



OILMON

CABLE MONITORING

DART

Remote telemetry
Overview and specification



PURPOSE

The DART series of remote telemetry devices have been in service since 2009. Pressurised cable systems were originally designed to be monitored using mechanical gauges and alarm contacts. Drallim developed a pilot cable monitoring system used to remotely monitor cable characteristics and enable performance analysis.

Fluid filled cables have been installed for several decades and these assets are ageing. More recent solid filled technologies are now replacing them, but due to the practical difficulties involved fluid filled cables will be in service for some time. Ancillary services such as pilot communications cables are more vulnerable, presenting a challenge for pilot cable-based monitoring.

The DART range has been developed to enable cable and tank characteristics and to upload readings and alarms over wireless communications networks, where gauge cabling is not available. It is also lends itself to smaller scale systems with a wide variety of system database and alarm annunciation methods.



REDUCED COST OVERTIME

Based on typical lifetime of a non-rechargeable battery pack the additional cost of the rechargeable battery pack can be recouped in 3-4 years



COMMERCIAL

Eliminates the need for multiple order processing for replacement batteries during the lifetime of the asset.



CONVENIENCE

Spare batteries can be recharged in advance and changed on site at times convenient to the local Engineer, without the lead time of ordering and manufacturing a new battery pack and therefore minimising downtime of the system.



ENVIRONMENTAL

No further need to dispose of non-rechargeable batteries as all rechargeable batteries have a lifetime in excess of 2000 charge cycles.



PRESSURE, TEMPERATURE, LOAD

FEATURE SET

- Rechargeable battery or local mains supply with battery backup
- Up to 12 measurement points per device
- Designed for harsh environment, ingress protection to IP68, 5m.
- -20 to 55 °C operating range
- High measurement accuracy and stability
- Pressure, temperature, current, dew point, humidity parameters
- Customisable measurement ranges
- Local or remote set up
- Autonomous measurement polling at intervals from 5 minutes
- Local Data logging in battery backup power save mode
- Battery supply up to 3 years, operational
- Mobile friendly server application option
- UKCA, CE mark and NGTS certification

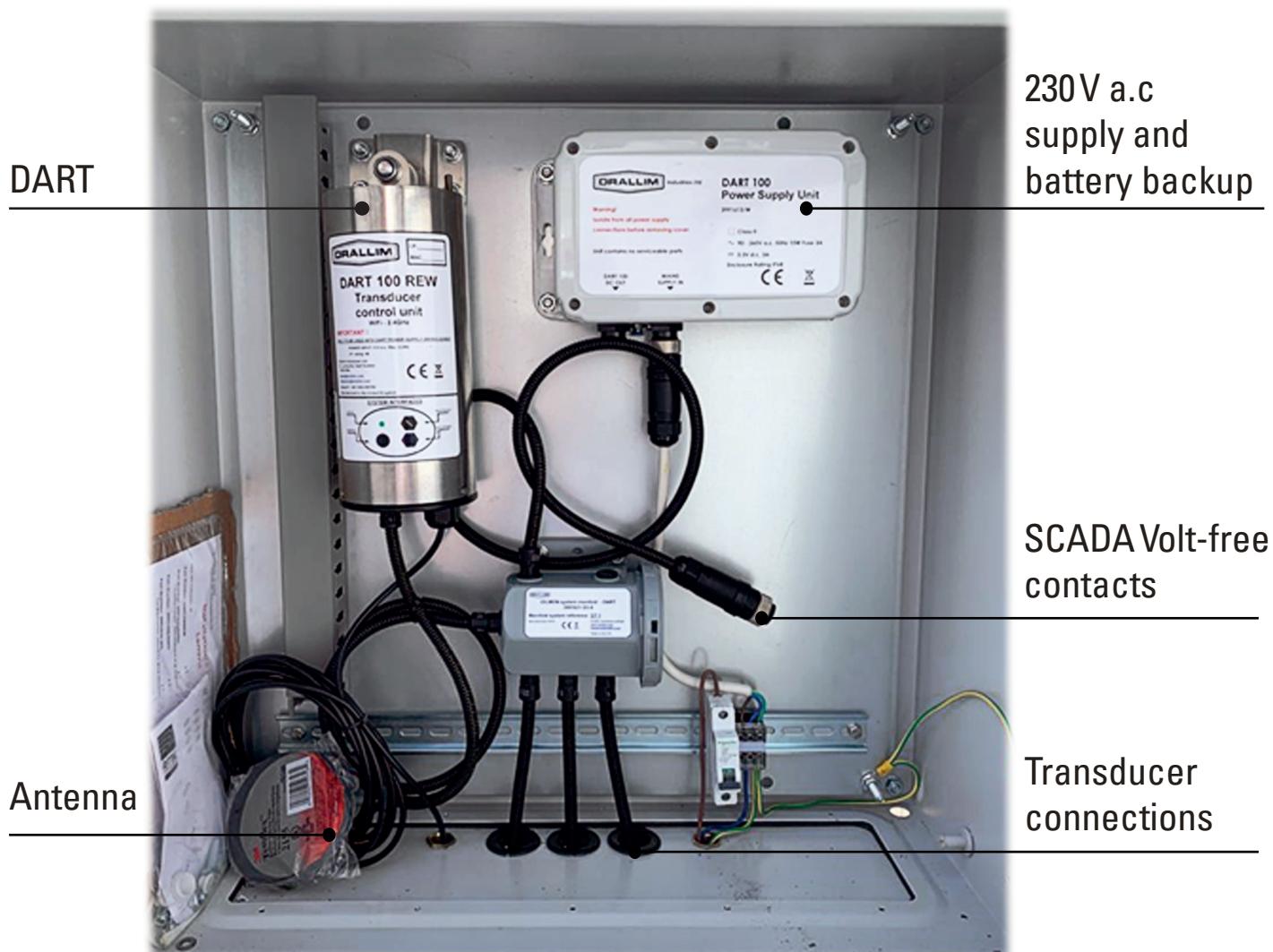
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Section D-E London / Ealing - Laleham 1	JB 31/32 JB 37/38	
RED PHASE	38.51 psi 14:04:36	➤
YELLOW PHASE	38.44 psi 20:06:15	➤
BLUE PHASE	38.33 psi 20:06:18	➤
RED PHASE	42.15 psi 20:06:20	➤
YELLOW PHASE	42.09 psi 20:06:22	➤
BLUE PHASE	41.86 psi 20:06:24	➤



