DSE**Control**® Data Sheet

DSE**M812** – 12” Programmable Display (Non Keyed / Keyed Variants)

Part Numbers: M812-01, M812-02, M812-03, M812-04

Portrait or Landscape

Touch Screen

Overview

The DSE**M812** is a 12” Programmable Display designed for use on vehicles and off highway machinery and is the largest display in DSE’s programmable display range. Developed for use as a standalone product or with the DSE**M64X** programmable controllers, the DSE**M812** provides users with outstanding flexibility. The DSE**M812** is configured using CODESYS 3.5.21 or Qt, can be RAM or panel mounted and has the option to use in portrait or landscape orientation.

Key Features

- Robust HMI/programmable display specifically designed for mobile applications
- Optically bonded 12.1” TFT, 1280 x 800 16:10 resolution, colour
- Capacitive touch with glove support
- Two hardware variants available, one with keys with configurable colour back light and touchscreen. One with touchscreen only (non keyed)
- iMX6 quad processor
- 16 GB flash, 2 GB RAM
- Wake-up providing fast boot functionality
- USB host connections
- 4 analogue (composite video) camera support (PAL/NTSC)
- 3 independent CAN interfaces. Each configurable as J1939, CANopen or Raw CAN
- 2 independent Ethernet interfaces, via M12 connectors (Camera support - RTP, RTSP, H264, MJPEG)
- 6 configurable outputs
- 6 inputs (digital, resistive, voltage, 0 – 20 mA, 4 – 20 mA, frequency input)
- Wi-Fi support (external antenna required)*
- GPS (external antenna required)
- Flexible user programming via CODESYS 3.5.21 or Qt
- Built-in Web browser for communicating data over HTML to 3rd party devices
- Supports Modbus TCP server / client
- CODESYS WebVisu
- MapTiler map display
- NTP client
- Optional SSH
- WiFi station or hotspot*

*Wi-Fi support is available in all displays supplied before 01.08.2025. Wi-Fi support has been disabled in all displays supplied after 01.08.2025.

Product Documentation

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Specifications		
DC Supply		
Continuous Voltage Rating	8 V DC to 32 V DC continuous	
Maximum Operating Current	< 1000 mA at 12 V and 24 V without external loads	
Display		
Measurement	12.1” TFT, 1280 x 800 resolution 24 bit colour. Optically bonded.	
Brightness	500 cd/m² (nit)	
Inputs		
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 Postitive / Negative	
Outputs		
Type	Digital - High side / low side PWM - High side 20 Hz to 2 kHz	
Processor		
iMX6 Quad Microcontroller	ARM A9	
Speed	1 GHz	
Flash	16 GB (12.5 GB to CODESYS)	
RAM	2 GB	
Interfaces / Communications		
CAN	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 (12 Mbit/s)	
WIFI	**Displays Supplied Before 01.08.2025**	**Displays Supplied After 01.08.2025**
	Station or hotspot WIFI 2.4 GHz IEEE 801.11 b/g/n	Wi-Fi functionality disabled

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Specifications	
Temperature	
Operating Temperature	-20 ˚C to +70 ˚C / -4 ˚F to + 158 ˚F
Storage Temperature	-30 ˚C to +80 ˚C / -22 ˚F to +176 ˚F
Dimensions	
Overall (W x H x D) with buttons	330 mm x 210 mm x 63.5 mm / 12.99” x 8.26” x 2.5”
Overall (W x H x D) without buttons	330 mm x 210 mm x 59.7mm / 12.99” x 8.26” x 2.35”
Panel Cut-Out (W x H)	313 mm x 193 mm (R 12 mm) / 12.32 ” x 7.56 ” (R 0.5”)
Weight	2.12 kg 4.67 lb
Maximum Panel Thickness	6 mm / 0.23 ”
RAM Mountable	AMPS Hole Pattern

Related Products		
Programmable Controllers		
DSEM640	Programmable Controller (68 I/O)	M640-01
DSEM643	Programmable Controller (34 I/O)	M643-01
Expansion Devices		
DSE2160	CAN Input / Output Expansion Module	2160-01
DSE2170	CAN RTD / Thermocouple / Analogue Output Expansion Module	2170-01
Accessories		
DSEM812 Wiring Harness 1.2 m		016-185
DSEM812 Connector Set (including pins)		007-1073
Panel Mount Kit (with keys)		100-411-01
Panel Mount Kit (without keys)		100-411-02
Ethernet Cable		016-160
USB Cable		016-161

