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DLS-400 Data Logger System 400

■ *Operational Description*

The DLS-400 combines years of monitoring experience with advanced wireless communications in one complete system. The system is designed for long-term monitoring and transmission of data from sensors supplying 4-20 mA or 0-2.5V signals. The sealed design significantly reduces site visits.

The NEMA 4/IP65 housing has a hinged sealing cover for protection.

The data monitoring function allows multiple readings to be stored and the sample rate is adjustable from once every second to once every day. Additionally, an accumulated total is recorded and displayed. Data can be downloaded through a wide variety of wired and wireless communication options and then graphed or exported via a CSV file.

■ *Features*

- Off-the-shelf solution
- Monitors tank levels, flow rates, environmental parameters, etc.
- On-site flash memory.
- Accepts custom input/output cards (IOC) allowing future options
- Supports two-way on demand readings
- Can receive and transmit MODBUS commands
- 20 Channel Data Monitor

■ *Applications*

- Irrigation monitoring
- Flow monitoring
- Sanitary sewer flow study
- Tank monitoring system
- Chemical dispensing station
- Rotating machine monitoring

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■ Technical Specifications

Analog Inputs		
• High resolution channels **	Eight 24-bit single ended analogs or 4 differentials or any combination of both (1 differential = 2 single ended)	
• Standard resolution channels	Five 10-bit single ended analog	
• Maximum Input Voltage	0 V to +2.5 V (0-20mA*)	
• Analog Voltage Resolution	1 μ V	
• A/D Bits	24	
• Analog Input Impedance	1 MOhm	
• Scan Interval	1/3 Hz	
• Excitation Channels	2	
• Excitation Voltage 1	+2500 mV	
• Excitation Voltage 2	+5000 mV	
Digital Inputs / Outputs		
• Counter or Status or Event Start/Stop or Pulse Channels	4	
• Input Impedance	1 megohm	
Frequency Inputs		
• Channels	3	
• Input Impedance	1 megohm	
Calculated Inputs		
• Inputs can have additional calculations applied to provide user selectable results.		
Alarms (High Precision)		
• High and low (toggled)		
• Tracking window		
• On-site & email with individual set points		
Memory		
• Flash Memory	4 MB	
• If Recording time, 1 precision and 1 standard input, the memory would be filled after 352,256 readings or as for the days shown below:		
Sample Rate (Minutes)	Days	Years
5	1222	3.4
10	2446	6.8
15	3668	10.1
30	7336	20.2

Power Requirements		
• Quiescent Current	70 μ Amp	
• Processing Current	13 mA	
Environmental		
• Standard	-40 to 140°F (-40 to 60°C)	
• Extended	-67 to 176°F (-55 to 80°C)	
Physical		
• Enclosure	Extruded aluminum	
• Size (inches)	8 x 3 x 3.5	
• Size (cm)	20.32 x 7.62 x 8.89	
• Weight		
- DD-400 w/ Battery	0.778 kg (1.715 lbs)	
- DD-400 Alone	0.564 kg (1.243lbs)	
Communications Options		
• Direct cable RS-232 (Included)		
• Direct cable RS-485		
• Ethernet		
• Cellular modem (CDMA1X)		
• Cellular modem (GSM/GPRS)		
• Spread spectrum radio (1 - 1000mW)		
• WiFi (802.11B)		
• Satellite		
Software		
• Comes with Data Dolphin Standard Windows configuration, display, communication, graphing software		
Computer Requirements		
• Computer	486 or higher	
• Operating System	Microsoft Windows 98, NT, 2000, XP	
• RAM	16MB or higher	
• Monitor	VGA; SVGA recommended	
• Hard Disk Space	25MB Install / 35MB Rec.	
Options		
• See options page		
Approvals		
• Class 1 Div 2 Groups C, D, T3		
• CSA Std C22.2 No 213, 14, E79-15-95		

Specifications are subject to change without notice.

■ Product Picture (DD-400-SAT Satellite Communications shown)



■ Ordering Information

Model	Description
DLS-400-SAT	DLS-400 with Satellite communications
DLS-400-GSM	DLS-400 with GSM/GPRS cell phone communications
DLS-400-CDMA1X	DLS-400 with CDMA1X cell phone communications
DLS-400-RS232	DLS-400 with RS-232 communications
DLS-400-ETH	DLS-400 with Ethernet communications
DLS-400-SS	DLS-400 with Spread Spectrum Radio communications
DLS-400-WiFi	DLS-400 with WiFi-B communications

Please Note: Wireless units come with antenna and cables. Cellular unit comes standard with a 5db whip antenna, but can be replaced with the following antenna options: rubber duck, low profile, yagi, manhole cover, in-road. See communication options sheet for details.

** Can accept a cold junction kit for direct connection of thermocouples.