

## DATA DISPLAY

# MDU 220

Data display unit  
Alphanumeric LCD

### Description

The MDU 220 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 220 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, two fields are dedicated to show gear number and lap number, then four further fields have configurable labels, one of which allows the user to scroll a list of channels by a button. A final field allows to display the lap time or an alarm (with associated text label) or user configured text messages.

As part of the Magneti Marelli data acquisition and telemetry system, the MDU 220 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.



### Main Features

- Visible area LCD 164 x 67.5 mm
- On display is shown: bar graph, gear number, speed, lap time, best lap, lap number
- 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

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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)	

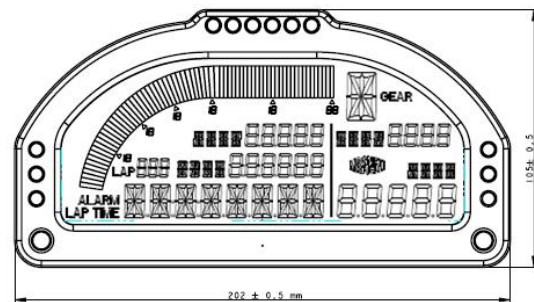
#### Logic Core

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

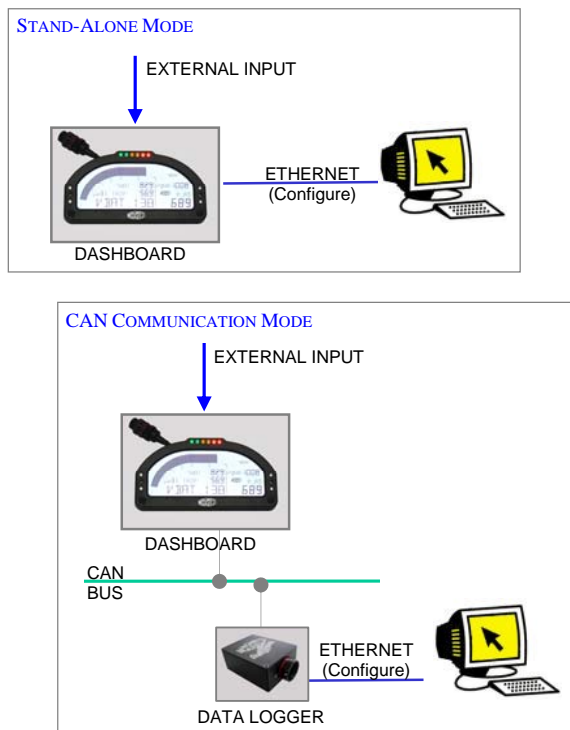
Power supply.....	8 to 18	V
Max operating internal temperature (Excl. Ethernet).....	85	°C
Humidity.....	5-95	%
Visible area LCD .....	164 x 67.5	mm
Dimensions		
without connector.....	202 x 105 x 19	mm
with connector.....	202 x 105 x 23	mm
Weight (approx.).....	400	g

### Dimensions



Dimensions in millimetres

### Application Schematics



For further information, please contact:



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