



Clark Solutions  
Toll Free: 800-253-2497 Tel: 978-568-3400  
e-mail: sales@clarksol.com www.clarksol.com

## DUALPULSE – insertion flowmeters

DP490 & DP525 are cost effective stainless steel flowmeters for measuring the flow of water, fuels & other low viscosity liquids in pipes sizes 1.5"~100" (40~2500mm). Insertion flowmeters are installed with the metering head 1/8<sup>th</sup> into the pipe resulting in very little pressure drop. They do not require external power when used with the Flomec rate totalizers, however some options such as high temperature & non-magnetic models require external power.

Applications include HVAC, hot & chilled water, fire systems, water distribution (management & treatment), boiler feed water & hydrant flow testing.

### FEATURES:

- IP68 (NEMA6) submersible 316SS construction.
- Low cost of ownership, wide flow range.
- Rugged & compact design.
- Intrinsically safe hazardous area versions.
- Integral or remote pre-amplifiers & flow instruments.
- DP525 version suitable for "hot tap" installation.
- Quadrature pulse output option & Bi-Directional Flow Measurement
- Integral 4-20mA output option

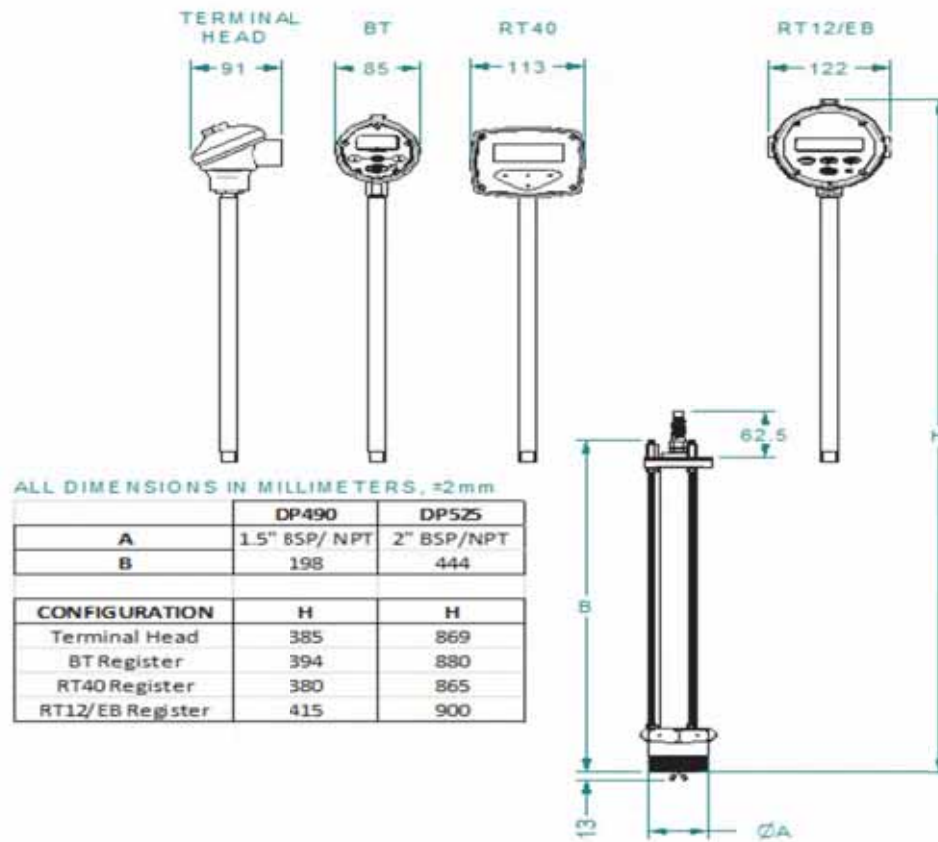


## General Specifications

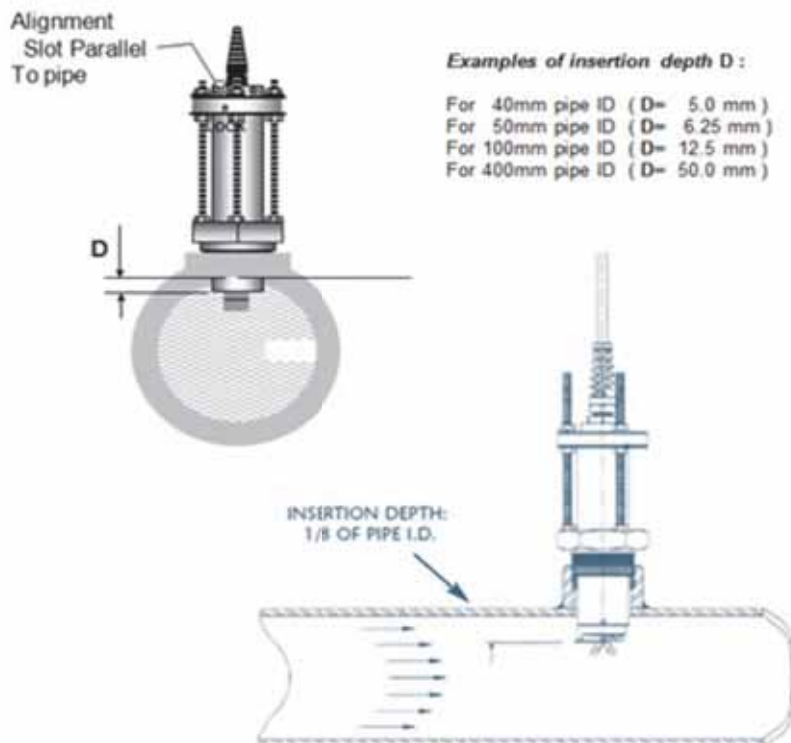
Model Prefix	DP490	DP525
Suit pipe sizes	40~900mm (1.5" ~ 35")	50~2500mm (2"~100")
Pipe connection	1.5" or 2" BSPT or NPT male	2" BSPT or NPT male
Flow range	0.25 ~ 6300 litres/sec (4 ~ 99600 USGM)	0.4 ~ 49000 litres/sec (6 ~ 780000 USGM)
Flow velocity range	0.3 ~ 10 metres/sec (1 ~ 33 feet/sec)	
Linearity	typically ± 1.5% with well-established flow profile	
Temperature range	-40°C ~ +150°C ( -40°F ~ +300°F )	
Maximum pressure	80 bar (1160 psig)	
Materials	316ss body & rotor shaft, PVDF rotor (PEEK rotor optional)	
<b>Pulse Outputs</b>		
Reed switch	30Vdc x 200mA (max.), Nom. 0 ~ 80hz*	
Hall effect	3 wire NPN, 5 ~ 24 VDC, 20mA (max.) Nom. 0 ~ 240hz	
Voltage Pulse	Self-Generated voltage. Nom. 0 ~ 240hz	