Performance reports on Phone / Computer

INSTALLATION AND MAINTENANCE

The installation example shown below uses a DART unit in WiFi to server communications mode with three measurement point transducer connections.



Maintenance free with continuous battery status monitoring and modular replacement for primary battery type option.

CONFIGURATION OPTIONS

SCADA mode

- 'L' Local - 25 contacts
- 'R' Remote - 0 contacts

Communications

- 'G' 4G LTE
- 'P' PSTN
- 'R' LoRa
- 'S' GPRS 2G
- 'W' WiFi
- 'L' Local

Antenna

- 'E' External
- 'I' Internal
- 'N' None

Power

- 'B' Battery - up to 100 Ah
- 'R' Rechargeable up to 100 Ah
- 'M2' Mains - 230 V a.c.
- 'M1' Mains- 110 V a.c./d.c.
- 'M4' D.C. - 48 V

Cabling

- '0' Unscreened
- '1' Screened

Asset type

- '0' Hydraulic
- '1' Pneumatic

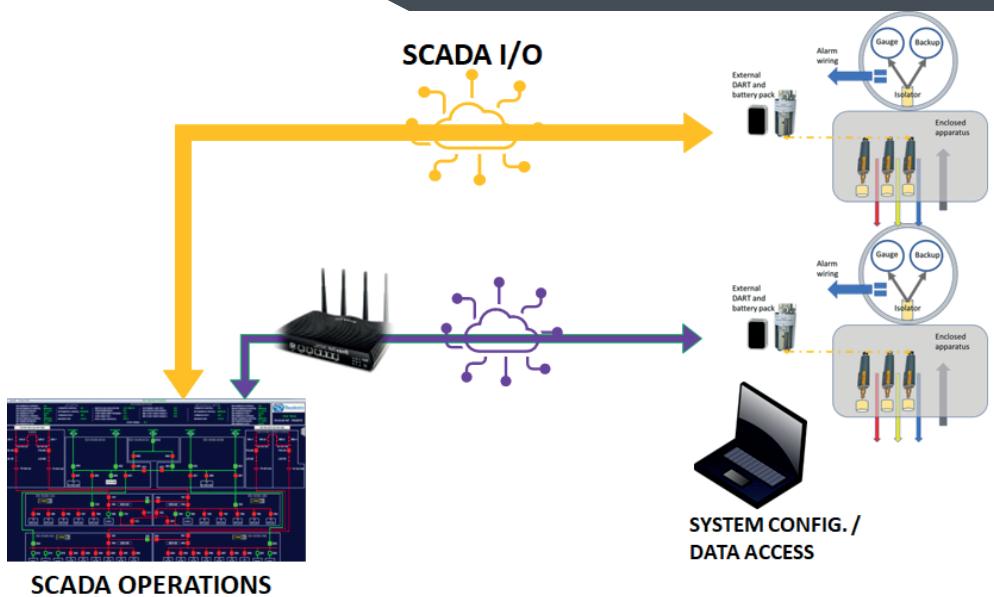
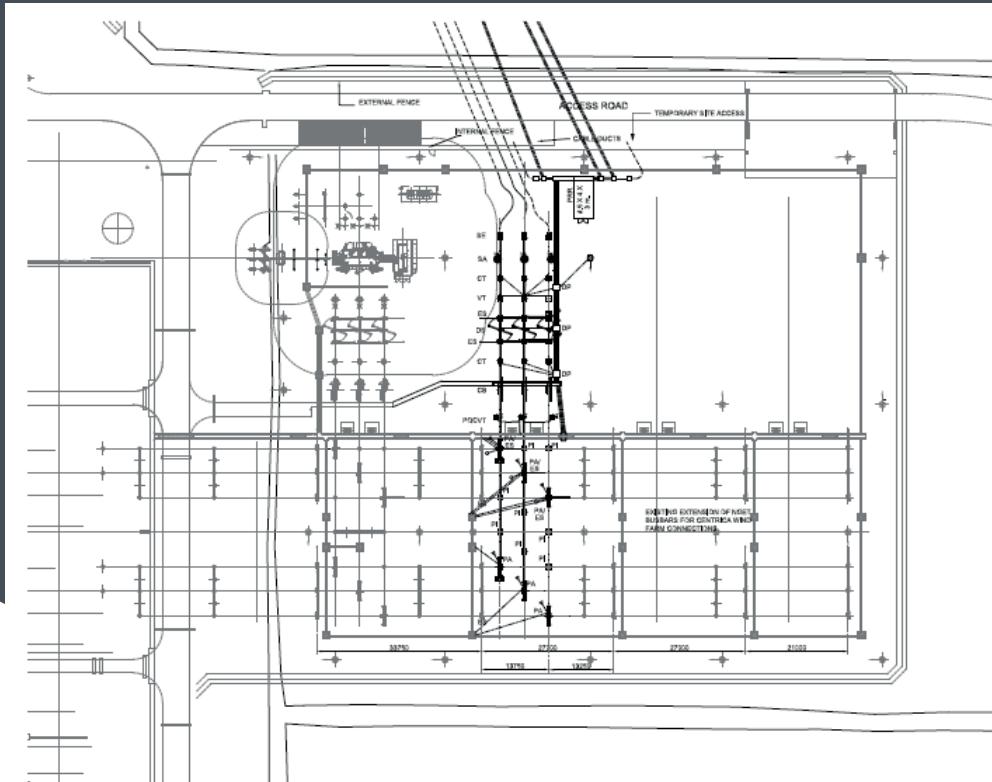
Enclosure

- '1' Stainless steel
- '2' GRP

Example:

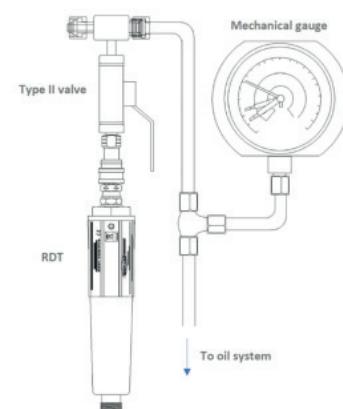
