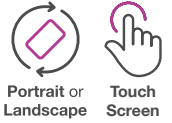




## DSEM810 – 10” Programmable Display (Non Keyed / Keyed Variants)

Part Numbers: M810-01, M810-02, M810-03, M810-04



### Overview

The DSEM810 is a 10” programmable display designed for use on vehicles and off-highway machinery. Developed for use as a standalone product or as part of a larger system, the DSEM810 provides users with outstanding flexibility. CANopen, SAE J1939 and raw CAN connectivity allow the configurable on-board I/O to be supplemented with a range of devices including DSEM64X programmable controllers or CAN enabled distributed I/O such as DSE2160 or DSE2170.

Two independent CAN interfaces and onboard Ethernet provides flexibility to connect with a range of external equipment. Panel mounting and RAM mount options are both available, along with the option to use in landscape or portrait orientation. The DSEM810 is configured using CODESYS 3.5 or Qt 6.

### Key Features

- Optically bonded 10.1” colour display for harsh environments.
- Daylight visible, anti-glare display (1000 cd/m<sup>2</sup> (nit))
- Capacitive touch screen with glove support.
- NXP i.MX 8 DualXPlus processor with GPU.
- 8 GB flash / 1 GB RAM.
- 4 outputs (Digital / PWM).
- 4 inputs (Digital, resistive, voltage, current, frequency input)
- Keyed variant features 12 configurable backlit keys.
- 2 independent CAN interfaces (J1939, CANopen and Raw CAN)
- Real time clock
- Ethernet, including CODESYS Modbus TCP Client
- Audio output
- 2 analogue camera inputs, TCP/IP camera
- Web browser
- PDF viewer
- Movie player
- USB for firmware / application updates and additional storage for files / data logs

### Product Variants

- M810-01 - CODESYS (Keyed)
- M810-02 - CODESYS (Non Keyed)
- M810-03 - Qt (Keyed)
- M810-04 - Qt (Non Keyed)

### Product Documentation

- 057-357 – DSEM810 Installation and Operator Manual
- 057-358 – DSEM810 CODESYS Manual
- 057-359 - DSEM810 Qt Manual



**DEEP SEA ELECTRONICS UK**  
 T: +44 (0) 1723 890099  
 E: sales@deepseaelectronics.com  
 W: www.deepseaelectronics.com

**DEEP SEA ELECTRONICS USA**  
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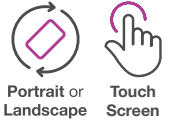
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**DSEM810 – 10” Programmable Display (Non Keyed / Keyed Variants)**

Part Numbers: M810-01, M810-02, M810-03, M810-04



Specifications			
<b>DC Supply</b>			
Continuous Voltage Rating	8 V DC to 32 V DC continuous		
Maximum Operating Current	< 1500 mA at 12 V and 24 V without external loads		
<b>Display</b>			
Measurement	10.1" TFT, 1280 x 800 resolution 24 bit colour. Optically bonded.		
Brightness	1000 cd/m <sup>2</sup> (nit)		
<b>Inputs</b>			
Type	Voltage 0 V to 5 V, 0 V to 10 V, 0 V to 32 V Current 0 mA to 20 mA Ratiometric Resistive 0 Ω to 3 kΩ Frequency 5 Hz to 30 kHz Digital positive / negative		
<b>Outputs</b>			
Type	Digital - High side / low side PWM - High side 0 Hz to 250 Hz		
<b>Processor</b>			
iMX8DualXPlus Microcontroller	2 x ARM Cortex A35 1 x ARM Cortex M4		
Speed	1.2 GHz 264 MHz		
Flash	4.6 GB available for application 8 GB total		
RAM	1 GB		
<b>Interfaces / Communications</b>			
CAN 1 and 2	CAN Interfaces 2.0 A/B, ISO11898 50 kbits/s... 1 Mbit/s CANopen, SAE J1939 or Raw CAN		
Ethernet	10 Mbit/s / 100 Mbit/s Duplex CODESYS Modbus TCP Client		
USB	USB host 2.0 (480 Mbit/s)		
WIFI	<b>Displays Supplied Before 01.08.2025</b>	<b>Displays Supplied After 01.08.2025</b>	<b>Displays Supplied Q2 2026 Onwards</b>
	WIFI 2.4 GHz IEEE 801.11 b/g/n	WIFI functionality disabled	RED Compliant

