

Control Solutions for Farm Dairies

Refrigeration Control Technology from Eurotec

- Maximise Refrigeration Plant Capacity and Efficiency
- Reduce Plant Operating Costs
- Reduce Milk Temperatures Faster (and improve Milk Quality)

Eurotec has been building and supplying Control Panel Solutions to the Refrigeration industry since 2008. Since then we have become a leading manufacturer and supplier of Refrigerated Milk Vat control panels to the dairy sector controlling the refrigeration system(s), pumps and CIP functions as well as Condensing Unit control panels for OEM's, custom control panels for Refrigeration Racks, Chillers and a variety of commercial refrigeration applications.

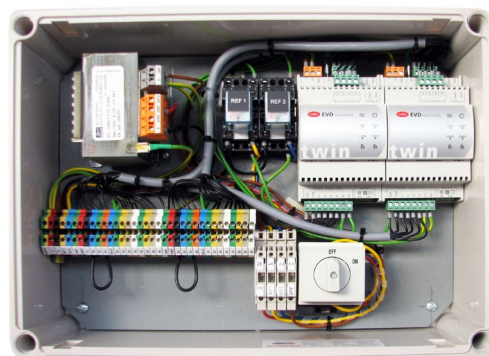
In 2012 the Control Panel Solutions division (CPS) was established to reflect the growing control panels business and we now supply Control Panel Solutions to the Refrigeration, HVAC and Electrical markets.

CPS is supported by the wealth of industry and application knowledge that has been synonymous with Eurotec for over a quarter of a Century.

This dairy sector booklet contains details on the latest solutions to help meet the new milk cooling requirements that could take effect from June 2016.



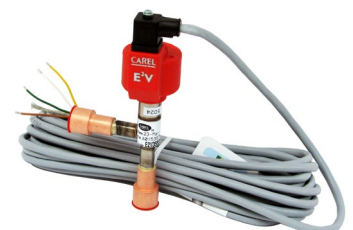
NEW - Milk Vat Control Panel
 with viewing window as standard



EVD4 Electronic Valve Driver
 Control Panel



EEV + Sensors & Accessories



Changes to NZCP1: Code of Practice for the Design and Operation of Farm Dairies

This code of practice is recognised and has been assessed to be a valid and appropriate means of partially fulfilling the requirements of a risk management programme for farm dairies.

The Ministry of Primary Industries (MPI) are reviewing this code of practice and in particular the cooling requirements for raw milk. The proposed changes are to help the NZ dairy industry meet the requirements and standards of new and existing export/import markets. One of the main focus areas is around the faster cooling of raw milk post harvest. The code of practice suggests farm dairy operators should be targeting to cool their milk more effectively than these requirements to ensure the quality of milk is maintained.

The following is an extract from section 7.14 Milk Cooling NZCP1: Code of Practice for the Design and Operation of farm Dairies July 2013 Version 5 Amendment 2. The full document can be reviewed at:

<http://www.foodsafety.govt.nz/elibrary/industry/dairy-nzcp1-design-code-of-practice/>

Future Requirements

Milk temperature at collection or use.

The milk cooling requirements are currently under review. Although any change is not likely to take effect before June 2016 it is recommended that Farm Dairy Operators contemplating an upgrade to primary cooling or bulk milk tank refrigeration discuss options with their dairy company and/or refrigeration supplier, and consider solutions that employ the latest technology (especially for primary cooling) capable of meeting the following criteria:

Raw milk must:

- (a) be cooled to 10°C or below within 4 hours of the commencement of milking; and
- (b) be cooled to 6°C or below within 6 hours of the commencement of milking and 2 hours of completion; and
- (c) be held at or below 6°C until collection or the next milking;
- (d) not exceed 10°C during subsequent milkings.

Farm Dairy Operators are to have auditable systems capable of demonstrating conformance to milk cooling requirements. Where electronic data capture and recording systems are installed it is recommended that such systems should be capable of holding delivery line and bulk milk tank temperature data for the previous 30 days for both milk and CIP. In situations where there is continuous milking the milk must enter the bulk milk tank at 6°C or below, continuous milking being defined as milking for 6 hours or longer from the time that milk first enters any bulk milk tank.

