

# HYDREKA

CHAÎNES  
DE MESURE  
POUR  
LE CYCLE  
DE L'EAU



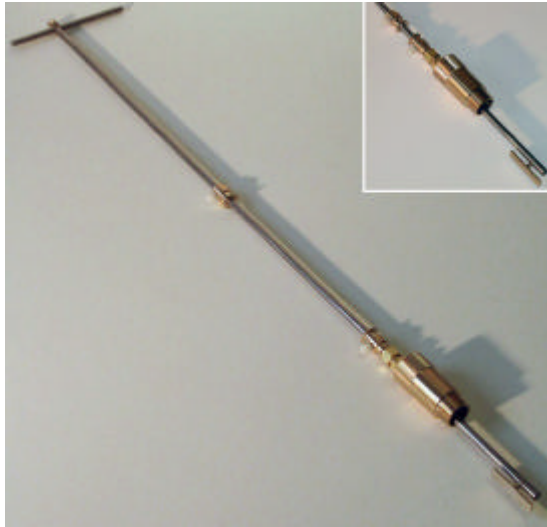
## HydrINS Electromagnetic insertion flowmeter with integrated transmitter



**HYDREKA**

34, route de St Romain – 69 450 SAINT CYR AU MONT D'OR - France  
Tél : 04 72 53 11 53 – Fax : 04 78 83 44 37 – E-mail : [sales@hydreka.fr](mailto:sales@hydreka.fr)  
[www.hydreka.fr](http://www.hydreka.fr)

**The hydreka's EM Insertion Pipe Flowmeter uses advanced processing techniques with on board micro-controller which enables a wide variety of sampling regimes to be set, including signal quality, to suit a wide variety of applications.**



**Measuring gauge**



**HydriNs on a 1000 mm pipe**

## ***Key Features***

- Ease of installation, with hot-tap capability
- Same unit on a wide range of pipe sizes
- Choice of stem lengths
- Full pressure sealed stem and sensor design to ensure no fluid leakage to outside even if sensor is damaged in situ
- Submersible transmitter
- No moving components

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- Internal battery and external DC power
  - Sequential, independent internal battery usage allows wide time window for cell replacement
  - Internal batteries provide over 2½ years life [dependent on sampling regime]
  - Electronics provide wide choice of sampling, averaging, smoothing and data output scenarios, with all data in engineering units
  - Fast sampling available for fast flow variability investigations
  - Burst sampling enables flow quality [noise] measurement
  - All calibration, serial number, pipe and site data held within unit
  - User selected serial data and two pulse outputs
  - Can operate as stand alone totaliser flow meter
  - Internal totaliser count for increased security
  - Ease of use with external loggers or SCADA systems
- Worldwide use with user filter setting for 50 or 60 Hz local mains

## Measurements

<b>Flow</b>	Measuring principle	Faraday principle with alternating DC
	Range	Bi-directional up to 5 m/sec, limited only by physical stability of the sensor stem
	Accuracy	Point velocity: Averaged/smoothed flow: $\pm 2\text{mm/sec}$ or $\pm 2\%$ flow whichever is the greater Mean velocity and volumetric flow: refer ISO 7145-1982
<b>Flow condition</b>		Volumetric flow computation assumes fully developed profile [ref. ISO 7145-1982]
<b>Fluids</b>	Types	Electrically conductive $> 50\mu\text{S/cm}$
	Sediment/air levels	Entrapped air within the fluid at the point of measurement will increase the noise level of data
<b>Pipe</b>	Inside diameter range	100 to 8000 mm
	Material	No restrictions

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## Operational

<b>Units</b>	Selectable: mm, metres, feet; litres, Megalitres, m <sup>3</sup> , ft <sup>3</sup> , ImpGal, USGal, MegaImpGal, MegaUSGal; seconds, minutes, hours, days	
<b>Power supply</b>	Internal batteries	2 off lithium D cells. Used sequentially
	Battery life [nominal]	In excess of 2½ years with unit measuring spot flow every 15 seconds
	External DC	9-28VDC. Internal isolation provided. Connection over-rides internal cells.
<b>Digital connection</b>	RS232 [8 data, 1 stop bit, none]. Baud rate settable 4800, 9600, 19200, 38400. 4800 baud enables data transmission over at least 100 metres cable	
<b>Sensor details</b>	Internal calibration, serial numbers, calibration dates, history file	
<b>Internal logging</b>	Negative volume / Positive volume / Cumul	
<b>Settings</b>	Units, sample rate, burst length, cycle time, smoothing type and time constant, insertion factor, profile factor, mains filter frequency, pipe diameter, site information, user gain and offset and deadband, pulse multiple, totaliser reset	
<b>Outputs</b>	Digital data	RS 232 port for SCADA interfacing and set up. Selectable from: Point velocity, mean pipe velocity, volumetric flow rate, flow noise, totaliser
	Totaliser [pulse]	2 x Opto-isolated open collector outputs. Software set to be either 1 for positive and 1 for negative flow, or set to 1 for flow and 1 for direction. 50 Hz maximum frequency [50% duty]
<b>External Connections</b>	10 way mil-spec connector	
<b>Software</b>	Interfaced with WINFLUID (version 1.71)	

