 (1.25)	38.1 (1.50)
WEIGHT	kg	33.4	43.4	76.4	36.4	54.4	84.4	106	33.4	42.9	90	107	45.4	52.4	55.4	80.4	136	182	46.3	46.3	53.6	55.9	139	183
	lb	73.65	95.70	168.46	80.26	119.95	186.10	233.73	73.65	94.59	198.45	235.94	100.11	115.54	122.16	177.28	299.88	401.31	102.09	102.09	118.19	123.26	306.50	403.52

(Note 1) The flow direction is opposite (right to left when facing onto indicator) in case of code / CRC.

■ **Reduced Bore Type (/R1): DY025-/R1 up to DY150-/R1**

■ **Flange type**



Model Code	DY025 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	150			
C	25.7			
CS	14.6			
D	125	125	108	124
H	293	293	284.5	292.5
H1	127			
T	14	16	14.2	17.5
J	90	90	79.2	89
N	4			
G	19	19	15.7	19
Weight kg	6.1	6.5	5.5	7.0

Model Code	DY040 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	150			
C	39.7			
CS	25.7			
D	140	140	127	155.4
H	302.5	302.5	296	310
H1	129			
T	16	18	17.5	20.6
J	105	105	98.6	114.3
N	4			
G	19	19	15.7	22.4
Weight kg	9.5	10.1	9.4	12.6

Model Code	DY050 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	170			
C	51.1			
CS	39.7			
D	155	155	152.4	165.1
H	317	317	315.5	322
H1	136			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19	19	19	19
Weight kg	10.5	11.1	11.4	13.6

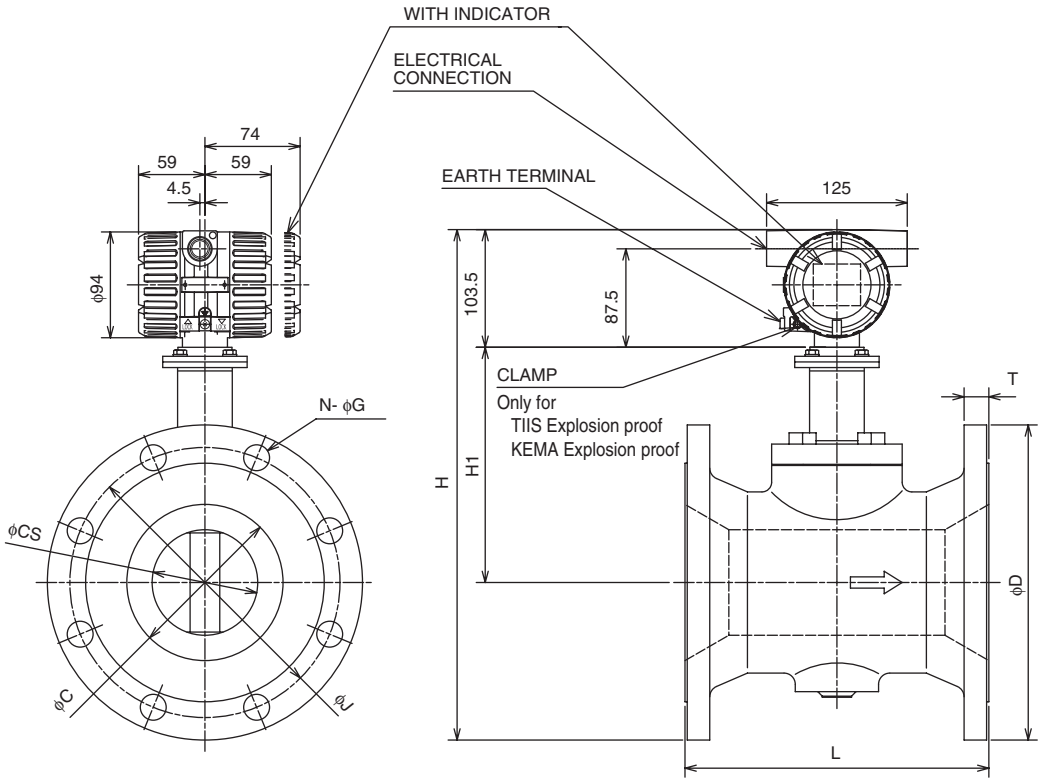
Model Code	DY080 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	200			
C	71			
CS	51.1			
D	185	200	190.5	209.6
H	354	361.5	357	366.5
H1	158			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	18.6	21.7	21.9	26.9

Model Code	DY100 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	220			
C	93.8			
CS	71			
D	210	225	228.6	254
H	383.5	391	393	405.5
H1	175			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	25	30	30.6	41.0

Model Code	DY150 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	270			
C	138.8			
CS	93.8			
D	280	305	279.4	317.5
H	433.5	446	433	452
H1	190			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	45.9	56.3	49.4	71.7

■ **Reduced Bore Type (/R1): DY200-/R1**

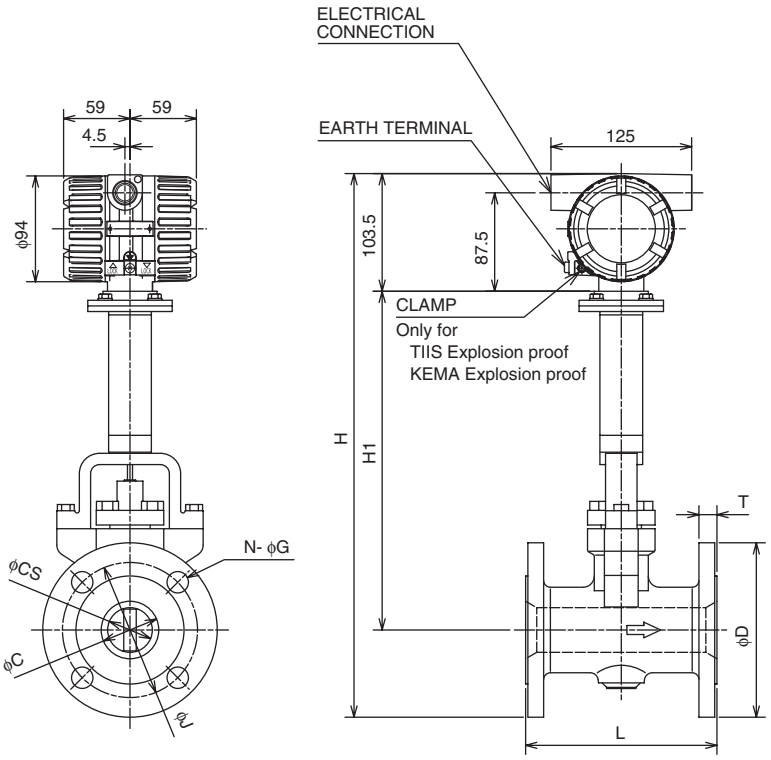
■ **Flange type**



Model Code	DY200 /R1			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	310			
C	185.6			
CS	138.8			
D	330	350	342.9	381
H	477.5	487.5	484	503
H1	209			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	58.7	74.1	70.7	102.9