Non-magnetic sensor	3 wire NPN, 5~24Vdc max., 20mA max. Nom. 0 ~ 240hz	
Optional outputs	4~20mA, scaled pulse, quadrature pulse, flow alarms or two stage batch control	
Protection class	IP68 (NEMA6), integral ancillaries can be supplied I.S. ( intrinsically safe )	
Overall dimensions	Refer over page	

\* Reed Switch resolution is 1/3<sup>rd</sup> that of the NPN Hall Effect or Voltage pulse outputs.

## Over all Dimensions:



## Standard Installation:



## Model Coding – Dual Pulse Insertion Flowmeters:



DP490	1.5 to 36" pipes ( 41 – 900mm )
DP525	2 to 100" pipes ( 50 – 2500 mm ) suitable for "hot-tap" installations (valve not included)

### Body material

S	316 Stainless Steel
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### Rotor & bearing materials

1	PEEK high temperature rotor with stainless steel rotor shaft; -150°C (300°F)
2	PVDF rotor with 316 stainless steel rotor shaft ( standard ); 100°C (212°F)

### O-ring materials

1	Viton ( standard ); -15°C ( 5°F ) minimum
2	EPR ( Ethylene Propylene Rubber ); -40→125°C ( -40→260°F )
3	Teflon encapsulated viton or application specific; -15°C ( 5°F ) minimum
4	Buna-N ( Nitrile ); -40→100°C ( -40→212°F )

### Temperature limits

5	100°C (212°F) standard; ( 85°C [185°F] maximum for non magnetic output type 4 ) and FI 4-20mA
2	125°C (260°F) - available with electrical connections 5 & 6 & PEEK rotor only
3	150°C (300°F) - NPN output only ( available with electrical connection 5 & PEEK rotor only )

### Process connections

- 1	BSPT male thread - 1½" ( DP490 ) 2" ( DP525 )
- 2	NPT male thread - 1½" ( DP490 ) 2" ( DP525 )
- 3	2" BSPT male thread on the DP490
- 4	2" NPT male thread on the DP490

### Pick-up type

1	NPN open collector & voltage pulse ( standard )
2	NPN open collector(s) only ( for temp code 3 or QP option )
3	Reed switch only ( may be used with an I.S. barrier or instrument in hazardous areas )
4	Non magnetic rotor with NPN output ( for liquids with ferrous impurities, needs power )
8	NPN open collector & Reed Switch