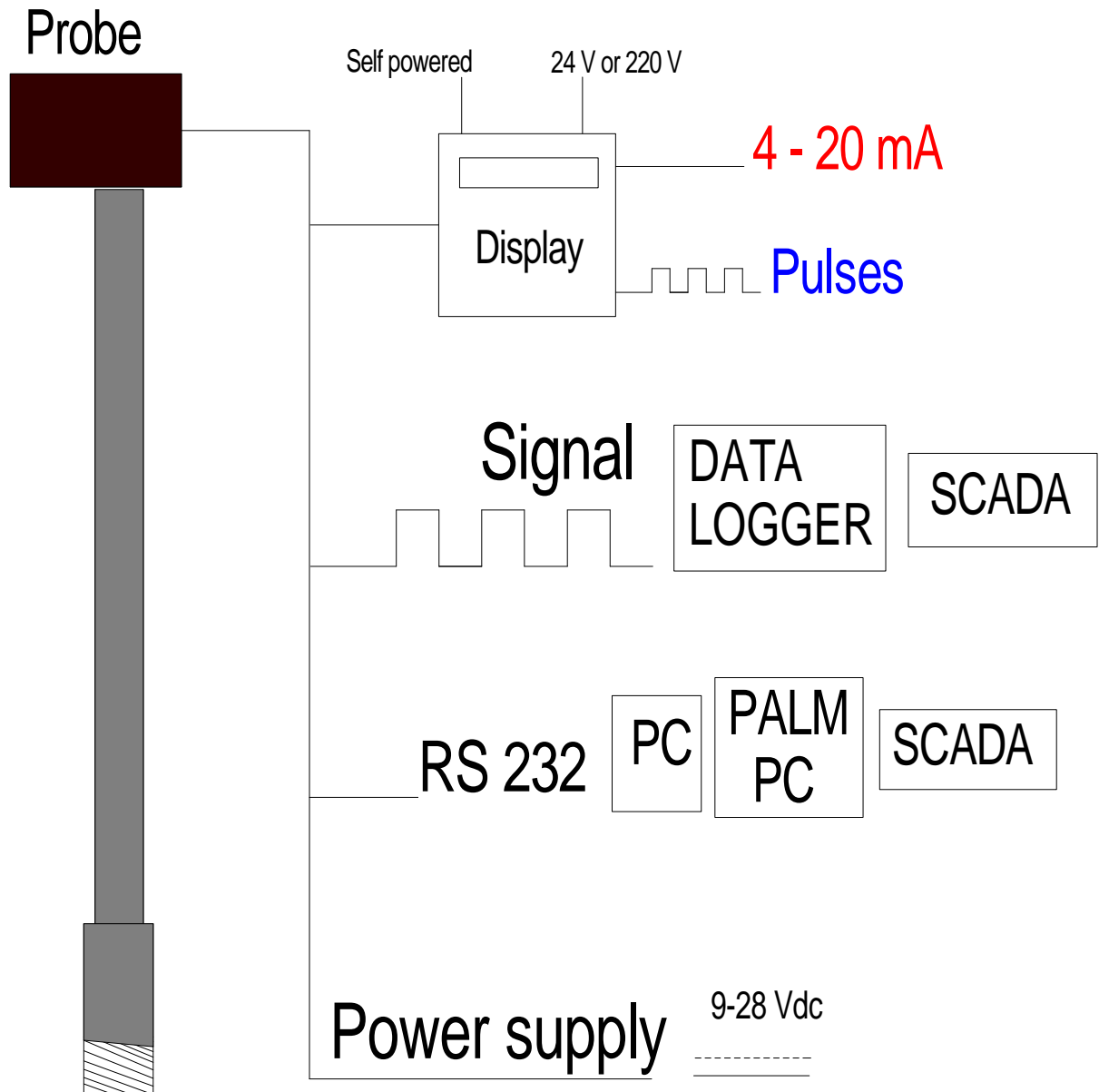
## Physical

<b>Operating temperature range</b>	Electronics: -20 to +60 °C, Fluid: non freezing to +60 °C
<b>Storage temperature range</b>	-20 to +70 °C
<b>Waterproofing Pressure rating</b>	IP68/NEMA6 for submersion to 10m indefinitely [with mating connector fitted]. Internal pipeline pressure to 20 bar or 50 bar (optional)
<b>Mounting</b>	Requires valve with 25mm [1 in] minimum clearance. Connection: 1" BSP or 1½" BSP
<b>Pressure tapping</b>	? "BSP
<b>Insertion length</b>	Dependent of stem length ordered: 300, 500, 700 and 1000 mm
<b>Safety</b>	Probe anti bounce chain
<b>Dimensions</b>	Sensor diameter: 22mm. stem diameter: 19mm. Electronics 106 mm diameter x 80 mm long
<b>Weight</b>	<3.5 kg
