*Hydro*FLOW®

p RANGE

HYDROPATH Technology | The home of *Hydro*FLOW®

Electrical Specifications

Transducer unit
Main unit: Anodised Aluminium
End plates: UL V-0 rated polycarbonate

Water and Dust Protection
IP Rating:
Transducer IP68 IEC 60529
PSU IP66 IEC 60529

Built-in EMI Filter
Meets: FCC 20780 Class B
VDE 0871 Level A

Safety
Europe and Worldwide:
IEC61010-190+A1:92 +A2:95 ~EN61010
Tested accorded to CENELEC National Requirements

USA: UL3101-1
Canada: CSA22.2 No:1010.1-92
CAN/CSA-22.2 No. 0.4-M1982

Over-voltage (Transients)
10 to 20% above nominal

Remote Monitoring Facility
Normally open circuit or 5V output
(Special terminated cable can be provided to facilitate connection)

Environmental Specifications
Installation category: Cat II; Altitude: <2000 Mtrs (6562'); Operating Temperature: -20 to + 50º C (-4 to 122ºF);
Maximum relative humidity; Max 80% up to 31ºC (87º F) decreasing linearly to 50% RH at 40º C (104º F)

Overload Protection
Continuous short or open circuit on all outputs.

Insulation
Basic insulation with the metal enclosure bonded to earth.

Servicing
No user repairable parts are fitted. Repair must be undertaken by an authorised repair centre.

Panel Indicators
The PSU is fitted with LED indicator lights. The Green LED indicates that the power is on, and the Red indicates that a signal is being transmitted.

CSA Certification and CB Test Certificate

In accordance with the International (IEC) and UL/CSA standards listed above.

CE

Manufactured to BSEN9002

To be installed in accordance with the latest IEE wiring instructions.
Fuse rating: 1A.

C SA US

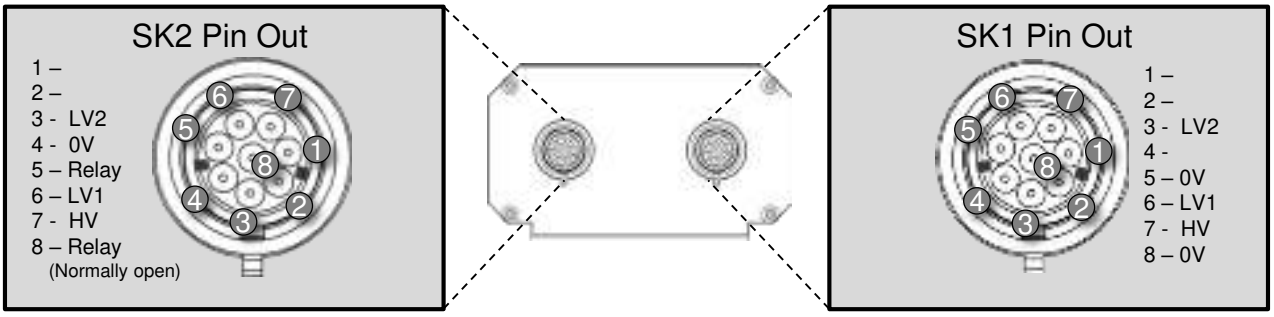
To be installed in accordance with the latest IEE wiring instructions.
Fuse rating: 1A.

