



POSTEC

4DET - Forecourt Data Entry Terminal



Product Overview

The PostecForecourt Data Entry Terminal (4DET) is an outdoor terminal specifically designed for use in fuel marketing operations in both retail and commercial (including unmanned) sites. The 4DET is a "thin client" terminal consisting of a cluster of peripherals wrapped in a layer of intelligence to facilitate forecourt LAN communications.



Peripherals include:

- Graphical back-lit LCD display
- Configurable back-lit keyboard
- Magnetic Card Reader
- RFID Mifare Smart Card reader/writer
- Dallas iButton reader
- Bar code scanner
- Receipt printer

The 4DET facilitates wet-stock automation and control on the forecourt when coupled with the Postec Communications Controller through a number of key forecourt applications. These applications can be mixed to provide a variety of functionality to both customers and forecourt attendants.

Forecourt Authorisation & Data Collection

Applications

Unattended Fuel Access:

This 4DET application is targeted at the following refuelling outlets where a fleet of vehicles or plant refuelling automation is required:

- Retail service station for account customers
- Closed home-base environments for fleet management truck, bus, taxi, marina, aircraft, mining

The 4DET provides customer dialog for vehicle/driver identification and collection of customer/user data for the purpose of dispenser authorisation. Vehicle and driver identification options include:

- Keyboard entry
- Magnetic Card
- RFID using Mifare Contact-less Smart card / key fob tag
- Dallas iButton.

User prompts for manual entry of customer data are also provided including:

- PIN
- Odometer
- Engine Hours
- Plant number
- Contract number
- Compartment
- Route...



Various authorisation controls can also be applied including: grade restrictions, time restrictions, allocation limits (tank size), velocity check etc...

Transactions and card lists can be managed, either locally, or from a remote head office using the 4COM network management software. 4COM can also integrate with external management systems, providing transaction export and card import automation. Alternatively the PCC can be used with an external payment server device (eg EFTPOS terminal) to facilitate pre-authorization and transaction finalization. This enables online operation for on-road refuelling and payment.

Automatic Vehicle Identification:

While the PCC can be linked to automatic vehicle identification equipment to automate the collection of critical vehicle/driver information, the 4DET utilised in such a system can be used to further provide optional vehicle/driver identification data collection through manual keypad entry.



Tank Inventory / Delivery Entry:

The 4DET can be used to manage the tanker deliveries to any type of refuelling site. Being a forecourt terminal, the tanker driver does not require access to the office equipment in after-hours deliveries or on unattended site applications. Driver card / tag presentation and PIN can be configured for system security.

This application is linked with the PCC's auto-tank gauging (ATG) application to automatically check the tank levels to ensure the full drop can be made. Delivery confirmation receipts, including a delivery docket number, depot metered delivery and ATG measured delivery confirmation can be printed as well as capturing this information into the PCC for site and head office reporting.

For sites without ATG, the 4DET can provide a means of entering tank dips and delivery information to maintain the PCC's logical inventory system based on dispenser meter sales volume reports.

Future developments may include integration with *Sealed Parcel Delivery* systems.

Attended Forecourt POS:

Attended forecourts can use the 4DET for the following functions:

Island Attendant Identification (Tagging) for controlling dispenser authorization. This provides security of the dispensers on the forecourt by automatically recording every transaction against the attendant who authorized the dispenser, making them accountable for the fuel dispensed. This allows attendants to have full access to all dispensers on site, providing more efficient operation as well as providing attendant sales reports by value, volume and number of sales.

Dispenser Sales Finalization for finalizing a dispenser sale on the forecourt. Provision is made to record the method of payment and produce a receipt for the customer. The full transaction details are captured by the PCC and made available to on site POS/ back office as well as at the head/ regional office.



Non-metered product sales can also be made using the 4DET as a POS terminal on the forecourt. A subset of a POS system inventory can be exported to the PCC to allow products to be sold on the forecourt eg batteries, lubricants promotional items etc... Again the full transaction details are captured by the PCC and made available to on site POS/ back office as well as at the head/ regional office. PLU number or department numbers can be used to identify the products sold. A bar code reader can also be mounted in the 4DET stand.

Wet-sock Management on the Forecourt:

In commercial applications where there is no onsite computer management system, wet-sock management functions can be executed on the PCC from a remote head office management system.

In addition to this the 4DET can also be used to carry out management functions as required for example:

- Dispenser unit price changes
- Printing wet-stock reports
- Auto vehicle ID override transactions
- System date and time changes
- Printing reports reported from head office (on receipt)

Specifications

User Input

Keyboard

- 25 Button Keypad
- LED back light
 - o Sealed mechanical key switch behind membrane
 - o Electrical life 1,000,000 cycles
 - o Virtual vandal proof construction design (cannot be knifed)

Magnetic Card Reader

- Track 1 and Track 2
- Water-tight design that meets UL50 requirements
- MTFB:
 - o Electronics: 125,000 hours
 - o Head: 1,000,000 passes (500,000 insertions)
- Operating Temperature: 0°C to 70°C
- Operating Humidity: 10% to 90% non condensing

Other Input Options

- Mifare contactless smart card reader/writer.
- Dallas i-Button reader.