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Portrait or **Landscape** **Touch Screen**

Environmental Testing Standards	
CE Marking	
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
E11	
UN/ECE-R10.06	E11
Water and Dust	
IEC60529	IP67 / NEMA6
Salt Spray	
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
Mechanical Tests	
BS EN 60068-2-6	Vibration Resonance Dwell Freq range: 5 Hz to 500 Hz Acceleration: 5 g
EN60068-2-6	Vibration Resonance Search Freq range: 10 Hz to 2 kHz Acceleration: 5 g
EN60068-2-64	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 Operational 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)
EN60068-2-27	Mechanical Shock Amplitude: 50 g Duration: 6 ms
ISO 16750-3	Bumps Amplitude: 30 g Duration: 6 ms; 24,000 shocks
Load Dump	
ISO16750-2	151 V (Ri 1 Ω) 202 V (Ri 8 Ω)

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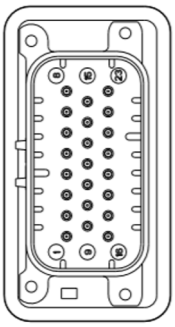
Portrait or Landscape

Touch Screen

Connector A	
Pin	**Description**
1	Product Supply +ve/battery
2	Wake Up
3	Ignition +ve (15)
4	Camera 1 Signal
5	Camera 1 GND
6	Program Enable
7	Camera 2 Signal
8	Camera 2 GND
9	Product Supply -ve/battery
10	CAN1_shield/GND
11	CAN 1 H
12	CAN 1 L
13	Camera 3 Signal
14	Camera 3 GND
15	Camera 4 Signal
16	Product Supply -ve/battery
17	CAN2_shield/GND
18	CAN 2 H
19	CAN 2 L
20	CAN3_shield/GND
21	CAN 3 H
22	CAN 3 L
23	Camera 4 GND

Connector Diagrams

Connector A



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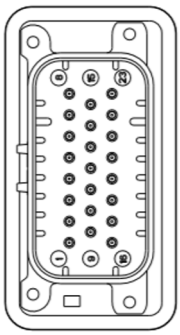
Portrait or Landscape

Touch Screen

Connector B			
Pin	**Description**	**Comments**	**Switching Current**
1		I/O Supply +ve	
2	QB001	OUT H, PWM	4 A
3	QB002	OUT H, PWM	4 A
4		GND	
5		GND	
6	QB003	OUT H, L	2 A, 4 A
7	QB004	OUT H, L	2 A, 4 A
8		GND	
9		I/O Supply +ve	
10		VREF Out +ve	100 mA
11		GND	
12		GND	
13	IB001	AIN	
14	IB002	AIN	
15		GND	
16		AGND	
17	IB003	AIN	
18	IB004	AIN	
19	QB005	OUT H, L	2 A, 4 A
20	QB006	OUT H, L	2 A, 4 A
21	IB005	AIN	
22	IB006	AIN	
23		GND	

Connector Diagrams

Connector B



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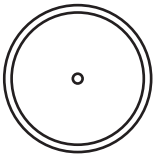
Ethernet - M12 ‘D’ Coded	
Pin	**Description**
1	Tx+
2	Rc+
3	Tx-
4	Rc-
USB Host	
Pin	**Description**
1	+5 V DC
2	Data -
3	Data +
4	0 V
5	Shield
WIFI	
RF - SMA Female	Outside thread, female centre pin. (Suits antenna with SMA Male connector)
GPS	
RF - SMA Female	Outside thread, female centre pin. (Suits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