■ **High Process Temperature Version Reduced Bore Type (/R1/HT): DY040-/HT/R1 up to DY150-/R1/HT**

■ **Flange type**



Model Code	DY040 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	150			
C	39.7			
CS	25.7			
D	140	140	127	155.4
H	445.5	445.5	439	453
H1	272			
T	16	18	17.5	20.6
J	105	105	98.6	114.3
N	4			
G	19	19	15.7	22.4
Weight kg	10	10.5	9.8	13.0

Model Code	DY050 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	170			
C	51.1			
CS	39.7			
D	155	155	152.4	165.1
H	460	460	458.5	465
H1	279			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19	19	19	19
Weight kg	10.9	11.5	11.8	14.0

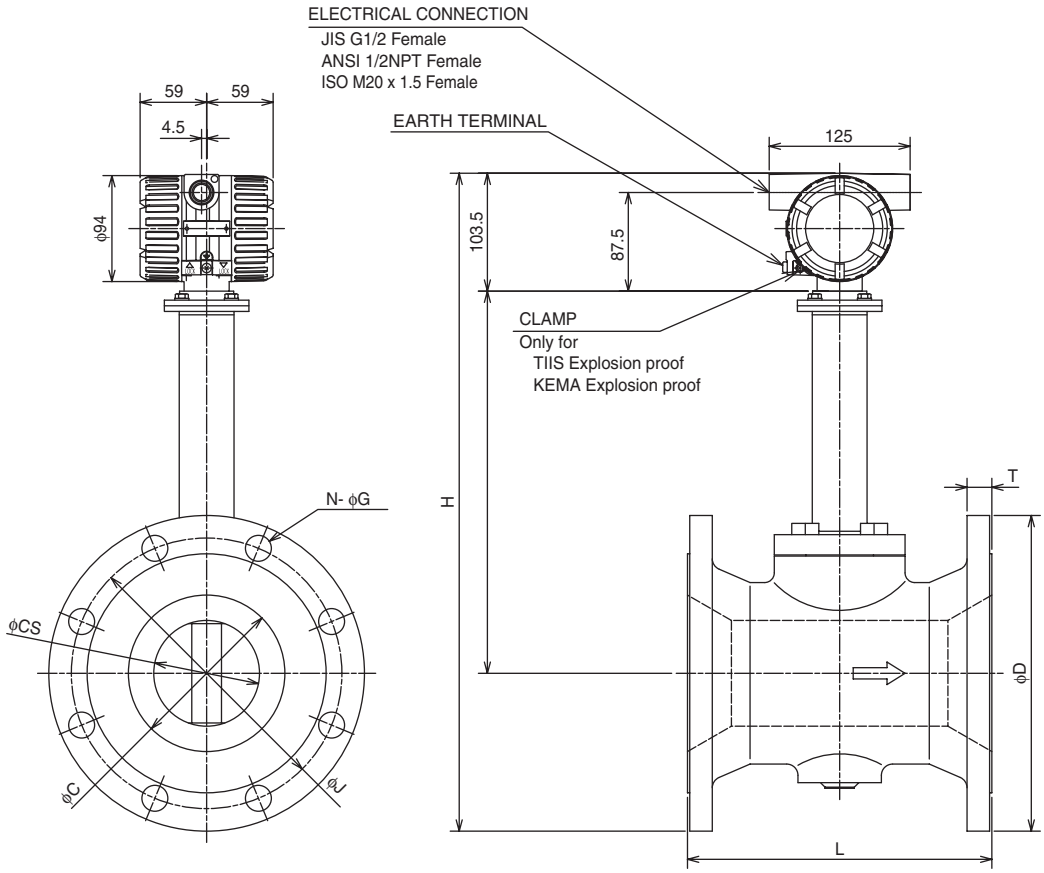
Model Code	DY080 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	200			
C	71			
CS	51.1			
D	185	200	190.5	209.6
H	497	504.5	500	509.5
H1	301			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	19	22.1	22.3	27.3

Model Code	DY100 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	220			
C	93.8			
CS	71			
D	210	225	228.6	254
H	526.5	534	536	548.5
H1	318			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	25.4	30.4	31.0	41.4

Model Code	DY150 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	270			
C	138.8			
CS	93.8			
D	280	305	279.4	317.5
H	576.5	589	576	595.5
H1	333			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	45.9	56.3	49.4	71.7

■ High Process Temperature Version Reduced Bore Type (/R1/HT): DY200-/R1/HT

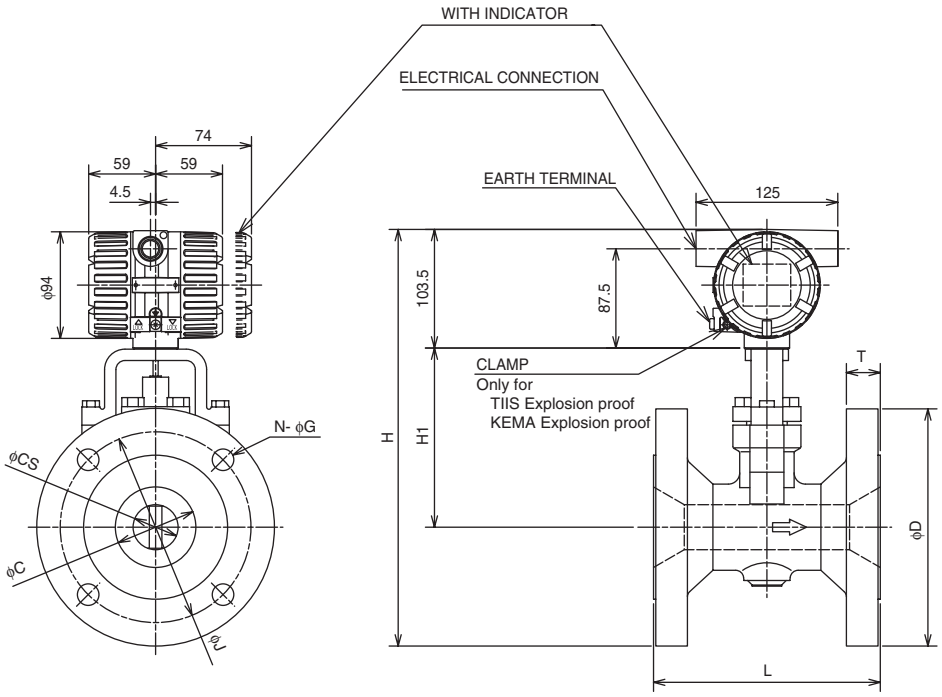
■ Flange type



Model Code	DY200 /R1/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	310			
C	185.6			
CS	138.8			
D	330	350	342.9	381
H	607.5	617.5	614	633
H1	339			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	58.7	74.1	70.7	102.9

