

# MD2 Mains Detect : 240Vac

**Warning : Before use, refer to DICAM CONTROL COMPONENTS : Essential Information.**

The MD2 is a dual channel input module for detecting presence of single phase mains, and signalling to a Dicam master unit. It can be used to detect mains presence/absence for alarm purposes, or to detect when a circuit (such as a feed auger) is powered up for run time monitoring.

## Technical Specification

<b>Maximum Operating Voltage</b>	250Vac	<b>Output Current</b>	1mA nominal
<b>Input Current</b>	1mA nominal	<b>PCB Dimensions</b>	64mm x 25mm
<b>Output Operating Voltage</b>	5Vdc	<b>DIN rail allowance</b>	36mm (2 x 18mm modules)
		<b>Insulation Category</b>	Double insulated

## Functional Specification

<b>Mains Input Voltage</b>	<b>Dicam input voltage</b>	<b>Software Trip Status</b>
>220/240V ac	0.3V dc	Trip Ok
approx 130Vac	2.5V dc	Trip Transition
0V ac	4.99V dc	Trip Fail

## General Description

- 1 The MD2 is an “opto-isolator” used to signal to a Dicam master unit when mains is present or absent. Mains voltage is connected to the “Mains Input Connection” and the “Low Voltage Output” is connected to the Dicam master unit.  
The input and output are optically isolated to maintain voltage isolation between mains and signal circuits.
- 2 When mains is present, the Low Voltage Output transistor is “on”, pulling the sensor input down to approx 0.3Vdc. When mains is absent, the output is “off” and the sensor input rises to approx 5Vdc..
- 3 The MD2 has two identical channels. These operate independently, but share some common connections (Sensor Ground and Mains Neutral.)
- 4 The low voltage circuit is powered by the Dicam sensor circuit connection. Unless the MD2 is connected to the Dicam unit, there is no voltage on the output terminals.
- 5 When the output is below 2.5Vdc the Dicam software interprets “Mains Present”. When the output is above 2.5Vdc, the Dicam software interprets “No Mains Present”
- 6 The transition point output (2.5Vdc) is *approximately* 130Vac, but may be between 100 and 160Vac. (The MD2 is intended only to indicate the presence of mains, not to determine an exact voltage.)
- 7 The MD2 must only be used to monitor normal (sinusoidal) mains, it must not be connected to phase controlled circuits (e.g. a speed controlled output to fans or dimmed output to lamps).
- 8 The mains input to the MD2 must be connected after switches, control circuits, fuses, overloads.  
The MD2 has no over current protection. If connecting to a circuit with capacity greater than 10A, install an in line fuse.
- 9 If only one channel is required, use channel 1. Leave other L2 and S2 terminals disconnected.

## Installation

- 1 The MD2 may be mounted using a central self tapping screw or DINMC mounting clip.

**WARNING : Insulating spacer must be used** to ensure clearance between mains circuits and other circuits or surfaces. (See diag.)

- 2 Allow minimum 1/2" (13mm) clearance between module and other circuits or surfaces.
- 3 Mains (monitor input) circuit and signal (connection to Dicam) cables must be segregated.
- 4 A backup (safety fuse) must be used if circuit is over 10 amps capacity.