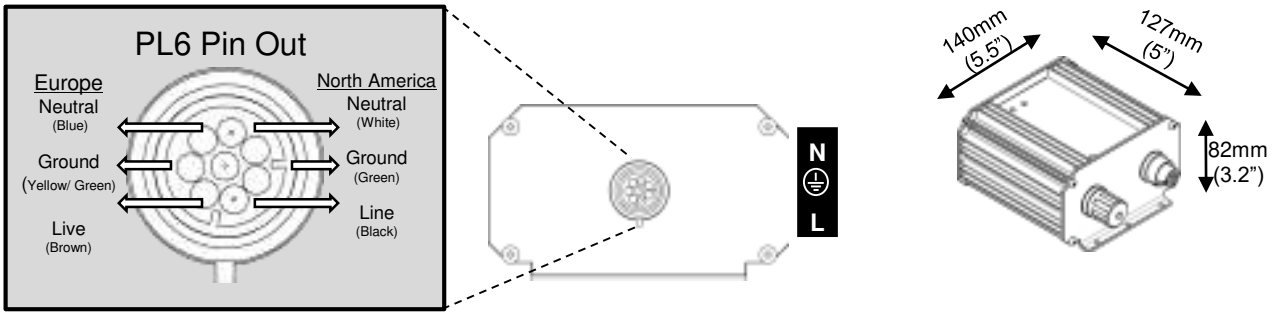
Electrical Specifications

PSU Input voltage: 87 – 240V AC **Frequency:** 47 – 63 Hz

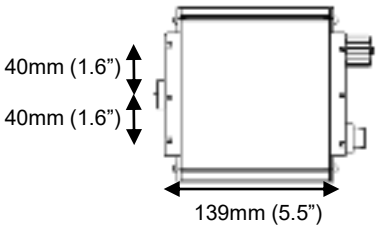
PSU Model	LV1	LV2	HV	Input Power	Fuse Rated 250 V	Output Power
DEL638	+12V	+15V	+24 or 30 V*	20W max	1.6A (T)	14W
CP1	+12V	+15V	+24 or 30V*	25W max	1.0A (T)	15W
CP2	+12V	+15V	+35 or 90V*	65W max	1.0A (T)	45W

***** Voltage depends on transducer model used





PSU Panel Indicators
GREEN: Power ON
RED: Signal is being transmitted



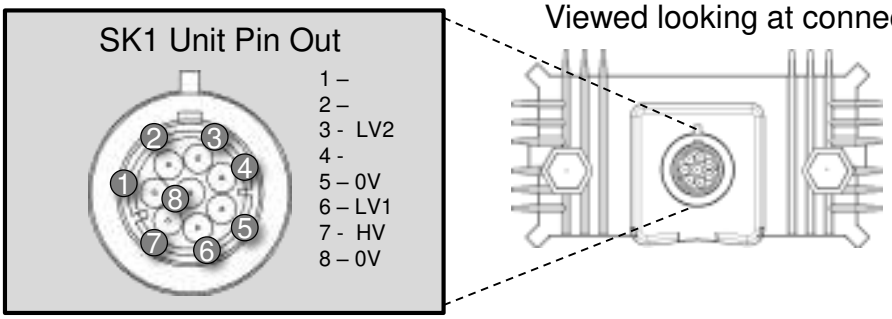
Transducer DC Input Voltage:

PSU Model	LV1	LV2	HV	Input Power
DEL638	+12V	+15V	+24 or 30V*	14W
CP1	+12V	+15V	+24 or 30V*	15W
CP2	+12V	+15V	+35 or 90V*	45W

***** Voltage depends on transducer unit used

Hydropath may at times replace a particular unit with one of a higher specification without notice.

Viewed looking at connector end of transducer unit



Mechanical Details

The *Hydro***FLOW** P Range water conditioner is designed to improve water quality via flocculation to enhance filtration and biofouling control. P Range units are most commonly used on Swimming Pools and Cooling Towers.