■ **Reduced Bore Type (/R2): DY040-/R2 up to DY200-/R2**

■ **Flange type**



Model Code	DY040 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	150			
C	39.7			
CS	14.6			
D	140	140	127	155.4
H	300.5	300.5	294.0	308.2
H1	127			
T	16	18	17.5	20.6
J	105	105	98.6	114.3
N	4			
G	19	19	15.7	22.4
Weight kg	7.7	7.9	7.6	8.8

Model Code	DY050 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	170			
C	51.1			
CS	25.7			
D	155	155	152.4	165.1
H	310	310	308.7	315.1
H1	129			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19			
Weight kg	10	10.5	10.6	12.1

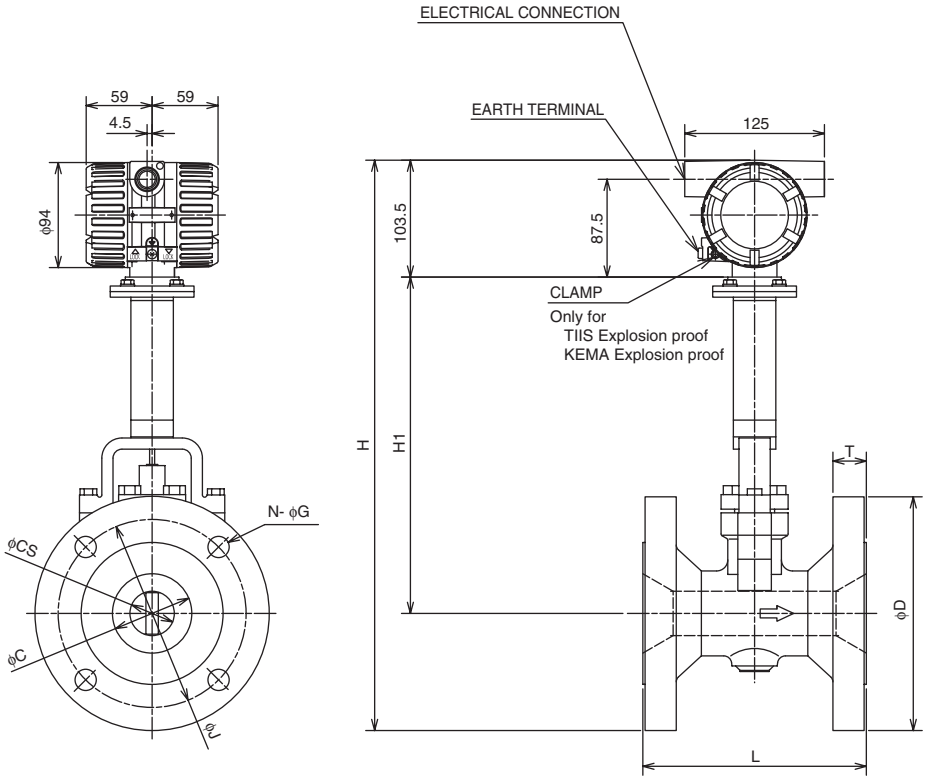
Model Code	DY080 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	200			
C	71			
CS	39.7			
D	185	200	190.5	209.6
H	332	339.5	334.8	344.3
H1	136			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	13.6	16.2	16.2	20

Model Code	DY100 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	220			
C	93.8			
CS	51.1			
D	210	225	228.6	254
H	366.5	374	375.8	388.5
H1	158			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	20.9	24.9	25.5	34

Model Code	DY150 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	270			
C	138.8			
CS	71			
D	280	305	279.4	317.5
H	418.5	431	418.2	437.3
H1	175			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	40.3	50.3	43.3	61.3

Model Code	DY200 /R2			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	310			
C	185.6			
CS	93.8			
D	330	350	342.9	381
H	458.5	468.5	465.0	484
H1	190			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	61.9	68.9	71.9	96.9

■ **High Process Temperature Version Reduced Bore Type (/R2/HT): DY050-/R2/HT up to DY200-/R2/HT**



Model Code	DY050 /R2/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	170			
C	51.1			
CS	25.7			
D	155	155	152.4	165.1
H	453	453	451.7	458.1
H1	272			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19			
Weight kg	10.4	10.9	11	12.5

Model Code	DY080 /R2/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	200			
C	71			
CS	39.7			
D	185	200	190.5	209.6
H	475	482.5	477.8	487.3
H1	279			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	14	16.6	16.6	20.4

Model Code	DY100 /R2/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	220			
C	93.8			
CS	51.1			
D	210	225	228.6	254
H	509.5	517	518.8	531.5
H1	301			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	21.3	25.3	25.9	34.4

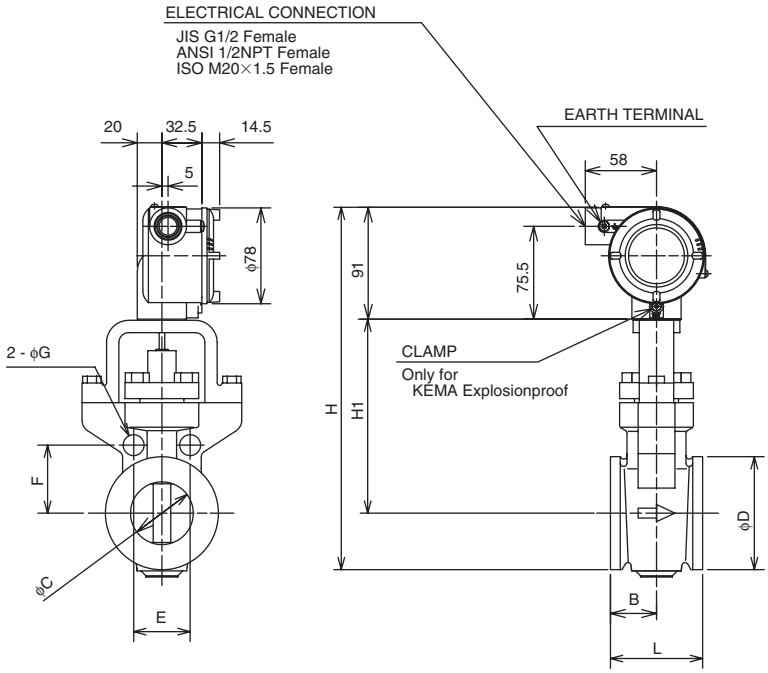
Model Code	DY150 /R2/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	270			
C	138.8			
CS	71			
D	280	305	279.4	317.5
H	561.5	574	561.2	580.3
H1	318			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	40.3	50.3	43.3	61.3

