

# dynamic logic



## D4140 Low Power Outstation

The D4140 is a small, robust, economic, battery-powered outstation providing a flexible data monitoring, local processing and logging package.

### Benefits

- ❑ Telemetry, logging and processing facilities in one unit.
- ❑ Powered by internal battery for remote sites. The long life of the battery reduces maintenance.
- ❑ Reliable, soundly engineered product.
- ❑ Compatible with Dynamic Logic Telview and Preview masterstations.
- ❑ Ease of operation through a choice of flexible configuration, programming and access procedures.
- ❑ IP67 environmental enclosure minimises need for special installation.
- ❑ Cost-effective, powerful outstation suitable for a wide range of applications.

### Product Description

The D4140 is one of a growing family of intelligent, programmable outstations designed by Dynamic Logic Ltd.

Designed to solve remote site monitoring problems where mains power is not available, the D4140 is capable of maintaining 24 hours a day coverage for at least 1 year under basic operating conditions.

By combining telemetry, processing and logging facilities in one unit the need for additional external equipment is minimised. Telemetry communications can either be by Public Switched Telephone Network (PSTN), SecureStream 300 Network (SS300), Private Wire or Radio using Dynamic Logic's high integrity protocol for data security.

Providing 8 digital, 4 analogue, 2 count inputs and 1 control output as standard, the D4140 is easily programmed through a remote or local Outstation Programming Terminal (OPT) and/or a compatible masterstation. The configuration and sequencing data is stored in a non-volatile memory.

# Features And Facilities

- Low power operation of at least one year, under basic operating conditions provided by internal battery supply.
- Programmable, automatic alarm dial-outs with automatic retries to masterstations.
- Up to five user programmable telephone numbers, dial-out rota and sensor "special index" telephone number.
- Basic configuration monitors, logs and processes:  
8 digital inputs, (fleeting) 4 isolated analogue inputs  
2 count inputs  
and 1 control output
- Facility for expansion card, providing a choice of: - 2 incremental shaft encoder inputs or 4 analogue plus 8 digital inputs and 2 digital outputs or 2 16-bit BCD inputs.
- Multiple analogue level alarm detection (LAD) and count rate alarm detection (RAD).
- Analogue averaging and analogue profile alarms, for use with appropriate masterstations and/or OPT.
- Integral 88K data logging facility, for storage of time and date stamped events and synchronised time logging.
- Outstation configuration, logged data and sequences stored in independent non-volatile memory.
- On site, connection facility for a dedicated Outstation Programming Terminal (OPT), providing straightforward local configuration and calibration; additionally provides local interrogation and display of current and historic data
- Initiation of local processing and manipulation of live data via uncomplicated user-written/defined sequences.
- Facility for remote connection of OPT, (and hence access to the facilities detailed above).
- Local LCD display giving an indication of outstation's current 1/0 status (rolling or static).
- Power strobed supply for local transducers/instruments.

## Applications

- Low battery level alarm dial-out.
- Customer configurable Engineer On-Site facility suppresses alarms during maintenance or communication media failure.
- Access to 50 digital and 25 analogue internal derived points

## Advanced Features

- Alternative power supply versions.
- Full sequence logging facility/control, providing flexible, intelligent and variable rate logging.
- Extended reporting of derived point status including alarms.
- The compact size, long battery life, ease of operation and maintenance of the D4140 makes it ideally suited to a wide range of applications in the utilities and industrial markets. These include the monitoring of:
  - Water Hydrology
    - Rain
    - River
    - Tidal
    - Flood Warning
  - Zonal distribution
  - Environmental
    - Temperature
    - Wind
    - Humidity
    - Pressure
  - Pollution
  - Water and Sewage Plants

## Specification

- Sensor Inputs/Outputs
  - Digital Inputs
    - Active on fleeting signal >20ms
    - 180Vdc front end protection
    - Choice of internal or external excitation voltage.
  - Analogue Inputs
    - 500V electrical isolation
    - 12-bit Analogue to Digital Converter (ADC).
    - 0.23% FSD accuracy over temperature range.
  - Count Inputs
    - Active on signals to 25Hz.
    - 180Vdc front end protection.
  - Digital Outputs
    - Normally open relay contact
    - controlled by either host, OPT or sequences (24Vac/dc max).
  - Shaft Encoder Inputs
    - Two signal and supply connections for incremental shaft encoders.
  - BCD Inputs
    - 16-bit with strobe selection.
    - Active on fleeting signal >20ms.
    - 180Vdc front end protection.
- Sequences Facility to run 16 independent sequences. Provides local data processing, calculation and control. Access and use of derived points.
- Data Logging 88K data storage capacity for timed, event or averaging logging. This provides an average 15,000 time stamped data samples.
- Local Communications
  - OPT
    - IBM-compatible PC/laptop with OPT software.
    - User-friendly, menu-driven package.
    - Provides local configuration, calibration sequence
    - Control and live/stored data display.
- Remote Communications
  - 300 baud FSK to CCITT V21
  - 1200 baud PSK to CCITT V22
  - To all relevant BS and BAPT standards.
  - Choice of tone or pulse dialling on PSTN.
  - Private wire
  - Radio
  - SS300
- Power Supply
  - 10.5V 10AH Lithium Battery Pack.
  - D4141 8-36V DC
  - D4145 220-240 or 110-120V AC mains
  - Both systems have Nicad battery back-up
- Environment
  - -10°C to +55°C
  - 1P67 Enclosure
  - 0-95% Relative Humidity @ 45°C (non-condensing)
- Installation: Polycarbonate enclosure 305mm High x 190mm Wide x 130mm deep.  
2 part screw terminals suitable for wall or panel mounting IP68 cable glands for I/O wiring.  
IP68 connector for local OPT.
- Warranty: 12 months from delivery.

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**The Company's policy is one of continued improvement and it reserves the right to change specifications at any time without notice.**