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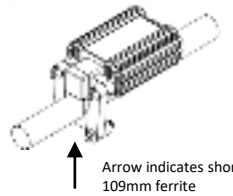
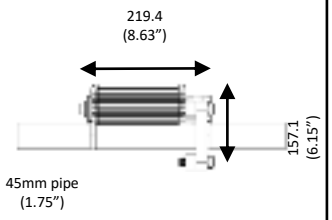
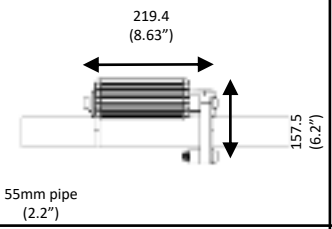
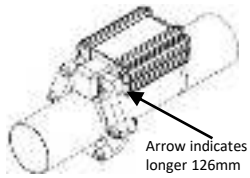
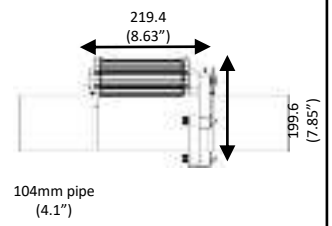
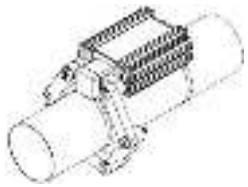
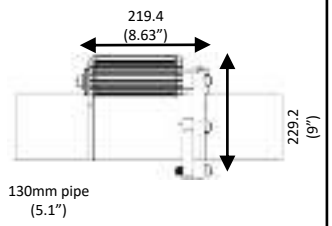
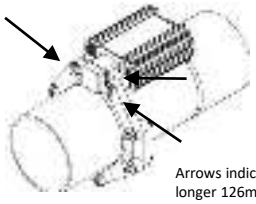
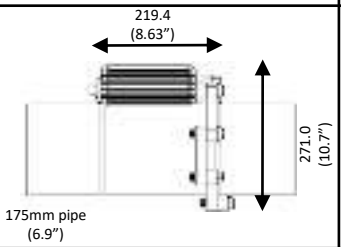
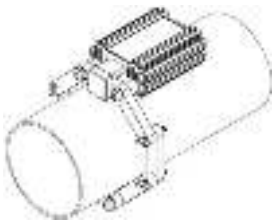
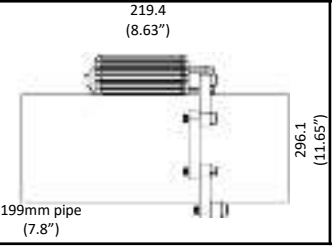
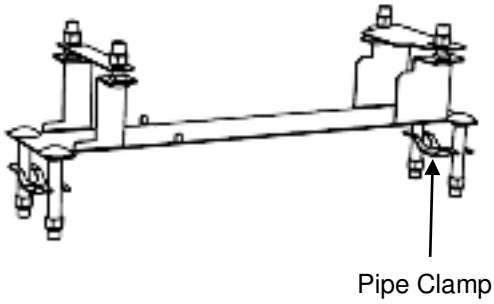
Model	Ferrite Arrangement	Dimensions mm (inches)	Ferrites	Total Weight kg (lbs)
P45			1 x 109mm (4.25") 3 x 126mm (5.0")	4.1 (8.8)
P60			4 x 126mm (5.0")	4.2 (9.2)
P100			5 x 109mm (4.25") 1 x 126mm (5.0")	4.4 (9.7)
P130			6 x 126mm (5.0")	4.6 (10.1)
P150			5 x 109mm (4.25") 3 x 126mm (5.0")	5.4 (11.9)
P190			8 x 126mm (5.0")	5.8 (12.8)

•All units draw less than 1 amp of current at 120V AC
•Listed weights include: Transducer unit, power supply, ferrites, cables and mounting hardware.

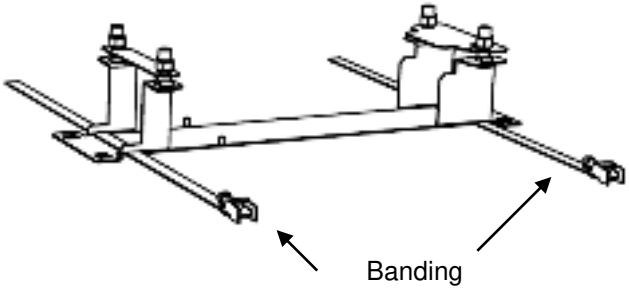
Assembly

DO NOT POWER UP UNIT UNTIL ALL FERRITES SUPPLIED ARE CONNECTED.