DART 1 0 1 R I L L

CASE STUDY



The maintenance of Silicon Oil filled Compound Cable Sealing End assets is critical.

DART controllers can be used to provide continuous status monitoring and performance trend analysis for advance problem notification. Low cost, non-intrusive system protection.



PRODUCTS SUMMARY

MASTER CONTROL UNIT (RTU)

Sub-Station located
Mix of transducers
8 transducer ports
15km range
40 alarm mapped SCADA
Contacts PSTN or LAN Comms



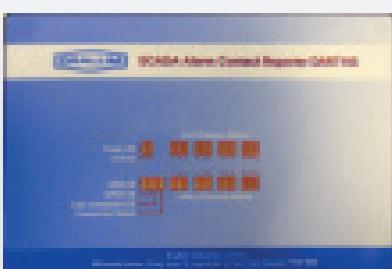
WIRELESS CONTROL UNIT (DART)

Field Installed
GPRS/Wi-Fi
110vac/240Vac or rechargeable Battery



WIRELESS SCADA INTERFACE

Substation Located
GPRS/Wi-Fi
Low/Falling Alarm Reporting



PRESSURE

Cable Oil
Atmospheric
0.1% Accuracy
Over operational range



TEMPERATURE

Cable
Ground
Ambient



CONTACT MONITOR

Kiosk Security
Fluid Level
3VFC's
Server assigned functionality





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