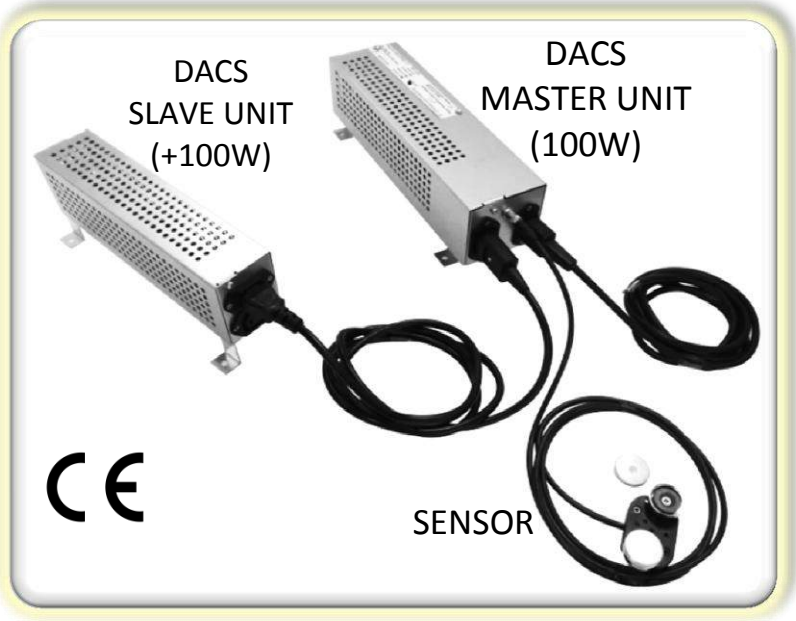
Drallim Anti-Condensation System (DACS) Control Enclosure/Panel Heater

Prolongs life & increases reliability of enclosure components by intelligently eliminating condensation

- **Eliminates wasted energy & reduces operational costs**
- **Up to 80% electricity savings**
- **Lowers carbon footprint**
- **Dew Point Innovation**
- **Min. 10 year expected life**
- **Can be easily installed**
- **Magnetic mounting sensor**
- **Heater control up to 400W (+3 DACS-Ex slave units)**
- **Built-in status indicators**
- **Min. temp 'peace of mind' feature**
- **British engineering, design & manufacture**



DACS Master Unit Specifications

AC Supply Voltage	230V ±10%, 50 Hz
Dimensions (l x w x h)	290 x 79 x 95 mm
Mains Lead Length	2 m
Fixing Footprint (l x w)	229 x 67 mm
Weight	1 kg
Heating Capacity	100 W
Total Switching Capacity	400 W
Connection Type	Mains IEC
Min Temp O/R Setting	Via On-Board Switch
Max Humidity O/R Setting	Factory Pre-settable
Sensor Mounting	Remote Magnetic Mount
Sensor Type	Humidity & Temperature

DACS-Ex Slave Unit Specifications

AC Supply Voltage	230V ±10%, 50 Hz via DACS
Dimensions (l x w x h)	253 x 53 x 95 mm
Mains Lead Length	1.5 m
Fixing Footprint (l x w)	229 x 67 mm
Weight	0.55 kg
Heating Capacity	100 W
Connection Type	Mains IEC

(NB.110V AC DACS & DACS-Ex Options also Available)

The DACS is a microprocessor based system that uses DEW POINT INNOVATION to ensure that the heaters are powered up only when necessary to maintain condensation free operation. This method of control ensures that the heaters are usually powered down. The effect of this superior control is reduced energy costs, reduced maintenance and longer heater life making the DACS a sound investment.

Using the current average non-domestic electricity tariff of 10.5p per kWh a 400W DACS can have a typical payback of less than 12 months when compared to continuous enclosure heating. With an expected lifespan of at least 10 years the DACS is guaranteed to pay for itself whilst saving energy. This is why a distribution network operator (DNO) is currently installing the DACS across multiple sites.

For more information or to place an order please speak to our friendly sales team on

+44 (0)1424 205 140

or email sales@drallim.com

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Determining enclosure heating requirements

The heating requirements of an enclosure are dependent on the ambient and operating temperatures in addition to the material and the location of the enclosure. This is made simple using the easy to follow guide below.

A) Temperature:

Required internal temperature (T_i) = ... °C

Lowest expected ambient temperature (AT) = ... °C

Temp dissipated by enclosure components (T_v) = ... °C

Temperature difference ($\Delta T = Ti - AT - Tv$) = ... K

Note: $\Delta T\ ^0C = \Delta T$ Kelvin
i.e. $\Delta T = 15\ ^0C = 15$ K

B) Surface Area (S.A.):

H = Enclosure Height = ... m

W = Enclosure Width = ... m

D = Enclosure Depth = ... m

Heat is dissipated through the walls of the enclosure with exposed surfaces releasing the greater heat. Therefore the manner of installation is an important factor when calculating necessary heating power. Using the IEC 60 890 enclosure surface area formulae to the right it is possible to calculate the surface area according to type of position.

S.A. = Surface Area = ... m^2

IEC 60 890 Enclosure Surface Area Formulae

- Stand Alone Enclosure
  S.A. = 1.8 x H x (W + D) + 1.4 x W x D
- End enclosure in a free standing row
  S.A. = 1.4 x D x (W + H) + 1.8 x W x H
- Enclosure within a free standing row
  S.A. = 1.8 x W x H + 1.4 x W x D + H x D
- Wall mounted enclosure
  S.A. = 1.4 x W x (H + D) + 1.8 x H x D
- End enclosure in a wall mounted row
  S.A. = 1.4 x H x (W + D) + 1.4 x W x D
- Enclosure within a wall mounted row
  S.A. = 1.4 x W x (H + D) + H x D
- Covered enclosure within wall mounted row
  S.A. = 1.4 x W x H + 0.7 x W x D + H x D

C) Enclosure heat transfer coefficient (k):

Common enclosure material heat transfer coefficients are shown to the right.

k ≈ ..... $W/m^2\ K$

Heat Transfer Coefficient (k) of Typical Control Enclosure and Panel Materials

Aluminium, k ≈ 12 $W/m^2\ K$
Aluminium (double wall), k ≈ 4.5 $W/m^2\ K$
Steel sheet, k ≈ 4.5 $W/m^2\ K$
Painted steel, k ≈ 5.5 $W/m^2\ K$
Plastics, k ≈ 3.5 $W/m^2\ K$

D) Calculate Minimum required thermal capacity (P_H):

P_H = S.A. x k x ΔT

= ..... m^2 x ..... $W/m^2\ K$ x ..... K = ... W

For exterior enclosures the calculated minimum thermal capacity should be multiplied by two.

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