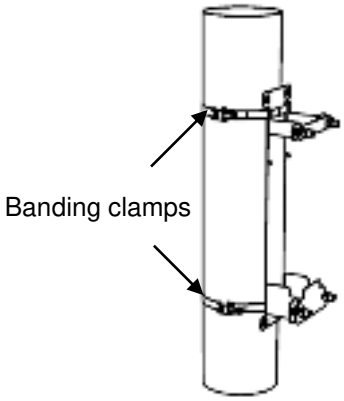
- The unit is supplied with a bracket for ease of mounting to the pipe. The two upper plates should be loosely secured with bolts before installation.
- Smaller units are secured to the pipe using steel clamps and bolts



- For larger units, the brackets are supplied with stainless steel banding.
- Pass the two stainless steel bands through the slots in the bracket.



- Place the bracket on the pipe.
- If installing on a vertical pipe, place the bracket with the smaller plate upwards to ease fitting of hexagon nuts.
- Tighten steel hex nuts to secure clamps for smaller units
- Secure straps on larger units by tightening clamps with flathead screwdriver or hex socket driver



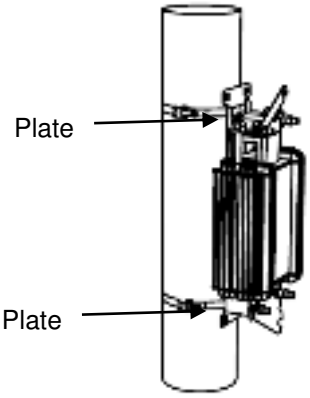
WARNING

The system must be used as specified. Failure to do so will prevent correct operation of device and may impair safety.

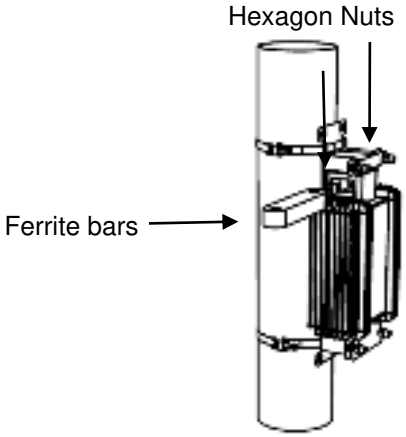
Assembly

DO NOT POWER UP UNIT UNTIL ALL FERRITES SUPPLIED ARE CONNECTED.

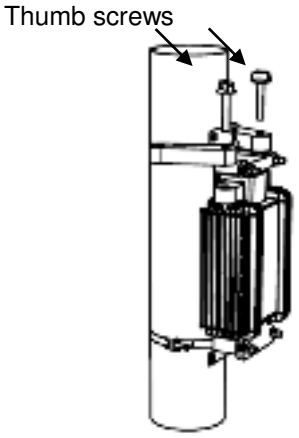
- Place the unit on the bracket and hold in place using the swinging plates.
- Secure by tightening the four steel nuts.



- Insert the two hexagon nuts into the holes in the end plate, next to the ferrite holding cage.
- The transducer unit is supplied with at least one **long** ferrite bar. Insert this through the holding cage until the holes line up with the hexagon nuts.



- Take a second ferrite, insert a plastic thumb screw through both ferrite bars and loosely screw into hexagon nut.
- Repeat on opposite side.



WARNING
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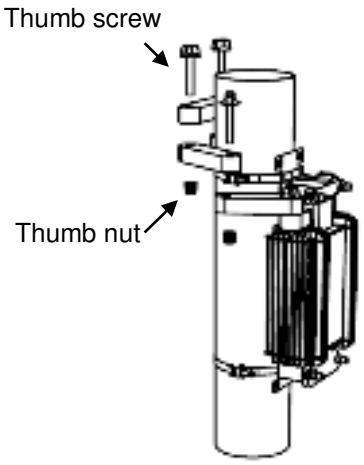
Assembly

DO NOT POWER UP UNIT UNTIL ALL FERRITES SUPPLIED ARE CONNECTED.

