Ministry of Municipalities Affairs and Agriculture

وزارة شؤون البلديات والزراعة

Local Agriculture Production Directorate

إدارة الإنتاج الزراعي المحلي

مواصفات عداد تدفق المياه الكهرومغناطيسي بنظام (GPRS)

GPRS Electromagnetic Water Flow Meter Specification

Technical details specification – Full Bore Electromagnetic Flow Transmitter:

2.7 General

SL.NO	DESCRIPTION	PARTICULARS
1.1	Line size	50 to 150mm
1.2	Item	Full bore Electromagnetic Flow Meter
1.3	Service	Common header of pump Discharge
1.4	fluid	Raw water from bore well
1.5	Area classification	Non Hazardous

2.8 Flow Sensor

SL.NO	DESCRIPTION	PARTICULARS
2.1	Line size	50 to 150mm
2.2	Type	DC Pulsed
2.3	Electrode /Sensor MOC	SS316
2.4	Flow Tube MOC	SS304
2.5	Coil Housing MOC	Carbon steel
2.6	Grounding Ring MOC	SS304
2.7	Liner MOC	Neoprene Polyurethane
2.8	Process connection	Flanged
2.9	Flange MOC	Carbon steel
2.10	Housing protection	IP68
2.11	Pressure Rating	16bar
2.12	Temperature	50 Degree Ambient
2.13	Size (mm	To suit mains flow parameters, with pipe reducer/expansion provided as necessary.

2.9 Flow Indicator and Transmitter

SL.NO	DESCRIPTION	PARTICULARS
2.9.1	Type	Microprocessor based, Remote mounted
2.9.2	Power supply	Battery operated
2.9.3	Accuracy	+ or – 0.5% of measured value
2.9.4	Repeatability	+ or – 0.1%
2.9.5	Transmitter protection	IP68
2.9.6	Transmitter MOC	Di cast aluminum with PU finish /polycarbonate
2.9.7	Output	Suitable pulse output for GPRS communication
2.9.8	Communication	Modbus RS 485
2.9.9	Display	2 line Backlit LCD, programmable
2.9.10	Maximum digit display	8 digit

2.9.11	Indication on display	• Actual flow rate/instantaneous flow rate • Cumulative forward flow • Cumulative reverse flow • Cumulative flow/sum/totalizers • Alarm • Five digit normal LCD for flow rate in m3/hr • Eight digit LCD for totalized flow in ML. • Display with 8digit for main information • Index, menu and status symbols for dedicated information • key for togging through the information and reset customer totalizers and all-up function
2.9.12	Zero and span adjustment	Factory set password protection of all parameters and hardware protection of calibration and revenue parameters
2.9.13	Facility for on line diagnosis	• Coil test to drive the magnetic field • Signal input circuit • Date calculation, handling and storing
2.9.14	Facility for on line diagnosis-Features	• Electrode impedance to check actual media contact • Flow simulation to check pulse and communication signal chain for correct scaling • Number of sensor measurements (excitations) • Low impedance alarm for change in media • Flow alarm when defined high flow exceeds • Verification mode for fast measure performance check • Statistic flow and consumption data
2.9.15	Cable Gland & PVC hood	Required of Plastic M16
2.9.16	Cable length	• Minimum 10meter and according to the site conditions
2.9.17	Data protection:	• All data shall be stored in an EEPROM. • Provion for Minimum 30 days of data shall be stored in EEPROM. Password protection of all parameters and hardware protection of calibration and revenue parameters.
2.9.18	Flow direction	• Bi-directional measurements
2.9.19	Display warning	• Empty pipe detection
2.9.20	Power supply	• Battery power (minimum 10years)

2.10 Flow Indicator and Totalizer (Panel Mounted)

SL.NO	DESCRIPTION	PARTICULARS
2.10.1	Type	Electronic. Microprocessor based, single unit for flow indicator and integrator
2.10.2	Display	Digital, LED display
2.10.3	Digit height	7mm or higher
2.10.4	No. of Digits A) Flow indicator b) Flow integrator	 4 Digits 8 Digits
2.10.5	Zero and span adjustment	Required
2.10.6	Manual reset facility for flow	Required (shall be protected)
2.10.7	Engineering units for flow rate indicator	M3/hr
2.10.8	Battery backup for flow integrator	Required
2.10.9	Retransmitted output	Required

2.11 GPRS System

SL.NO	DESCRIPTION	PARTICULARS
2.11.1	Supported Bands	Quad Band 850/900/1800/1900MHz
2.11.2	Environmental	-20d Deg to +60 Deg centigrade.
2.11.3	SIM card	3.0V/STK3.1
2.11.4	Data transmission	3G network, SIM based
2.11.5	Date collection	Remote server at central control at ministry location.
2.11.6	TCP Data format	• ID number for length of sent data • Serial number of the flow meter • Total+ Actual Flow (0= positive direction, 1=negative direction. • Meter main battery health • Error code