Connector Diagrams

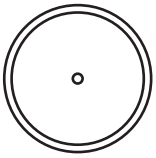
Ethernet

USB Host

WIFI



GPS



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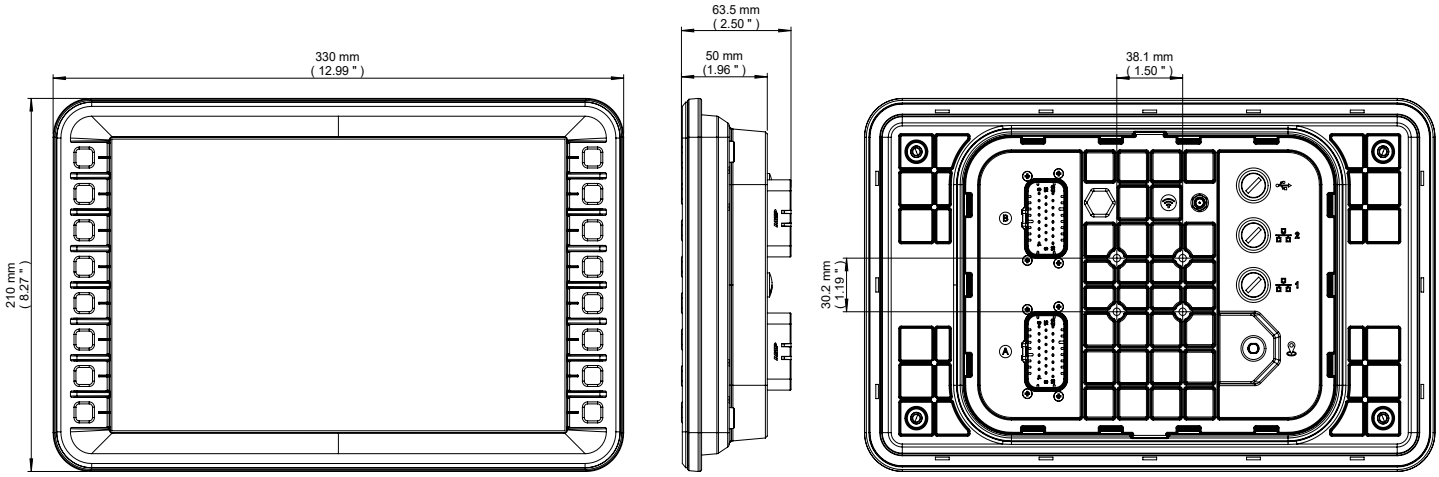
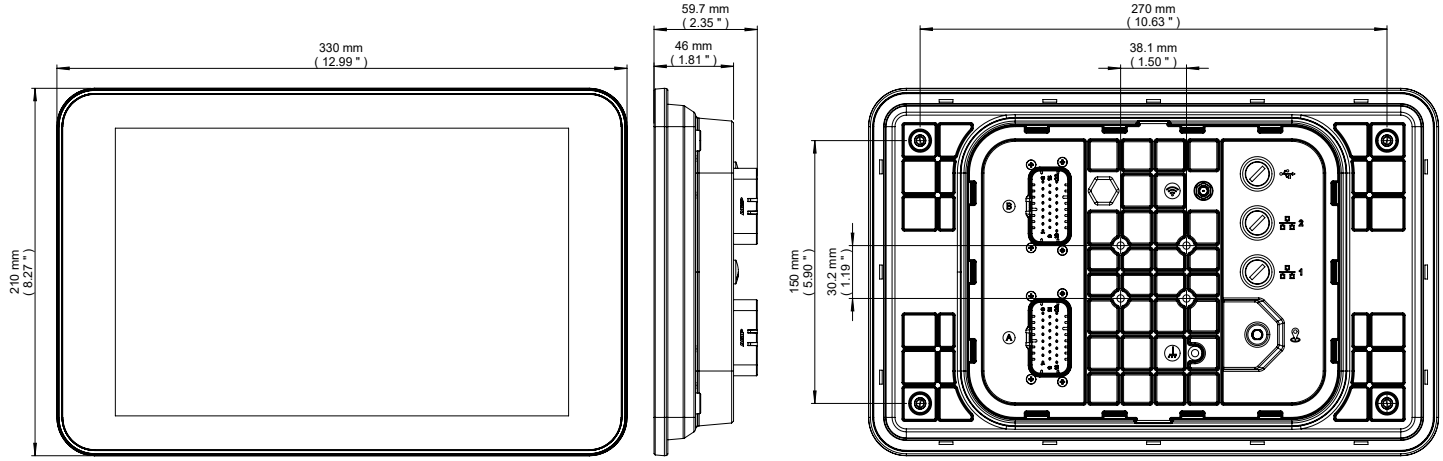
Technical Drawing

DSEM812 Keyed Variant



DSEM812 Non Keyed Variant



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