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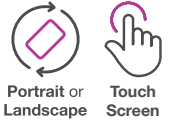
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## DSEM810 – 10” Programmable Display (Non Keyed / Keyed Variants)

Part Numbers: M810-01, M810-02, M810-03, M810-04



Specifications	
<b>Temperature</b>	
Operating Temperature	-30 ° C to +65 ° C / -22 ° F to + 149 ° F
Storage Temperature	-40 ° C to +80 ° C / -40 ° F to +176 ° F
<b>Dimensions</b>	
Overall (W x H x D) with buttons	281 mm x 181 mm x 65.5 mm / 11.0" x 7.12" x 2.58"
Overall (W x H x D) without buttons	281 mm x 181 mm x 61.5mm / 11.0" x 7.12" x 2.42"
Panel Cut-Out (W x H)	265 mm x 165 mm (R 12 mm) / 10.2" x 6.5" (R 0.5")
Weight	1.76 kg 3.88 lb
Maximum Panel Thickness	6 mm / 0.2"
RAM Mountable	AMPS hole pattern

Related Products		
<b>Programmable Controllers</b>		
DSEM640	Programmable Controller (68 I/O)	M640-01
DSEM643	Programmable Controller (34 I/O)	M643-01
<b>Expansion Devices</b>		
DSE2160	CAN Input / Output Expansion Module	2160-01
DSE2170	CAN RTD / Thermocouple / Analogue Output Expansion Module	2170-01
<b>Accessories</b>		
DSEM810 Wiring Harness 1.2 m (3' 11")		016-189
DSEM810 Connector Set (including pins)		007-1178
Panel Mount Kit		100-413-01
RAM Mount Kit		100-414-01
Ethernet Cable		016-160
USB Cable		016-161
WIFI / Bluetooth Antenna SMA(M)		020-1080

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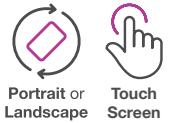
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Part Numbers: M810-01, M810-02, M810-03, M810-04



Environmental Testing Standards	
<b>CE Marking</b>	
EN61000-6-2	Electromagnetic compatibility (EMC) noise immunity
EN61000-6-4	Electromagnetic compatibility (EMC) emission standard
BS EN 61010: 2010 +A1: 2019	Safety of information technology equipment, general requirements
<b>E11</b>	
UN/ECE-R10.06	E11
<b>Water and Dust</b>	
IEC60529	IP67 / NEMA6
<b>Salt Spray</b>	
BS EN 60068-2-52	Test Kb - Salt Mist Cyclic (Sodium Chloride Solution) Severity 3 One test cycle consisting of: Salt mist temperature: +15 °C to +35 °C Spray period: 2 hours Followed by humidity storage period: 20 hours to 22 hours at 93 + 2 % to 3 % rh and +40 °C ± 2 °C Four test cycles (as above) to be applied followed by a Storage Period: 3 days @ 45 % to 55 % rh and +23 °C ± 2 °C
<b>Mechanical Tests</b>	
EN 60068-2-64	Vibration Random Freq range: 10 Hz to 350 Hz
ISO 16750-3	Test VII; vibration Random mounting Location: vehicle body
EN 60068-2-27	Mechanical shock Shock pulse shape: Half sine Amplitude: 50 g Duration: 11 ms Number of shocks: 3 in each direction of each axis (9 in total of each duration)
EN 60068-2-27	Mechanical shock Shock pulse shape: Half sine Amplitude: 50 g Duration: 6 ms Number of shocks: 3 in each direction of each axis (9 in total of each duration)
ISO 16750-3	Bumps Amplitude: 30 g Duration: 6 ms; 24,000 shocks
<b>Load Dump</b>	
ISO 16750-2	151 V (Ri 1 Ω) 202 V (Ri 8 Ω)