Model Code	DY200 /R2/HT			
Process Connection	BJ1	BJ2	BA1 BS1	BA2 BS2
L	310			
C	185.6			
CS	93.8			
D	330	350	342.9	381
H	601.5	611.5	608	627
H1	333			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	61.9	68.9	71.9	96.9

■ Stainless Steel Housing: DY015-/E1 up to DY100-/E1

■ Wafer Type

Unit: mm
(approx. inch)



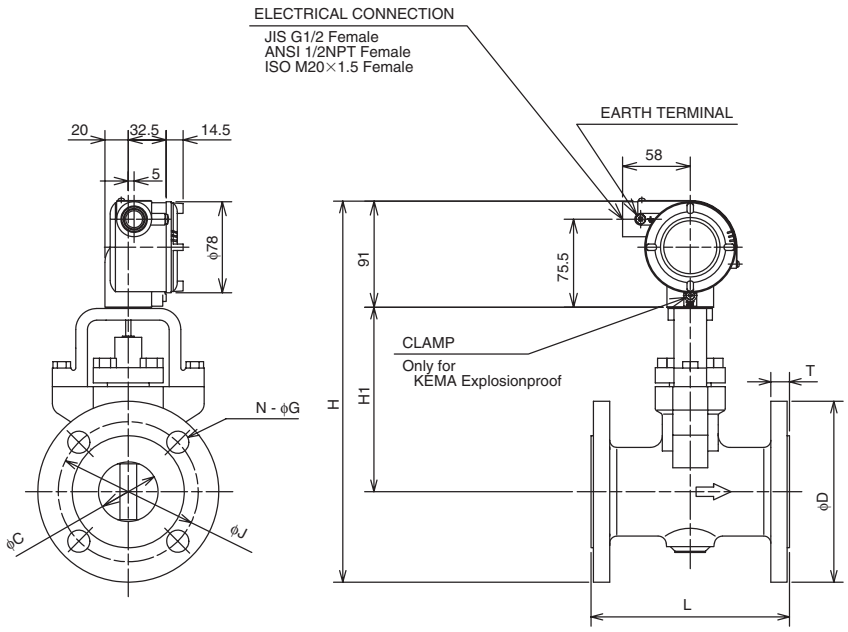
Model Code	DY015 (15A) /E1							DY025 (25A) /E1							DY040 (40A) /E1						
Process Connection	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD4	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD4	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD4
L	70							70							70						
B	35							35							35						
C	14.6							25.7							39.7						
D	35.1							50.8							73						
H	235.5							245.4							263.5						
H1	127							129							136						
E	49.5	49.5	56.6	42.7	47.1	47.1	46	63.6	63.6	67.2	56	62.9	62.9	60.1	74.2	74.2	84.9	69.7	80.8	80.8	77.8
F	24.7	24.7	28.3	21.4	23.5	23.5	23	31.8	31.8	33.6	28	31.4	31.4	30.1	37.1	37.1	42.4	34.8	40.4	40.4	38.9
G	13	13	17	14	14	14	13	17	17	17	14	17	17	13	17	17	21	14	20	20	17
Weight kg	2.9							3.8							4.4						

Model Code	DY050 (50A) /E1							DY080 (80A) /E1								DY100 (100A) /E1							
Process Connection	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD4	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD2	AD3 to AD4	AJ1	AJ2	AJ4	AP1 AA1	AP2 AA2	AP4 AA4	AD1 to AD2	AD3 to AD4
L	75							100								120							
B	37.5							40								50							
C	51.1							71								93.8							
D	92							127								157.2							
H	295							329.5								359.6							
H1	158							175								190							
E		45.9	49.8		48.6	48.6		57.4	61.2	65.1		64.4	64.4	61.2	61.2	67	70.8	78.5	72.9	76.6	82.6	68.9	72.7
F		55.4	60.1		58.7	58.7		69.3	73.9	78.5		77.7	77.7	73.9	73.9	80.8	85.5	94.7	88	92.5	99.7	83.1	87.8
G		17	17		17	17		17	21	21		20	20	17	17	17	21	23	17	20	23	17	21
Weight kg	6.1							9.5								12.9							

■ Stainless Steel Housing: DY015-/E1 up to DY100-/E1

■ Flange type

Unit: mm
(approx. inch)



Model Code	DY015 (15A) /E1										
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD4	BD5 to BD6	CA4	CA5
L	130						160	130		140	160
C	14.6										
D	95	95	115	88.9	95.3	95.3	120.7	95	105	95.3	120.7
H	265.5	265.5	275.5	262.5	265.5	265.5	278.5	265.5	270.5	265.5	278.5
H1	127										
T	12	14	20	11.2	14.2	21	28.8	16	20	19.9	28.8
J	70	70	80	60.5	66.5	66.5	82.6	65	75	66.5	82.6
N	4										
G	15	15	19	15.7	15.7	15.7	22.4	14	14	15.7	22.4
Weight kg	4.3	4.4	6	4.2	4.4	4.7	6.8	4.3	5.5	4.6	6.9

Model Code	DY025 (25A) /E1										
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD4	BD5 to BD6	CA4	CA5
L	150						190	150		170	190
C	25.7										
D	125	125	130	108	124	124	149.4	115	140	124	149.4
H	282.5	282.5	285	274	282	282	294.7	277.5	290	282	294.7
H1	129										
T	14	16	22	14.2	17.5	24	34.9	18	24	24	34.9
J	90	90	95	79.2	89	89	101.6	85	100	89	101.6
N	4										
G	19	19	19	15.7	19	19	25.4	14	18	19	25.4
Weight kg	7	7.2	8.7	6.7	7.3	7.8	11.2	7	9.7	8	11.5

Model Code	DY040 (40A) /E1										
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD4	BD5 to BD6	CA4	CA5
L	150						200	150		185	200
C	39.7										
D	140	140	160	127	155.4	155.4	177.8	150	170	155.4	177.8
H	297	297	307	290.5	304.7	304.7	315.9	302	312	304.7	315.9
H1	136										
T	16	18	26	17.5	20.6	28.8	38.2	18	26	28.8	38.2
J	105	105	120	98.6	114.3	114.3	124	110	125	114.3	124
N	4										
G	19	19	23	15.7	22.4	22.4	28.4	18	22	22.4	28.4
Weight kg	8.3	8.5	12	8.2	9.4	11.4	16.3	8.9	12.8	11.8	16.4

