

# MDU 230

Data display unit – LCD  
Alphanumeric and Dot matrix area

## Description

The MDU 230 is a combined dashboard and input module for use either as a stand-alone display unit, or as an integral part of a complete data acquisition and monitoring system for use in the demanding environment found in motorsports vehicles.

The compact dimensions of the MDU 230 make it particularly suitable for motorbike applications. The advanced features of the LCD also make this product suitable for car applications.

The MDU is equipped with a comprehensive range of analogue and digital inputs and it is able to show any element on its display: a bar graph indicator is typically used to show engine revs, three fields are dedicated to show gear number and lap number and lap time, then two further fields have configurable labels. A dot matrix area can show up to 11 pages (one of them shows date and time) which can display from 1 to 8 channels each. The alarm are visualized in a further page of the dot matrix.

As part of the Magneti Marelli data acquisition and telemetry system, the MDU 230 can communicate over a CAN network with a range of data loggers receiving and displaying data from the logger as well functioning as an additional input module.

Available also a version with integrated GPS: MDU 230-G

## Main Features

- Visible area LCD 164 x 67.5 mm
- Dot matrix area resolution: 132 x 64 dots
- On display is shown: bar graph, gear number, speed, lap time, best lap, lap number and 11 pages available in the dot matrix area
- 2 push-button on the front panel for page and bar graph selection, temporary alarm disable, brightness regulation
- 6 high-brightness warning lights green/yellow/red for gear change (with programmable threshold for each gear)
- 2 high-brightness warning blue leds and 4 RGB programmable leds for general alarm
- 6 Single-ended
- 3 Pick-ups or Hall effect
- 2 Temperature
- 2 Lap Triggers
- 1 Internal 3 Axial accelerometer



## Benefits

- Bar graph with 2 configurable non-linear scale, manually selectable or automatically swapped by condition
- Available 8 brightness steps for backlight regulation
- Alarm channels with programmable thresholds and linkable to leds
- Inputs configurable to suit all sensors in the product range
- 1 output to manage an external warning lamp
- Transmit internal inputs and channels over CAN bus
- Easy to use and configure
- Designed for rugged applications

## Typical Applications

- All race applications

# DATA DISPLAY

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### Technical Characteristics

#### Inputs

Single-ended (2 @ 12 bit).....	6
NTC/PT1000 temperature sensor.....	2
NTC internal temperature sensor .....	1
Internal 3 axial accelerometer (up to 6 g) .....	1
VR Pick-ups or Hall effect.....	3
Remote push button .....	2
Lap Trigger.....	2
"Code Load" enable pin.....	1

#### Outputs

Voltage references (@ 5 V, 70 mA).....	1
External lamps driver.....	1

#### Leds

Green gear shift leds .....	2
Yellow gear shift leds .....	2
Red gear shift leds .....	2
Blue alarm leds.....	2
RGB functions leds.....	4
8 brightness steps for each leds	

#### Communications

CAN line (1 Mbit/s (*)).....	2
Ethernet line (10/100base T) .....	1
(*) 1 Configurable on request as Flex-Ray (10 Mbit/s)	

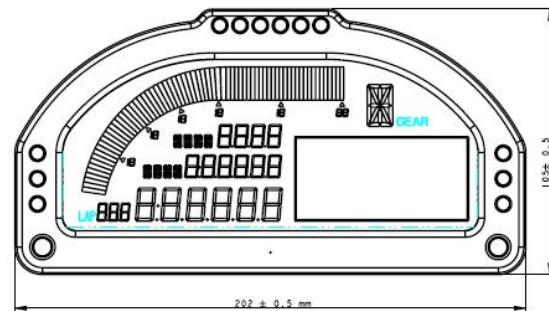
#### Logic Core

Microcontroller (64 MIPS RISC) .....	1
Flash EPROM (microcontroller).....	1 Mbyte
RAM memory (microcontroller).....	48 Kbyte
Flash EPROM .....	32 Mbyte
RAM memory .....	32 Mbyte
E2PROM.....	32 Kbyte
Time keeper .....	1

#### Other Characteristics

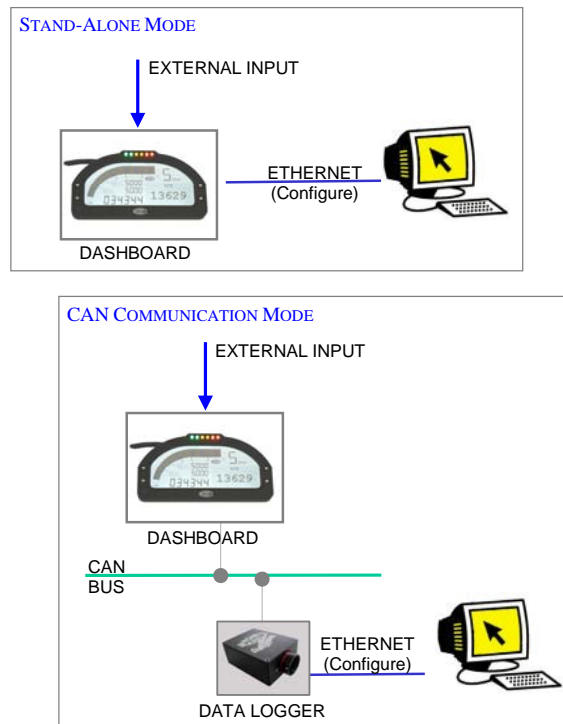
Power supply.....	8 to 18 V
Max operating internal temperature (Excl. Ethernet).....	85 °C
Humidity.....	5-95 %
Visible area LCD .....	164 x 67.5 mm
Dimensions	
without connector.....	202 x 105 x 19 mm
with connector.....	202 x 105 x 23 mm
Weight (approx.).....	400 g

### Dimensions



Dimensions in millimetres

### Application Schematics



MDU 230-0838XXXXXXXXX00

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August 2012  
rel. 10  
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