- Assemble **all** the other ferrites around the pipe according to the mechanical configuration specified for the unit.
- Loosely secure each ferrite with plastic thumb screws and thumb nuts.



- Once the ferrite ring is complete, tighten all wing nuts until hand tight.
- **Do not over tighten as ferrites are fragile.**

WARNING

The system must be used as specified. Failure to do so will prevent correct operation of device and may impair safety.

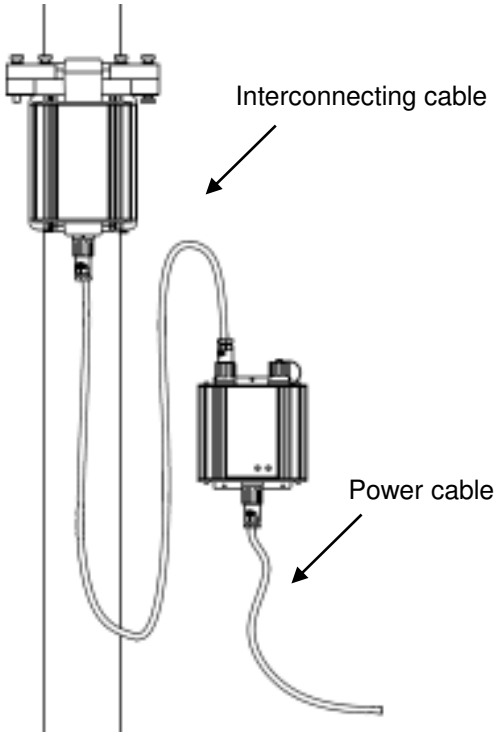
Assembly

DO NOT POWER UP UNIT UNTIL ALL FERRITES SUPPLIED ARE CONNECTED.

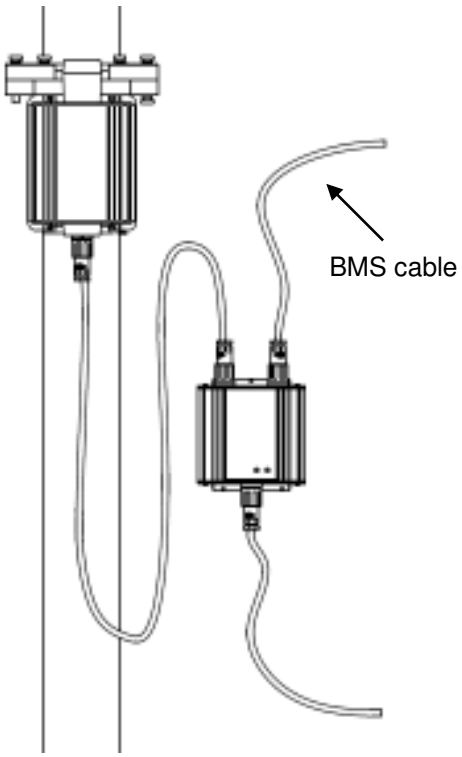
- Install the Power Supply Unit (PSU) in a convenient position so that the LED lights can be easily viewed.
- In accordance with local code and regulations, connect the PL6 port to the electrical power supply (87V-240V AC).

- Connect between the PSU SK1 and the transducer SK1 port using the supplied interconnecting cable .

- Energise the electrical power supply and ensure that the Red and Green LED lights on the PSU are glowing brightly.



- **Remote Monitoring** is available for use with Building Management Systems (BMS). The cable (supplied separately) plugs into the SK2 port of the PSU, which is normally fitted with a protective cap.
- For additional information please contact an authorised representative.



WARNING
The system must be used as specified. Failure to do so will prevent correct operation of device and may impair safety.

Location Criteria

The P range enhances filtration by applying a charge to particles that pass through it in order to flocculate suspended material, and combats biological growth. Most systems have a pump before a filter and this is the best location. The turbulence produced by the pump allows the particles to mix, join up and aggregate and these can then be removed by the filter.