Display

- LCD graphics display
- 128 X 64 pixel's
- Green LED back light
- 33 x 66 mm visible display.
- Ambient Operating temperature: -20 °C to 70 °C
- Vibration Operating: 0.5 G
- Shock Operating: 3G

Battery Backed Power Supply

- 7.5 to 9 VDC or VAC
- Printer 24V PSU control.

Serial Communications

- RS 485 to PCC controller
- RS 232 to receipt printer.
- One spare RS 232 serial port. (available for smart card reader interface)

Shift Attendant Sales Totals

9/10/2003 13:42:31

Site: 100 - Grant's Gas Garage
Address: 12 Great South Road Newton Auckland
Telephone: +64 415 8803

Report Period (Shift)
From: 3/08/2003 21:55:26
To: 4/08/2003 14:52:37
Shift Number: 1

Attendant	Finalisation	Sales	Volume	Value
Shift 1				
1 : Grant	Cash	123	1163.15	34369.61
	Totals:	123	1163.15	34369.61
2 : Bryan	Cash	92	1176.75	34150.52
	Credit Card	3	45.42	1596.05
	Account	1	90.85	2204.02
	Totals:	96	1313.02	37950.59
3 : Andrew	Cash	7	14.80	542.16
	Totals:	7	14.80	542.16
4 : Michael	Cash	2	34.57	1260.10
	Totals:	2	34.57	1260.10
5 : Robert	Cash	134	1129.81	36656.88
	Credit Card	2	47.57	1671.60
	Account	6	99.73	3504.50
	Totals:	142	1277.11	41832.98
6 : Weili	Cash	82	535.07	17739.95
	Account	5	348.73	8969.48
	Totals:	87	883.80	26709.43

Receipt Printer (option)

Print

- High resolution printing (8 dots/mm).
- Programmable character and line space.
- Printing adjustments (speed, density and consumption).
- Graphic bitmap printing capabilities.
- Several bar code formats.
- Two different font sizes (Font A = 12x24dots. Font B = 8x16dots).
- Charactersize: Font A: 12 x 24 dots (1,5 x 3 mm). Font B: 8 x 16 dots (1 x 2 mm).

Paper

- Papertype: Single-ply thermal paper roll
- Paperwidth: 59.5 +/- 0.5mm (2.34" +/- 0.02")
- Paperroll outer diameter: 150mm (Max.)

Postec Battery Backed Printer Power Supply

- 30V 1.2Ah gel cell battery's (2 x 12v, 1 x 6V)
- Nominal 230 AC 50Hz input
- Regulated 24 VDC output. (Printer)
- Regulated 7.5 VDC output (CAT)
- Power Good and Battery Charge State signal outputs.
- Battery life greater than 1 hr.
- External control of 24V supply.

Mechanism: TK41 Thermal line printer

- Printing speed: High speed mode: 150mm/s (5,9"/s) max.
- High reliability: 15 million lines.
- Thermal head life
 - Activation pulse resistance 100 million pulses
 - Abrasion resistance 100 Km
- Auto-cutter life 1.000.000 cuts (when above 30°C and above 60% HR, 750.000 cuts)
- Operating Temperature: 0 to 55°C (32 to 131°F)
- Reliable printing: 5 to 50°C (41 to 122°F)
- No-paper and paper-near-end sensors.
- Both parallel (CENTRONICS) and serial (RS-232) data input interface.
- Scissors type auto cutter.
- Self test feature.
- High-speed printing: up to 150mm/s.
- Maximum printing width 56mm (448-dot positions)
- Dot density: 203 dpi x 203 dpi (8 dots/mm)

Forecourt Stand

The 4DET system can be supplied as separate components, or integrated into a stand suitable for mounting on an uncovered forecourt. There are two base configurations:

Forecourt Data Entry Terminal: (base unit)

- Power Supply
- 4DET
- Receipt Printer (option)
- Tagging Visual Display (option)
- Bar code Scanner (option)

Stand-Alone Commercial: In addition to the base unit includes

- Postec Communications Controller
- ATG Console

All electronics are mounted above the 1.2 meter mark to enable the stand to be mounted within the dispenser area. Vapour barriers to seal the forecourt conduits are required and the unit must be installed by qualified electricians in accordance with local regulations. The stand design facilitates a large surface area for company logo, marketing and product branding.