<b>Materials</b>	Wetted parts: 316 Stainless steel, Nitrile rubber, polyurethane moulding & silver or PVC, External parts: stainless steel, nitrile rubber, anodised aluminium
<b>Guarantee</b>	12 months
<b>EMC certification</b>	In conformity with Council Directive 89/336EEC (EMC directive) EN61000-6-4 EN61000-6-2
<b>Calibration certificat</b>	Calibrated with electromagnetic flowmeters gauge (100 and 200 mm) according to the COFRAC/NAMAS procedures

As part of our policy of continual product improvement, we reserve the right to alter, without notice, all specifications, designs, prices and conditions of supply of all equipment.

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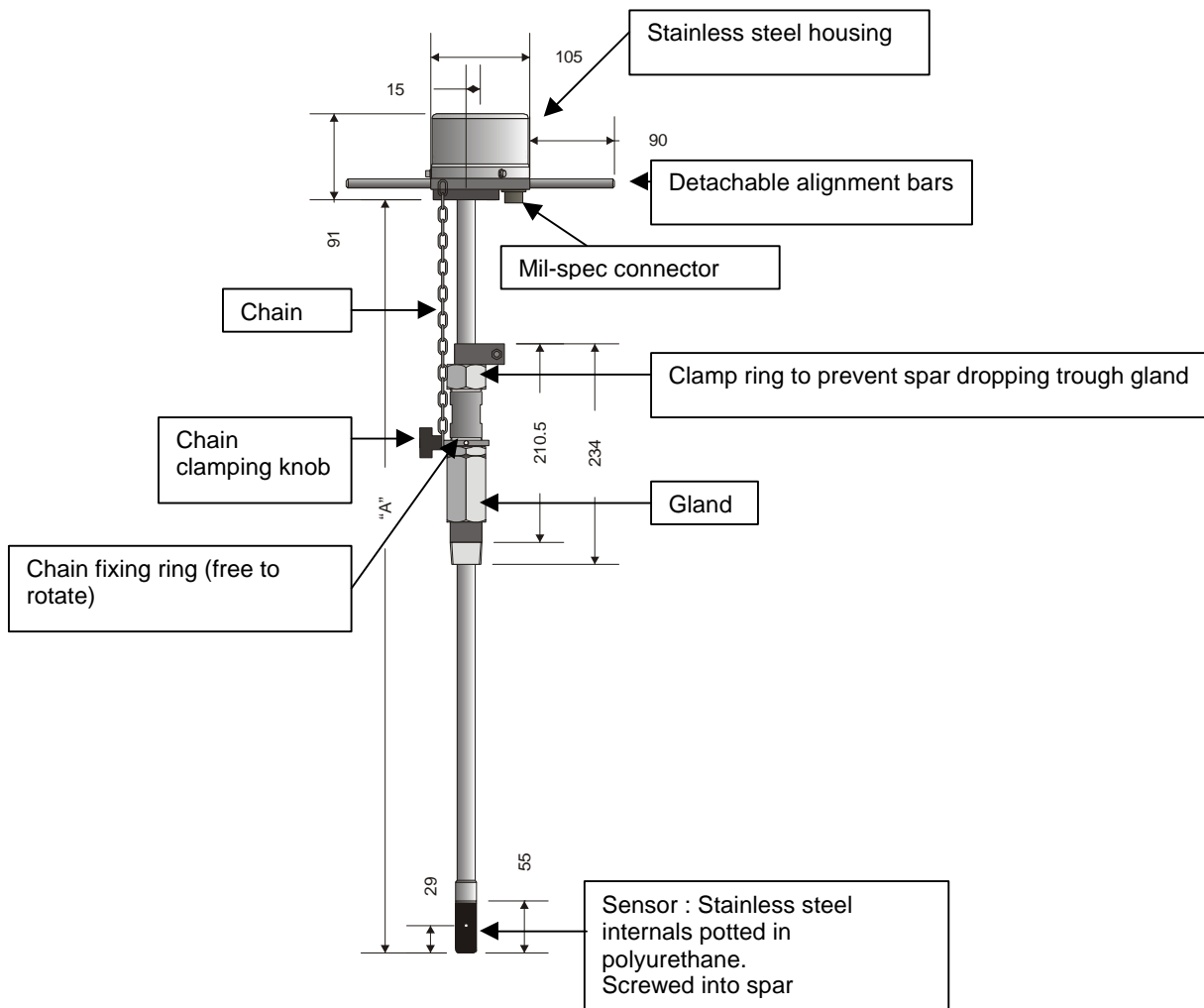
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## Multipurpose Input and output