Model Code	DY050 (50A) /E1											
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD4	BD5	BD6	CA4	CA5
L	170						230	170			205	230
C	51.1											
D	155	155	165	152.4	165.1	165.1	215.9	165	180	195	165.1	215.9
H	326.5	326.5	331.5	325.2	331.5	331.5	357	331.5	339	346.5	331.5	357
H1	158											
T	16	18	26	19.1	22.4	31.8	44.5	20	26	28	33.3	46
J	120	120	130	120.7	127	127	165.1	125	135	145	127	165.1
N	4	8	8	4	8	8	8	4	4	4	8	8
G	19	19	19	19	19	19	25.4	18	22	26	19	25.4
Weight kg	11.2	11.7	14.4	11.8	13.3	14.9	26.6	11.4	14.4	15.3	15.9	27

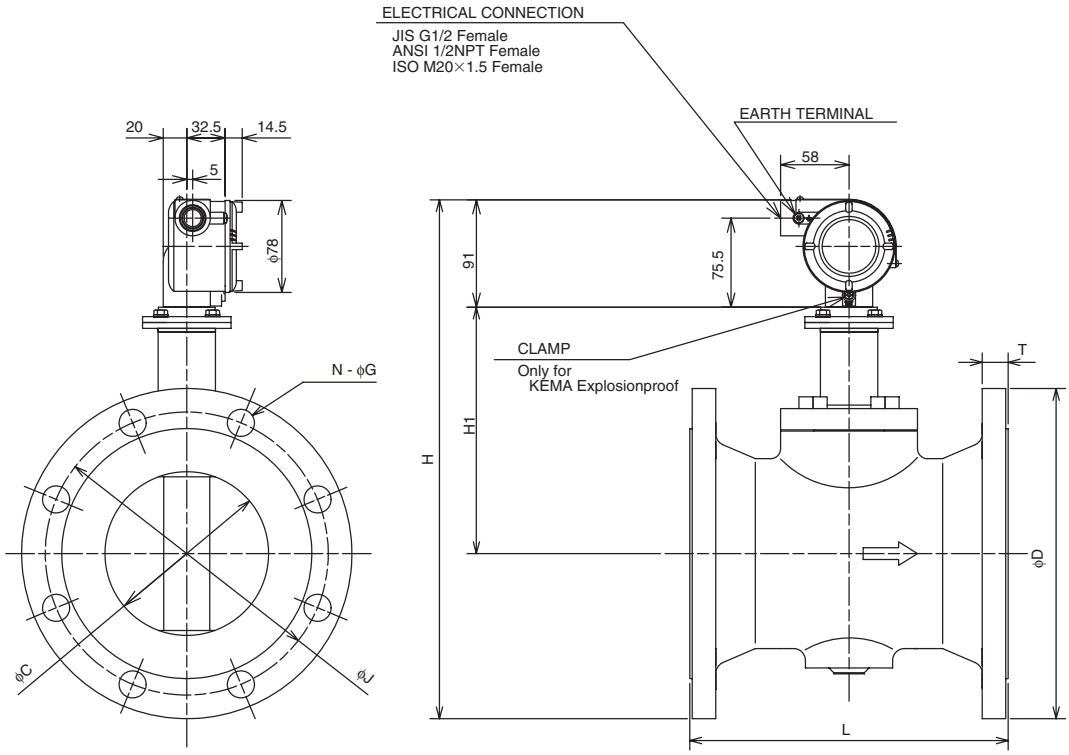
Model Code	DY080 (80A) /E1												
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD2	BD3 to BD4	BD5	BD6	CA4	CA5
L	200						245	200				235	250
C	71												
D	185	200	210	190.5	209.6	209.6	241.3	200	200	215	230	209.6	241.3
H	358.5	366	371	361.5	370.8	370.8	386.5	366	366	373.5	381	370.8	386.5
H1	175												
T	18	22	32	23.9	28.4	38.2	44.5	20	24	28	32	39.7	46
J	150	160	170	152.4	168.2	168	190.5	160	160	170	180	168	190.5
N	8	8	8	4	8	8	8	8	8	8	8	8	8
G	19	23	23	19	22.4	22.4	25.4	18	18	22	26	22.4	25.4
Weight kg	17.5	20.1	25.5	20.1	23.9	25.5	35.8	19.5	20.1	24.2	27.1	27.2	36.4

Model Code	DY100 (100A) /E1												
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD2	BD3 to BD4	BD5	BD6	CA4	CA5
L	220					240	280	220				270	285
C	93.8												
D	210	225	250	228.6	254	273	292.1	220	235	250	265	273	292.1
H	386	393.5	406	395.3	408	417.5	427	391	398.5	406	413.5	417.5	427
H1	190												
T	18	24	36	23.9	31.8	44.5	50.9	20	24	30	36	46	52.4
J	175	185	205	190.5	200.2	216	235	180	190	200	210	216	235
N	8												
G	19	23	25	19	22.4	25.4	31.8	18	22	26	30	25.4	31.8
Weight kg	22.9	26.9	38.2	27.5	36	50.9	56	23.3	27.5	33.1	39.8	52.9	56.7

■ **Stainless Steel Housing: DY150-/E1 up to DY300-/E1**

■ **Flange type**

Unit: mm
(approx. inch)



Model Code	DY150 (150A) /E1												
Process Connection	BJ1	BJ2	BJ4	BP1 BS1 BA1	BP2 BS2 BA2	BP4 BS4 BA4	BS5 BA5	BD1 to BD2	BD3 to BD4	BD5	BD6	CA4	CA5
L	270					310	336	270				325	340
C	138.8												
D	280	305	355	279.4	317.5	356	381	285	300	345	355	356	381
H	440	452.4	477.5	439.7	458.5	478	490.5	442.5	450	472.5	477.5	478	490.5
H1	209												
T	22	28	44	25.4	36.6	54.4	62	22	28	36	44	55.7	63.6
J	240	260	295	241.3	269.7	292	317.5	240	250	280	290	292	317.5
N	8	12	12	8	12	12	12	8	8	8	12	12	12
G	23	25	33	22.4	22.4	28.4	31.8	22	26	33	33	28.4	31.8
Weight kg	33.5	43.5	76.5	36.5	54.5	84.5	106.1	33.5	43	58.2	76.5	90.1	107.1