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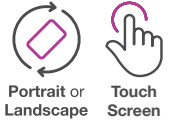
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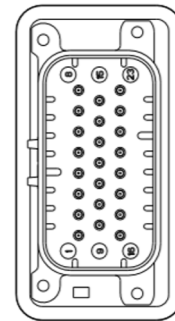
Part Numbers: M810-01, M810-02, M810-03, M810-04



Connector A			
Pin	Description	Comments	Switching Current
1		ECU Supply +ve	
2		Audio Output +ve	
3		Ignition +ve (15)	
4		Camera 1 Signal +ve	
5		Input -ve	
6		Program Enable	
7	IA001	AIN, FREQ	
8	IA002	AIN, FREQ	
9		ECU Supply -ve	
10		Audio Output -ve	
11		CAN 1 H	
12		CAN 1 L	
13		Camera 2 Signal +ve	
14		Camera 1 & 2 Signal -ve	
15	IA003	AIN	
16		VREF Out +ve	100 mA
17	QA001	OUT H, L, PWM	2 A
18		CAN 2 H	
19		CAN 2 L	
20	QA002	OUT H, L, PWM	2 A
21	QA003	OUT H, L, PWM	2 A
22	QA004	OUT H, L, PWM	2 A
23	IA004	AIN, FREQ	

### Connector Diagrams

Connector A



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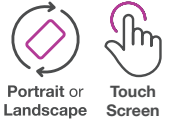
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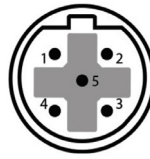
Ethernet - M12 'D' Coded	
Pin	Description
1	Tx+
2	Rx+
3	Tx-
4	Rx-
USB Host	
Pin	Description
1	+5 V DC
2	Data -
3	Data +
4	0 V
5	Shield
WIFI	
RF - SMA Female	Outside thread, female centre pin. (Suits antenna with SMA Male connector)