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**production**

HydrINS type	Dimension "A"	Overall length [A +91]	Usable stem length	Usable in pipe diameter
300	689	780	<300	<600
500	869	960	<500	<1000
700	1109	1200	<700	<1400
1000	1409	1500	<1000	<2000

**USABLE STEM LENGTH :** It is the estimated remaining insertable length of stem usable once we deduct from the stem length the ball valve height + the pressure chamber , the electrodes being located in the middle of the pipe.

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## CERTIFICAT DE CONTRÔLE N° HYD-050303-3

Matériel contrôlé le : 03/03/2005

Client : hydreka

Référence sonde : Hydrins

Référence transmetteur : Hydrins

Désignation sonde : Hydrins

Désignation transmetteur : Hydrins

N° de série sonde : 22480

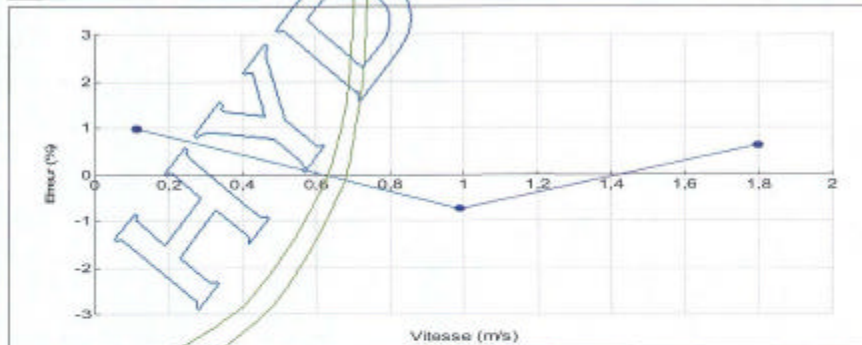
N° de série transmetteur : 15406

Erreur MAX limite :  $\pm 3\%$

Diamètre de la conduite : 215 mm

L'étalonnage de l'instrument de mesure a été réalisé sur le banc de contrôle du laboratoire HYDREKA dans une canalisation en charge de 215 mm de diamètre.  
Les débitmètres de référence de 0,2% de précision ont été produits et contrôlés suivant des procédures agréées COFRAC.  
CONTRÔLE DE REDONDANCE D'ORDRE 2  
3 Manchettes électromagnétiques de référence en série :  
N° série : V/86912/1/1, V/86912/2/1, V/86912/1/2

Vitesse référence (m/s)	Vitesse mesurée (m/s)	Débit référence (m <sup>3</sup> /h)	Débit mesuré (m <sup>3</sup> /h)	Erreur relative (%)
0,116	0,117	15,13	15,27	0,96
0,991	0,984	129,57	128,61	-0,75
1,798	1,809	234,89	236,41	0,61



Remarques : Ras

Coefficients : 1,030 / 0

**CONFORME**

Certificat valide jusqu'au : 03/03/2006

Réalisé par : gse

Contrôlé par :

### Example of a calibration certificate

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