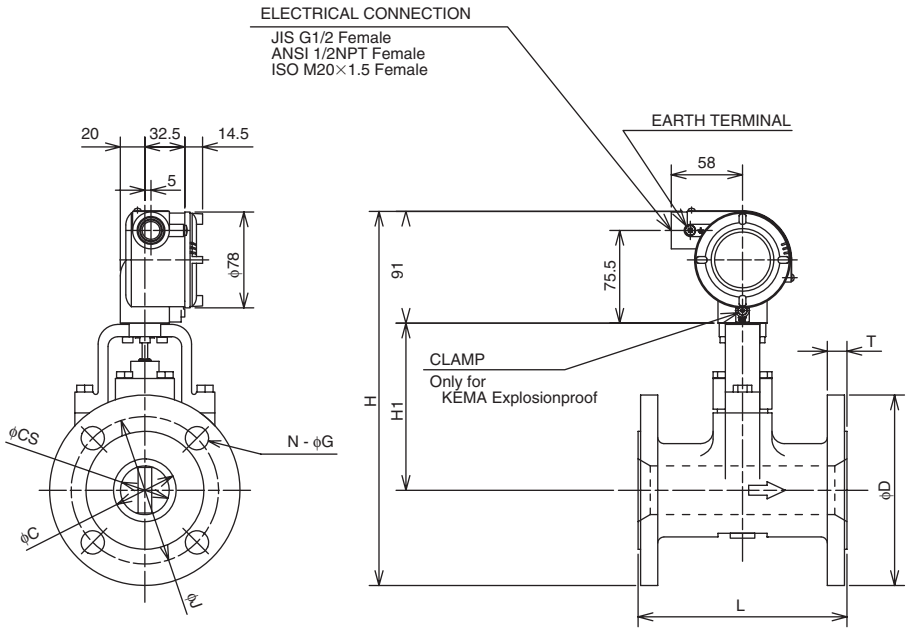
Model Code	DY200 (200A) /E1											
Process Connection	BJ1	BJ2	BP1 BS1 BA1	BP2 BS2 BA2	BS4 BA4	BS5 BA5	BD1	BD2	BD3	BD4	CA4	CA5
L	310				370	386	310				375	390
C	185.6											
D	330	350	342.9	381	419.1	469.9	340	340	360	375	419.1	469.9
H	497	507	503.5	522.5	541.5	567	502	502	512	519.5	541.5	567
H1	241											
T	22	30	28.4	41.1	62	69.9	24	24	30	34	63.6	71.4
J	290	305	298.5	330.2	349.3	393.7	295	295	310	320	349.3	393.7
N	12	12	8	12	12	12	8	12	12	12	12	12
G	23	25	22.4	25.4	31.8	38.1	22	22	26	30	31.8	38.1
Weight kg	45.5	52.5	55.5	80.5	136.1	182.1	46.4	46.4	53.7	56	139.1	183.1

Model Code	DY250 (250A) /E1				DY300 (300A) /E1			
Process Connection	BJ1	BJ2	BP1 BS1 BA1	BP2 BS2 BA2	BJ1	BJ2	BP1 BS1 BA1	BP2 BS2 BA2
L	370				400			
C	230.8				276.2			
D	400	430	406.4	444.5	445	480	482.6	520.7
H	568	583	571.2	590.5	620.5	638	639.3	658.5
H1	277				307			
T	24	34	30.2	47.8	24	36	31.8	50.8
J	355	380	362	387.4	400	430	431.8	450.9
N	12	12	12	16	16	16	12	16
G	25	27	25.4	28.5	25	27	25.4	31.8
Weight kg	78.1	100.1	90.1	125.1	100.1	128.1	140.1	178.1

■ Stainless Steel Housing Reduced Bore Type (/E1/R1): DY025-/E1/R1 up to DY150-/E1/R1

■ Flange type

Unit: mm
(approx. inch)



Model Code	DY025 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	150			
C	25.7			
CS	14.6			
D	125	125	108	124
H	280.5	280.5	272	280
H1	127			
T	14	16	14.2	17.5
J	90	90	79.2	89
N	4			
G	19	19	15.7	19
Weight kg	6.2	6.6	5.6	7.1

Model Code	DY040 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	150			
C	39.7			
CS	25.7			
D	140	140	127	155.4
H	290	290	283.5	297.7
H1	129			
T	16	18	17.5	20.6
J	105	105	98.6	114.3
N	4			
G	19	19	15.7	22.4
Weight kg	9.7	10.2	9.5	12.7

Model Code	DY050 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	170			
C	51.1			
CS	39.7			
D	155	155	152.4	165.1
H	304.5	304.5	303.2	309.5
H1	136			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19	19	19	19
Weight kg	10.6	11.2	11.5	13.7

Model Code	DY080 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	200			
C	71			
CS	51.1			
D	185	200	190.5	209.6
H	341.5	349	344.5	353.8
H1	158			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	18.7	21.8	22	27

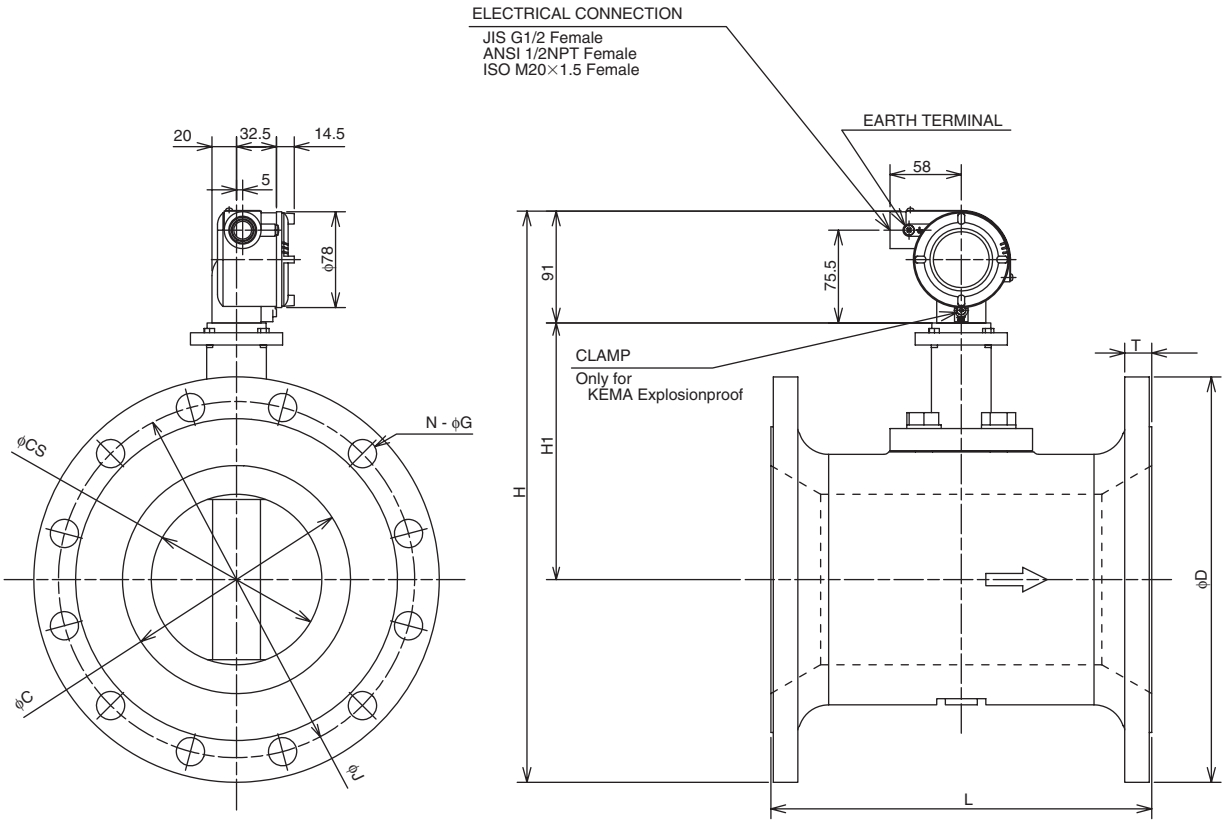
Model Code	DY100 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	220			
C	93.8			
CS	71			
D	210	225	228.6	254
H	371	378.5	380.3	393
H1	175			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	25.1	30.1	30.7	41.4

