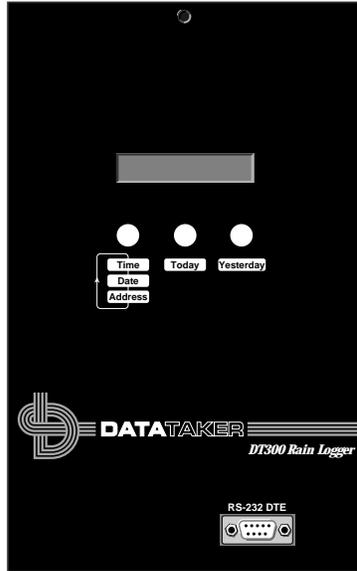# Datataker 300
RAIN LOGGER

The Datataker DT300 Rain Logger monitors rainfall from a single tipping-bucket rain gauge and logs the readings to battery-backed internal memory.

Local Control

Using the three buttons on the front panel…
- yesterday's total rainfall and today's (running) total rainfall can be read from the display;
- a complete log of rainfall can be sent out via the RS-232 port;
- operational parameters of the logger can be viewed and set.

Remote Control

A computer running communications software — such as Data Electronics' "DeTerminal" — can be linked to the logger's RS-232 port by cable (short distance), modems (long distance), or satellite (very long distance). Using this method…
- yesterday's total rainfall and today's (running) total rainfall data can be transferred to the computer;
- a complete log of recorded rainfall can be transferred to the computer;
- the rainfall log can be cleared remotely;
- all operational parameters of the logger can be viewed and set remotely.

Logging Capacity

The DT300 can store a large amount of rainfall information. For example:
- **Tropical Location**
  Two hours of continuous rain every day — 1,143 days (over three years) of rainfall information can be stored in the DT300's internal memory.
- **Arid Location**
  One hour of light rain every week — 14,048 days (over 38 years) of rainfall information can be stored in the DT300's internal memory.
- **Very Wet Location**
  Continuous drizzle (24 hours per day) — 111 days (almost four months) of rainfall information can be stored in the DT300's internal memory.

Battery Conservation

To conserve the internal battery, the DT300 "goes to sleep" if no front panel button has been pressed for 10 seconds, or if there has been no RS-232 serial port activity for 10 seconds. When the logger goes to sleep, the front panel display is turned off and most of the internal electronics shuts down — but rainfall is still totalled and logged.

Specifications

Display
Format
8-digit 7-segment red LED with 3 colons and 1 decimal point
Size
7.6mm (high) x 61mm (wide)

Keyboard
Keys
3 momentary-action push buttons
Functions
Set date
Set time
Set Baud rate
View rain since 8:00am
View rain in previous 24 hours
Set station number
Set bucket size
Set sample period
Set data unload
Protection
ESD protected (voltage and rise-time limited)

Sensor Input
Type
Switch closure (voltage-free)
Debounce
20ms R-C type
Timing
15Hz rate maximum
Protection
ESD protected (voltage and rise-time limited)

Data

Storage
32KBytes: approximately 30,000 points (approximately 15 weeks continuous logging)

Log Rate
In the presence of rain   every 5 minutes
For zero rainfall   no data stored
Log period options
1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60, 120, 144, 180, 240, 360, 720 and 1440 minutes.
Resolution
0.1mm to 25.5 mm (in 0.1mm steps)

RS-232 Serial Interface

Data Rate
1200, 2400, 4800 and 9600 Baud asynchronous full duplex

Framing
8 data, no parity, 1 stop and 1 start bit

Physical
9-pin DTE style (suitable for connection to IBM[®] PC or compatible computer)

Handshake
Null modem connection
First character of communications session is used to awaken logger

Functions Supported
Set date
Set time
Set station ID
Set sample period
Set bucket size
Get rain since 8:00am
Get rain in previous 24 hours
Get battery replacement dates
Unload memory
Clear memory
Display current configuration

Power

6V lead-acid battery or 7.5V alkaline battery

Consumption
6Ah/year (typical)
13Ah/year (maximum)

Current
Standby   500µA (typical)
                1.5mA (maximum)
Operational   20mA (typical, no display)
                65mA (typical, with display)
Absolute max.   100mA

Backup
Memory and clock backup via 3.6V 800mAh lithium battery

Protection
Reverse polarity protection

Battery Change-over
Main battery   every 12 months
Lithium backup battery every 5 years

Date and Time

Date
dd:mm:yy format (including leap year adjustment)

Time
hh:mm format (1second resolution)

Accuracy
0 to 53°C   at least 1.5 minutes per month
−20 to 55°C   at least 4 minutes per month

Physical

Housing
Unit is designed for mounting in a weatherproof case or cabinet (mounting plates are supplied)

Size
150mm x 180mm x 25mm

Mounting
4 x 3mm holes (130mm x 120mm centres)

Protection
Epoxy-sealed to withstand moisture

Terminals
4 x screw saddle-clamp terminals (2 for main battery and 2 for sensor)
2 x screw saddle-clamp terminals (for lithium backup battery)

Environmental
Temperature: −20 to +55°C
Humidity: 80% non-condensing