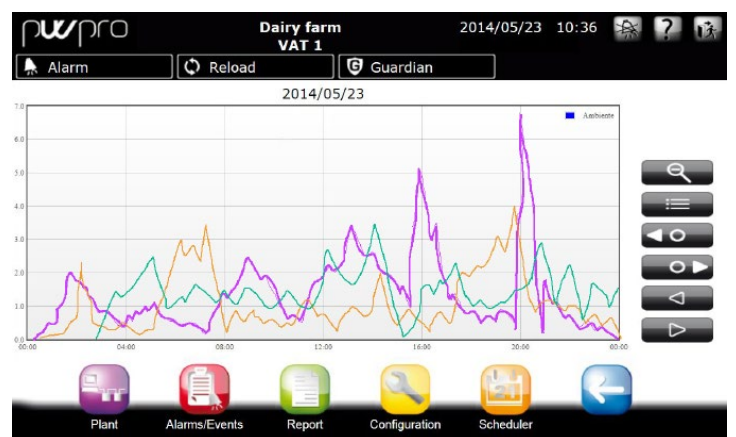
Reference:

Ministry of Primary Industries. NZCP1: Code of Practice for the Design and Operation of Farm Dairies, July 2013 Version 5 Amendment 2

Milk Vat Alarm & Monitoring System

This latest touch screen panel from Carel in Italy will allow farm dairy operators and service staff reliable and fast access to the whole cooling system from one dedicated point. Your valuable milk temperature records will be safe and secure for audits and all managed automatically. The system recognises when milking has started and monitors the cooling cycle to ensure the recommended temperatures and times are observed.

See following page for product features and codes.



PWPRO PANEL FEATURES:

Highly waterproof and durable IP65 enclosure to protect against the elements

Full colour touch screen TFT LCD Display - 7 inch, 16,000 colours with 800x480 WVGA resolution.

Fast and easy access to temperature data and graphs for bulk milk storage

Dedicated red alarm output indicator and siren for each milk vat (max. 2 vats) indicates high temperature conditions.

Ability to store recorded data for more than 1 season.

Waterproof IP65 USB port allows pen drives to be plugged and extract data for analysis purposes.

Fully Ethernet compatible for access via the web with standard browser.

Secure password protected access for multiple users and levels

No moving parts which means robust hardware and high reliability

Optional module to allow the monitoring of other key points in the system such a precooler, bulk milk delivery, water and air temperatures.

Future proofed for communication and monitoring of chillers & refrigeration plant with simple communication card.

PRODUCT CODES:

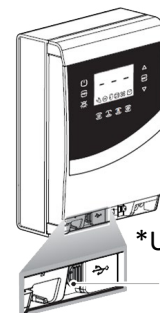
CODE	MILK VAT	EXTRA MEASURING POINTS MODULE	GSM ALARM EMAIL MODULE
PWPRO3P1	FOR 1 MILK VAT		
PWPRO3P2	FOR 2 MILK VATS		
PWPRO3P3	FOR 1 MILK VAT	YES	
PWPRO3P4	FOR 1 MILK VAT	YES	YES
PWPRO3P5	FOR 2 MILK VATS	YES	
PWPRO3P6	FOR 2 MILK VATS	YES	YES

MilkCella: The new control solution for milk vats with future proof logging capability.

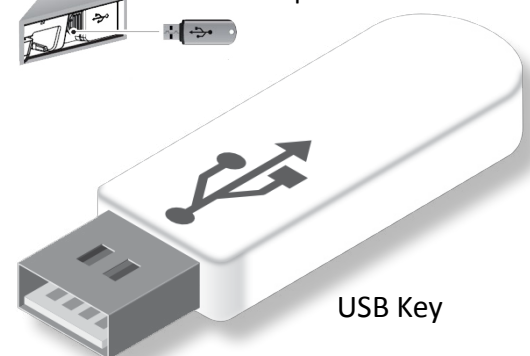
MilkCella is the latest control panel solution for refrigerated milk vats developed by Eurotec in response to the proposed changes to NZCP1.

At the heart of this milk vat controller is the latest Ultracella programmable platform control from Carel Industries. Some key features of the platform are:

FEATURES:
Carel Ultracella Controller
IP65 Lockable Main Enclosure. Metal Tagged lock supplied.
Wide easy to read and bright LED display
Flat IP65 keypad is hygienic and easy to clean
USB service port for upload/download of parameters, software and collection of data*
Easy navigation of menu with backlit keyboard and icons
Option for additional languages to be loaded for use overseas
Optional graphical interface tool for service and installation teams
Pre-wired back to terminal block
Electrical controls mounted in internal enclosure
Multifunction switch > PUMP - IPC - OFF - REF1 - REF2
IPC timer adjustable from 0 secs - 10hrs, set to 10 minutes
IPC start push button
Agitator 10A 230VAC relay included
6 meter special vat probe included
Wiring Diagram Included
Application Sheet & Parameters Guide included
Large window on front door which shows position of master control switch
Milk Document Clip



*USB service port



USB Key

Electrical Control Panels for Refrigerated Milk Vats

FEATURES:

IP65 Lockable Main Enclosure. Metal Tagged lock supplied.