Model Code	DY150 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	270			
C	138.8			
CS	93.8			
D	280	305	279.4	317.5
H	421	433.5	420.7	439.5
H1	190			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	46	56.4	49.5	71.8

■ Stainless Steel Housing Reduced Bore Type (/E1/R1): DY200-/E1/R1

■ Flange type

Unit: mm
(approx. inch)

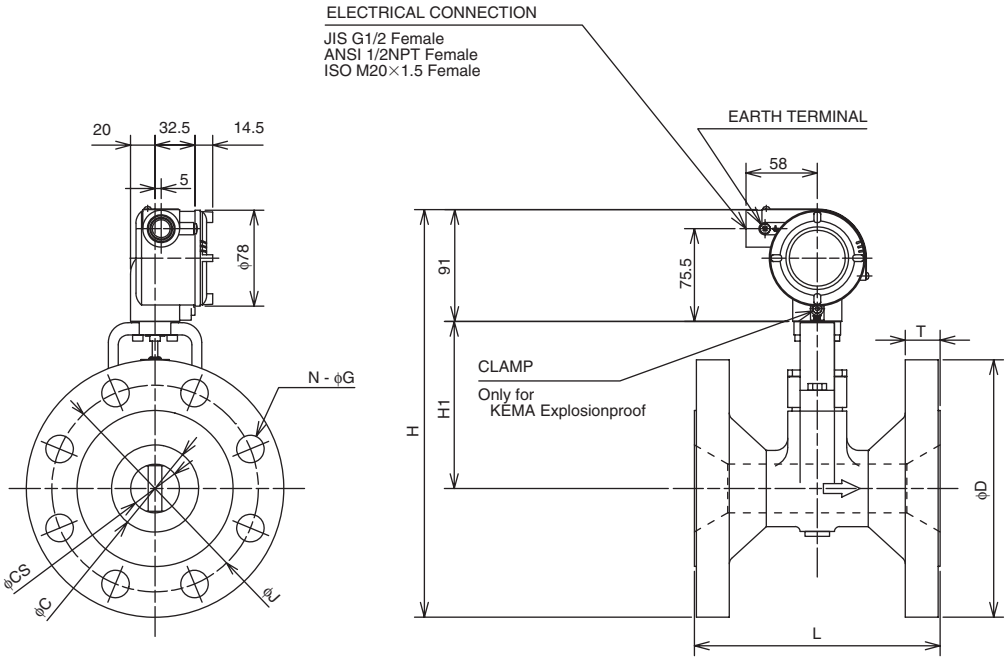


Model Code	DY200 /E1 /R1			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	310			
C	185.6			
CS	138.8			
D	330	350	342.9	381
H	465	475	471.5	490.5
H1	209			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	58.8	74.2	70.8	103

■ Stainless Steel Housing Reduced Bore Type (/E1/R2): DY040-/E1/R1 up to DY200-/E1/R2

■ Flange type

Unit: mm
(approx. inch)



Model Code	DY040 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	150			
C	39.7			
CS	14.6			
D	140	140	127	155.4
H	288	288	281.5	295.7
H1	127			
T	16	18	17.5	20.6
J	105	105	98.6	114.3
N	4			
G	19	19	15.7	22.4
Weight kg	7.8	8	7.7	8.9

Model Code	DY050 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	170			
C	51.1			
CS	25.7			
D	155	155	152.4	165.1
H	297.5	297.5	296.2	302.5
H1	129			
T	16	18	19.1	22.4
J	120	120	120.7	127
N	4	8	4	8
G	19			
Weight kg	10.1	10.6	10.7	12.2

Model Code	DY080 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	200			
C	71			
CS	39.7			
D	185	200	190.5	209.6
H	319.5	327	322.5	331.8
H1	136			
T	18	22	23.9	28.4
J	150	160	152.4	168.2
N	8	8	4	8
G	19	23	19	22.4
Weight kg	13.7	16.3	16.3	20.1

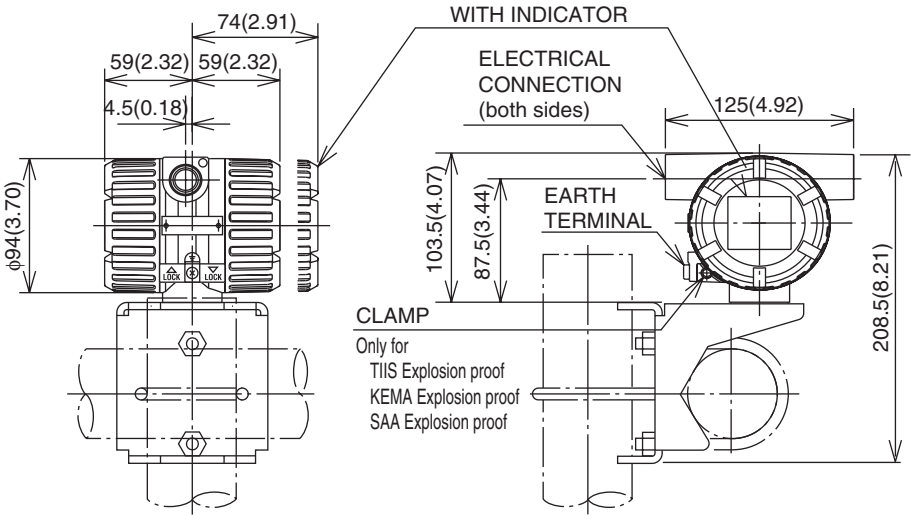
Model Code	DY100 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	220			
C	93.8			
CS	51.1			
D	210	225	228.6	254
H	354	361.5	363.3	376
H1	158			
T	18	24	23.9	31.8
J	175	185	190.5	200.2
N	8			
G	19	23	19	22.4
Weight kg	21	25	25.6	34.1

