



DT25 Series dataTaker Remote Telemetry Logger

Two Models

- The DT25-A has analog, counter and digital input channels.
- The DT25-D has counter and digital input channels only.

The dataTaker DT25 Series Remote Telemetry Logger monitors counter, analog and digital inputs for alarm conditions, and transmits alarm states to various destinations including a central host computer, alphanumeric pager service, or to mobile telephones.

Analog input data is scaled to engineering units.

Counter inputs, run progressive demand prediction analysis, calculate progressive minimum, maximum, and total, and log data into non-volatile memory for later recovery.

The DT25 has robust telemetry functionality and modem supervision, and has two levels of password security.

Applications

The DT25 is suited for applications such as

- demand monitoring — alerts *in advance* if hourly or daily consumption limits for gas, electricity, water, etc. will be exceeded
- remote metering, billing, and re-supply of bulk consumables
- early warning of dam or river flood levels
- flow totalizing for gases and liquids
- water treatment and sewage plant alarms
- process and production monitoring.

Features

- Communicates to central computers via the Public Switched Telephone network (PSTN), the Global System for Mobile communications (GSM) network, radio, short-haul modem, and satellite.
- Alarms can be transmitted to a central host computer, to pagers via a paging service, or to GSM digital mobile phones using Short Message Service (SMS).

- Channel data is logged at user-definable intervals, up to 10,000 readings.
- Alarms are logged in circular memory, up to 30,000 alarm message characters.
- Real time clock for system timing.

Operating Modes

- Ready Mode: default operating mode. DT25 monitors channels, logs data, receives callins, initiates alarm callouts, and communicates with a local computer connected to the computer port.
- Local Mode: a menu-driven interface for supervising DT25 via local computer port.
- Remote Mode: menu-driven interface for supervising DT25 via modem port.
- Command Mode: command-based interface for supervising DT25 by host computer systems and expert users.

Inputs

- 3 counter channels accept pulse inputs or contact closures. Demand analysis raises alarms if demand levels will be exceeded based on current usage trends. Counters store a periodic minimum, maximum, and total.
- 4 digital channels accept pulse inputs or contact closures. All digital channels have a high to low alarm with user-definable alarm message.
- 2 analog channels (DT25-A), each with a high and low range alarm and user-definable alarm messages and delay.

Data Logging

- Channel and alarm data can be logged at definable intervals in non-volatile memory

Outputs

- External modem port transmits alarm callouts to a computer, pager service or mobile phone SMS. Receives callins from a host computer.

- computer port to supervise, monitor, and download logged data with a local computer.
- 2 digital outputs indicate any hourly and daily demand alarms on any counter (OR output).
- 1 modem control relay reboots (re-powers) the modem if it fails to respond.
- 1 local alarm relay output signifies unsuccessful callouts.

Alarms, Callouts and Callins

Alarms can be triggered by

- change of state of digital inputs
- high/low limits on analog channels
- demand alarms

When alarms occur the DT25 calls out to a host computer, pager service or mobile phone message service to transmit a pre-defined message. Three redial strategies:

- continuous until acknowledged
- slows after a specified number of calls
- stops after a specified number of calls

All alarms are logged in non-volatile memory as well as sent on callout.

The DT25 accepts callins in all modes, and allows polling for alarms and data.

Security and Integrity

- Two levels of password security.
- Communications sessions automatically terminated after user defined period of inactivity
- a local alarm triggers after a specified number of failed callout attempts
- Acknowledgement protocol ensures the host computer receives all messages
- Regular check that modem is functional, reboots modem if required
- A status LED locally indicates alarms, and a cancel button clears the alarm status LED

Safety and EMC

The DT25 meets or exceeds the following safety and electromagnetic emissions and susceptibility requirements:

Safety ISO BS EN 61010-1

EMC ISO BS EN 50081-1 and 50081-2,
IEC 801-2

SPECIFICATIONS

Inputs

3 counter channels

- TTL, contact closure, or mV pulse (>10mV), 100Hz maximum 65535, resets to 0 at log interval
- Maximum hour and maximum day alarms, 31 character message

4 digital channels

- TTL levels on contact closure
- high to low alarms, 31 character alarm message

2 analog channels (DT25-A only)

- single ended, relay multiplexed
- 4-20mA or 0-5V DC
- sensor power control
- ADC 12 bits, accuracy >1%
- zero and span functions
- high and low alarms, 31 character message, adjustable delay to alarm
- sample and logging period
Global, 1-59 seconds, 1-59 minutes, 1-23 hours

Outputs

Digital channels

2 open-collector outputs, 200mA used for counter demand alarms

Alarm relay

1 SP changeover, 24V @ 1A

Modem relay

2 N/C contacts, 24V @ 1A

Real-Time Clock

- 1 second resolution, 2 seconds/day, Y2k compliant
- used for data logging interval and date/time stamping of data

Communication Ports

Modem port: DE-9 male connector

Computer port: DE-9 female connector

Power

- 6-15V DC, primary power adapter included
- 75mA active mode, <10mA low power mode
- automatic low power mode when inactive
- low voltage alarm: nominal 12V DC
- operating temperature -10 to 60° C, humidity 95%

Dimensions

36mm H x 135mm W x 200mm L*

Add ≈ 75mm for connector clearance

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