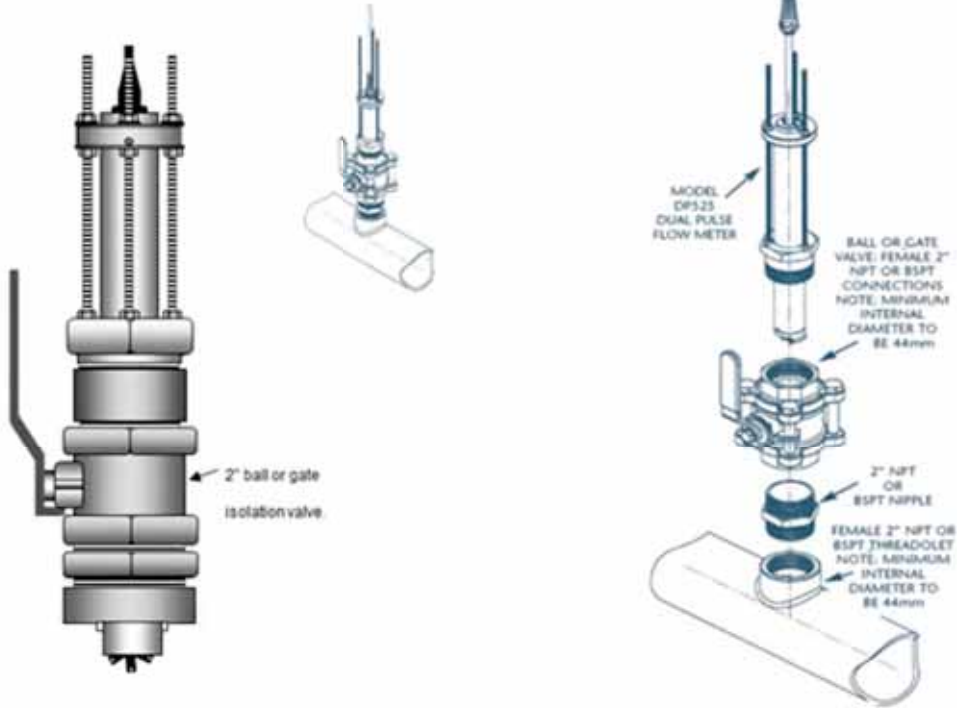
### Electrical connections

1	3 metres cable [ 10ft ] ( standard )
2	10 metres cable [ 33ft ]
3	20 metres cable [ 66ft ]
4	50 metres cable [ 164ft ] ( for longer lengths refer to factory )
5	Terminal box on stem kit ( add this for integral output option FI, 4-20mA output )
6	Stem kit ( price included with integral options B2, B3, R2, R3 & E0 )

### Integral options

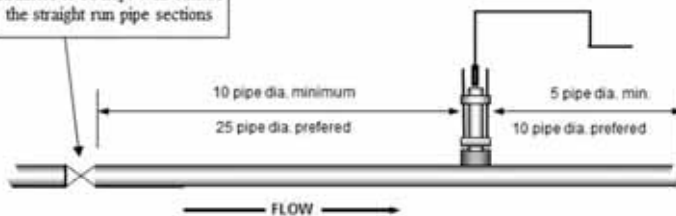
	QP	Quadrature pulse output ( requires PD2 for bi-directional flow capability )
with scaleable pulse output	B2	BT11 dual totaliser ( with scaleable pulse output )
IECEX & ATEX approved	B3	I.S. intrinsically safe BT11 including output
scaled pulse, alarms & 4-20mA	R0	RT12 rate totaliser with all outputs ( Alloy housing )
scaled pulse, alarms & 4-20mA	R2	RT12 rate totaliser with all outputs
IECEX & ATEX approved	R3	I.S. intrinsically safe RT12 with all outputs
scaled pulse + backlighting	R4	* RT40 large LCD flow rate totaliser
	FI	Loop powered 4-20mA analog output ( also add elec. connection 5 terminal box on stem kit )
	E0	Ecobatch dc powered two stage batch controller
	SB	Specific build requirement

# Hot Tap Installation



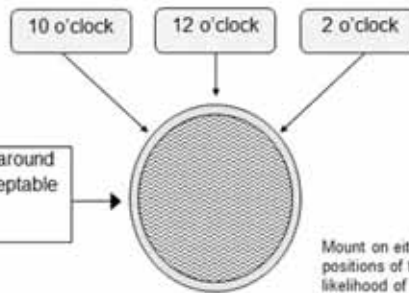
Major obstructions such as pumps, valves, reducers or strainers to be kept well outside the straight run pipe sections

## Installation Straight Piping Requirements



## Orientation

Other positions around the pipe are acceptable



Mount on either the 2, 10 or 12 o'clock positions of the pipe. If there is any likelihood of air entrainment in a horizontal pipe do not locate the flow transducer in the 12 o'clock position.

### Authorized Distributor:



Clark Solutions  
 10 Brent Drive  
 Hudson, MA 01749  
 Toll Free: 800-253-2497 Tel: 978-568-3400  
 Fax: 978-568-3400  
 e-mail: sales@clarksol.com www.clarksol.com