Pre-wired back to terminal block

Electrical controls mounted in internal enclosure

Multifunction switch > PUMP - IPC - OFF - REF1 - REF2

IPC timer adjustable from 0 secs - 10hrs, set to 10 minutes

IPC start push button

Agitator 10A 230VAC relay included

Carel IR33 Series Controller

6 meter special vat probe included

Dual Controller option available (p/n IRDAIRYPANEL2C)

Wiring Diagram Included

Application Sheet & Parameters Guide included

External Viewing Window

Milk Document Clip



Product Codes:

IR33DAIRYPANEL

Single Milk Vat

IR33DAIRYPANEL2C

Dual Milk Vat





Control Panel Solutions
A Division of Eurotec Limited

CAREL

Refrigeration Control Technology from Carel & Eurotec

NEW! Milk Vat Control Panel - Single with viewing window as standard
(provides enhanced visibility of the system status)



Panel Configurations:

- CPS offers a range of configurations which can be fitted into the standard enclosure
- Alternatively these options can be supplied as stand alone solutions.



Milk Vat Dual Panel - Small



Single Panel Vertical - Small

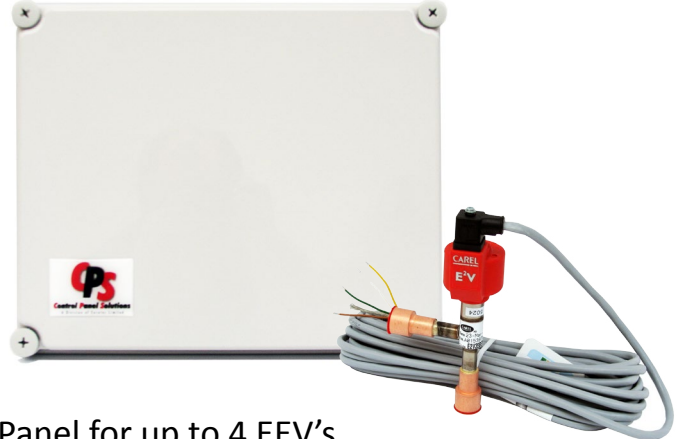
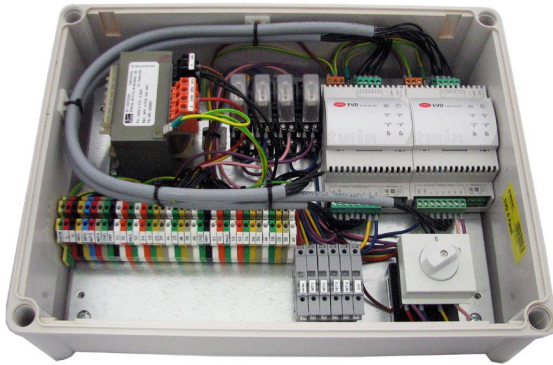


Single Panel Horizontal - Small



Control Panel Solutions
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Control Panels for Electronic Expansion Valves



EVD 4 Panel: 2 x Twin Driver Panel for up to 4 EEV's

Refrigeration Control Technology from Carel & Eurotec

- Maximises Refrigeration Plant Capacity and Efficiency
 - Reduces Plant Operating Costs
 - Faster Cooling of Milk

HOW?

Replacement of the traditional (and old technology) Thermostatic Expansion Valves (TEV's) with Carel **Electronic Expansion Valves (EEV's)** provides outstanding superheat control of your refrigeration plant. This in turn maximises the cooling efficiency of the refrigeration system and the milk vat.

TEV systems can be easily upgraded to EEV versions. In addition to their proven Milk Vat Control Panels, Eurotec now offer for retrofit a range of Prewired **Electronic Valve Driver (EVD)** Panels complete with Valve Drivers installed, with all temperature and pressure sensors and cables included.

Tip: By also installing Carel FCP Condenser Fan Speed Controls you can further maximise the plant potential.

Visit our website:

www.eurotec.co.nz

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