

# Isco 4501 Pump Station Monitor

## *Lift Station flow measurement and performance monitoring.*

The 4501 monitors lift station operation as the wet well fills and is emptied. The 4501 uses patented\* algorithms to calculate flow into and out of the pump station, as well as the pumping rate of each pump. Pump activity data is stored in the 4501 for transfer to a PC with Isco Pumplink™ Software.

By using drawdown calculations rather than manufacturers' pump curves, the 4501 Pump Station Monitor measures influent flow and pump capacity within 1% at most pump stations.

## *Applications*

- ◆ CMOM, I&I, and other sewer flow monitoring
- ◆ Billing
- ◆ Pump station performance studies
- ◆ Proactive maintenance programs
- ◆ Record alarms such as high levels and intrusion
- ◆ Pace a sampler to collect a flow-proportioned sample
- ◆ activate a dialer when an alarm condition occurs

## *Features*

- ◆ Easy to install. Simply connect the inputs to anything that turns on or off when the pumps are activated, such as elapsed timers, indicator lights, or pump motor starters. The optional current clamps avoid termination.
- ◆ No calibration; no level sensors to install.
- ◆ Compact design and ease of installation make the 4501 ideal for portable use.
- ◆ Eight analog inputs for logging other parameters, such as flow or level.



## *Detect pump problems before they cause sewer backups*

Intermittent electrical problems develop at more than 30% of pump stations before the situation is detected by an operator. The 4501 Monitor exposes abnormal pump activity so that you can perform proactive maintenance to prevent serious, expensive problems – or failures that could result in sewer backups. Common problems that can be detected with the 4501 and Pumplink Software include:

- ◆ alternator failures
- ◆ chattering relays
- ◆ variations in pumping rate
- ◆ jammed/worn impellers
- ◆ changes in level switches
- ◆ stuck check valves
- ◆ power failures

## *Pumplink Software*

Pumplink Software sets up the data logging parameters and makes it easy to analyze and store information on pump station flows and pump performance.

Retrieve data via direct serial connection or modem, then use Isco Pumplink as a desktop application to analyze and manage your data, and generate informative graphs and reports for an entire network of lift stations.

•(US Patent No. 5,597,960)

## Specifications

Isco 4501 Pump Station Monitor	
Size (HxWxD):	3.75 x 3.75 x 7.1 in. (9.5 x 9.5 x 18.1 cm)
Weight:	1.4 lbs. (0.63 kg)
Material:	Polyphenylene oxide
Enclosure:	Standard ¼ DIN; Portable protective enclosure with carrying handle is optional
Power:	12V DC, 250 mA
Storage Temperature:	-40 to 140°F (-40 to 60°C)
Display:	Backlit liquid crystal, 2 lines, 32 characters
Keypad:	membrane, 4 position
<b>Data storage and communication</b>	
Capacity:	29,000 events maximum
Storage Mode:	Rollover
Program Memory:	Battery backed RAM; can be updated via interrogator port without opening the enclosure
Data Retrieval:	Direct RS-232 connection, Optional internal telephone modem
Data Analysis:	Isco Pumplink Software (compatible with Windows 95, 98, 2000, NT, and XP)
Flow Measurement Accuracy:	±1% totalized flow, ±8% cycle-to-cycle typical (Does not include errors in wetwell measurements. With Pumplink software, ±5% cycle-to-cycle is typical)
Relay Outputs:	2 normally open, rated 1A at 30V DC or 0.3 A at 125V AC, one proportional to outflow, one activated based on minimum and maximum analog inputs and abnormal pump capacity
Pump Inputs:	3, rated 12 to 120V AC or DC
Connection:	Anything that turns on or off when the pumps are activated
Analog Outputs:	2 proportional to inflow and outflow rates, 4 to 20 mA into a maximum of 400 ohms
Digital Inputs:	4, rated 12 to 120V AC or DC Operating Temperature 0 to 140°F -18 to 60°C
Analog Inputs:	8 single-ended mixed with (optional) 4 differential, individually selectable. 4 to 20 mA or 0 to 5 V

## Ordering Information

Description	Part Number
4501 Pump Station Monitor with Pumplink software.	68-4500-014
4501 Pump Station Monitor only. (Pumplink not included)	68-4500-019
4501 with internal telephone modem. Includes Pumplink software	68-4500-017
4501 with internal telephone modem. (Pumplink not included)	68-4500-013
Portable protective enclosure with carrying handle. For short-term installations where 4501 is transferred between lift stations for pump performance checks.	60-5314-375
Pumplink Software.	60-4504-003

Note: Other options and configurations are available. Contact Isco or your Isco representative for a complete listing.



*The 4501, with optional portable enclosure and current clamps, is ideal for temporary installations in multi-station pump performance verification programs.*



Water is life. Protect it.

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