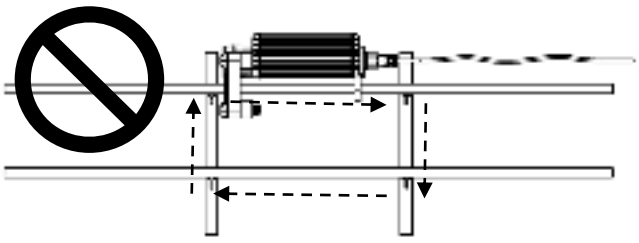
•Ensure that there is enough turbulence to allow the particles to mix and flocculate before the filter.

•Fit the *Hydro***FLOW** P range before the pump if possible.

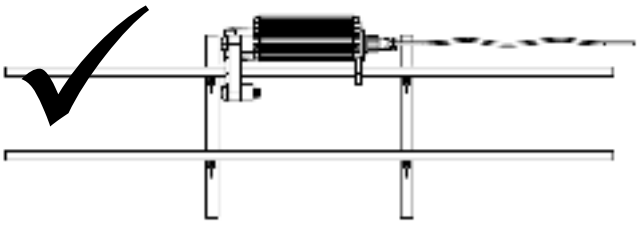
Electrical Loops

An electrical loop is created whenever an electrical connection is made from one side of the ferrite loop to the other, e.g. by metal supports, wiring or pipework. A loop will prevent the unit from operating correctly.

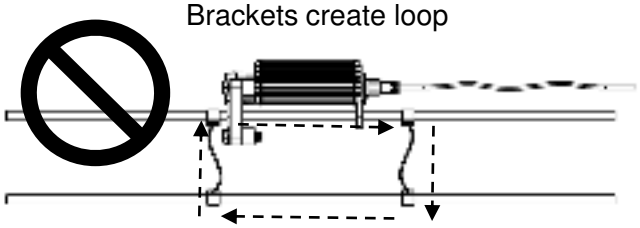
This problem can be solved by moving the unit outside the electrical loop. If this is not possible, the metal support brackets can be electrically insulated. Installing the unit on a section of plastic pipe eliminates the possibility of an electrical loop.



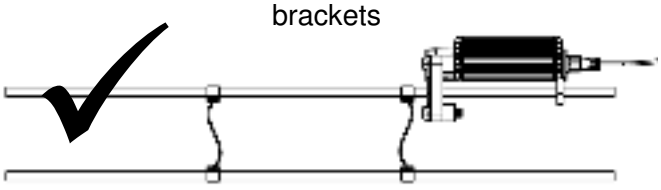
Brackets create loop



Electrically insulate brackets



Wiring creates loop



Move unit out of loop

If you are unsure of any details of fitting or installation, please contact your local Hydropath representative for technical support.

Box Contents

Transducer Unit

Instructions

Model	Long ferrites	Short Ferrites	Plastic Hex Nuts	Plastic Thumb Screws	Plastic Thumb Nuts	Steel Bracket	Steel Bands	Pipe clamps	50mm bolts	Steel locking nuts
P45	**3**	**1**	**2**	**4**	**2**	**1**	**0**	**2**	**4**	**4**
P60	**4**	**0**	**2**	**4**	**2**	**1**	**2**	**0**	**0**	**0**
P100	**1**	**5**	**2**	**6**	**4**	**1**	**2**	**0**	**0**	**0**
P130	**6**	**0**	**2**	**6**	**4**	**1**	**2**	**0**	**0**	**0**
P150	**5**	**3**	**2**	**8**	**6**	**1**	**2**	**0**	**0**	**0**
P190	**8**	**0**	**2**	**8**	**6**	**1**	**2**	**0**	**0**	**0**

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To register the product please visit hydropath.com/product-registration/
Products must be registered to activate any warrantee or guarantee. All goods are sold subject to our standard terms and conditions of sales, copies of which are available upon request.

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