### Connector Diagrams

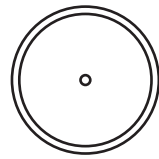
Ethernet



USB Host



WIFI



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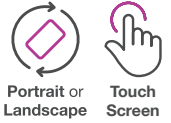
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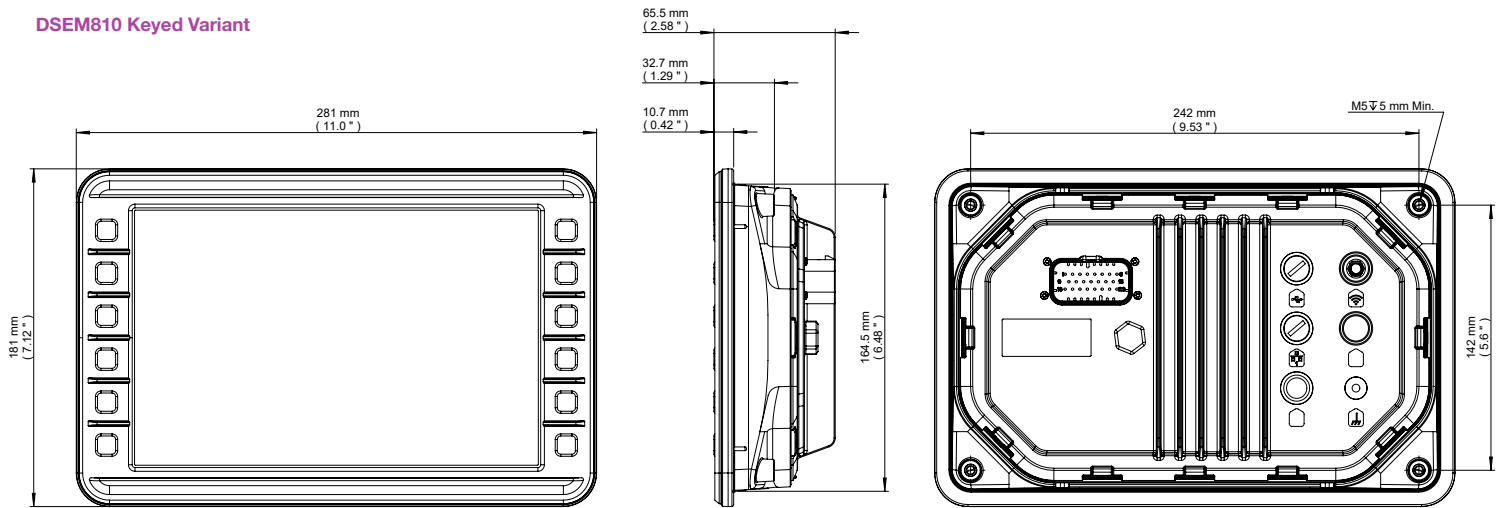
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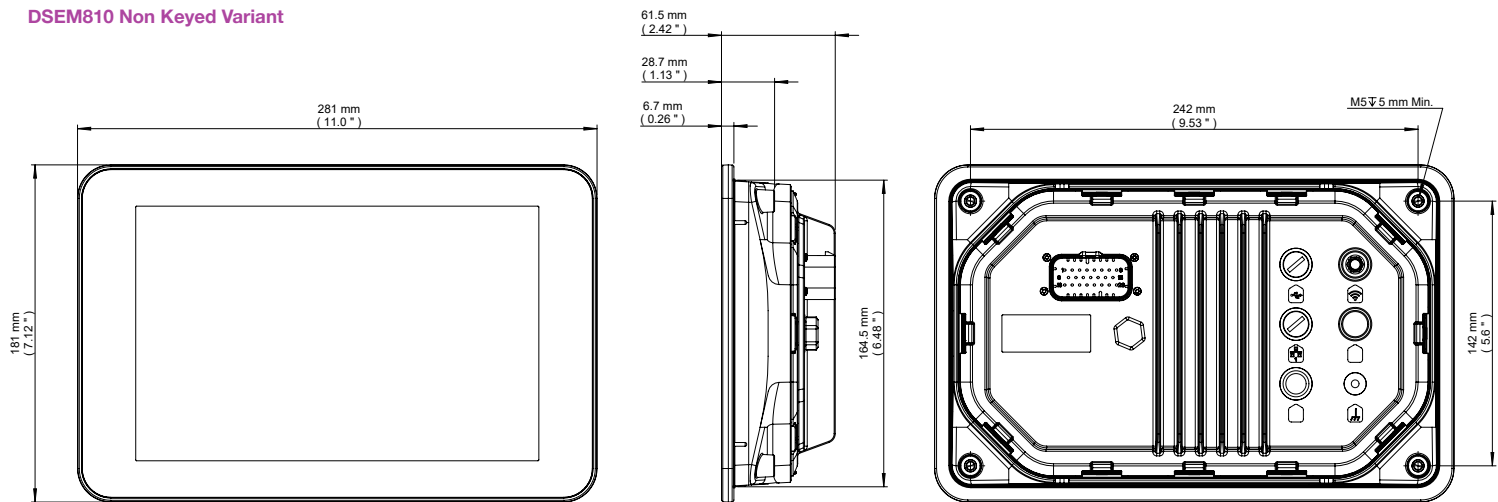


### Technical Drawing

#### DSEM810 Keyed Variant



#### DSEM810 Non Keyed Variant



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