Model Code	DY150 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	270			
C	138.8			
CS	71			
D	280	305	279.4	317.5
H	406	418.5	405.7	424.5
H1	175			
T	22	28	25.4	36.6
J	240	260	241.3	269.7
N	8	12	8	12
G	23	25	22.4	22.4
Weight kg	40.4	50.4	43.4	61.4

Model Code	DY200 /E1 /R2			
Process Connection	BJ1	BJ2	BA1 BS1 BP1	BA2 BS2 BP2
L	310			
C	185.6			
CS	93.8			
D	330	350	342.9	381
H	446	456	452.5	471.5
H1	190			
T	22	30	28.4	41.1
J	290	305	298.5	330.2
N	12	12	8	12
G	23	25	22.4	25.4
Weight kg	62	69	72	97

■ Remote Type Converter (DYA)

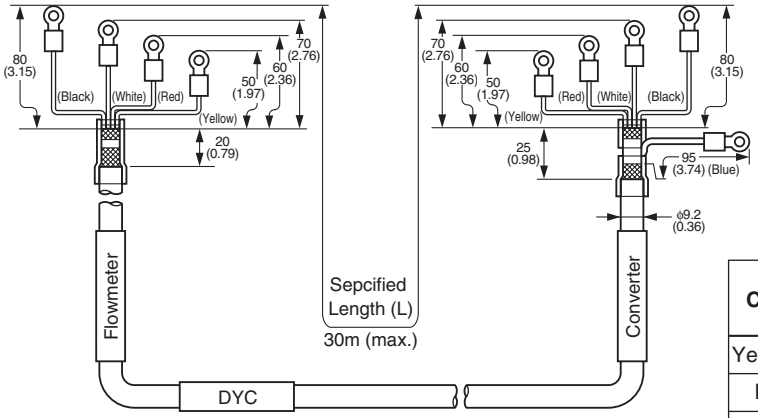
Unit: mm
(approx. inch)



Weight: 1.9 kg (4.19lb), 4.1 kg (9.04lb) for /E1.
Note: For flowmeters with indicator, add 0.2 kg.(0.44lb), 0.3 kg (0.66lb) for /E1.

■ Signal Cable for Remote Type (DYC)

Unit: mm
(approx. inch)

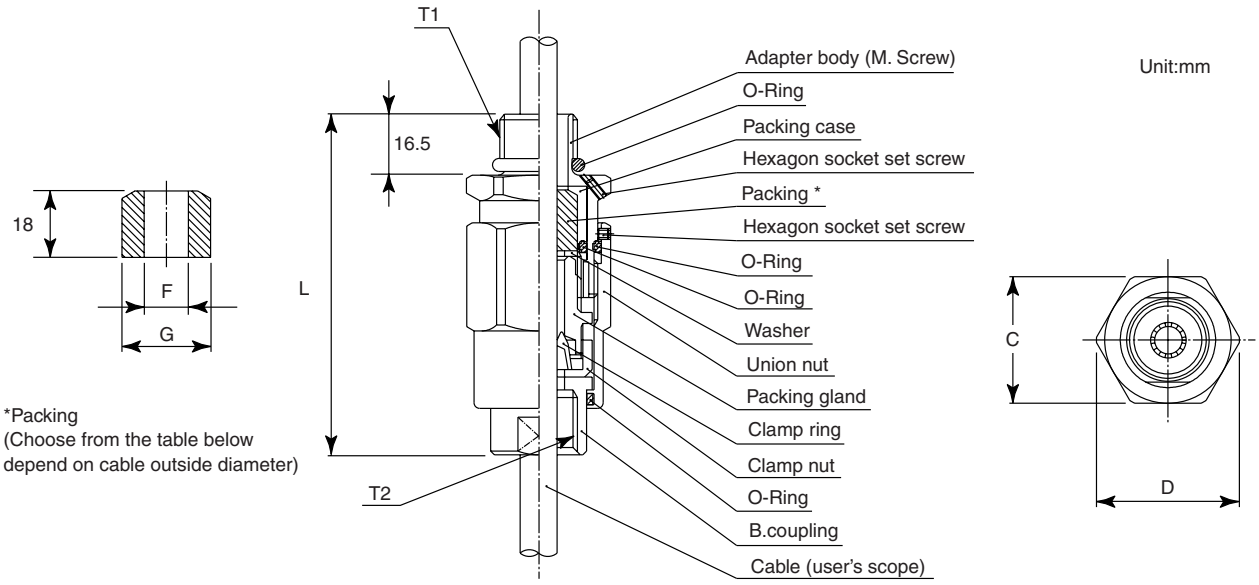


Cable Color and Terminal

Color	Terminal	
	Flow meter	Converter
Yellow(*1)	T	T
Red	A	A
White	B	B
Black	⏚	C
Blue		⏚

(*1) Only for /MV

■ **Flameproof Packing Adapter (Option code /G11,/G12)**



Size					Cable outer diameter	Packing dimensions		Identification mark	Weight (kg)
T1	T2	C	D	L		F	G		
G 1/2	G 1/2	35	39	94.5	ϕ8 to ϕ10	ϕ10.0	ϕ20.0	16 8-10	0.26
					ϕ10 to ϕ12	ϕ12.0		16 10-12	

Fig50

= = = = OPERATING INSTRUCTIONS = = = =

Specify the following when ordering :
a) Model and suffix codes.
b) Sizing data: Mandatory for ordering.
Create the sizing data by using the latest digitalYEWFLO Sizing Program.
c) Selection of UPPER DISP. FLOWRATE
Except: the Remote Type Detector (-N)
d) Tag No.:
Tag plate on the converter: up to 16 characters
Stainless Steel Tag Plate (/SCT): up to 30 characters
Software Tag:
BRAIN (-D): up to 16 characters
HART (-E or -J [HART 5]): up to 8 characters
HART (-J [HART 7]): up to 32 characters
Fieldbus (-F): up to 32 characters
e) Multi-Variable Type Selection
f) Final Destination Selection
g) TIIS Flameproof Type for Inspection Carry-in Code.
h) HART Protocol Revision:
For Output signal/Communication (Code: -J), specify HART 5 or HART 7.

= = = = = RELATED INSTRUMENTS = = = = =

SDBT Distributor ..... See GS 1B4T1-E
See GS 1B4T2-E

= = = = = = RELATED MATERIAL = = = = = =

Model DY Vortex Flowmeter	TI 1F6A0-01E
Model DY, DYA FOUNDATION Fieldbus Communication Type Vortex Flowmeter	GS 01F06F01-01EN