

Part Numbers: M840-02





Overview

The DSE**M840** is a 4.3" programmable display developed for use on vehicles and off-highway machinery. It offers an enhanced 32 MB Flash memory (20 MB available to CODESYS), 64 MB RAM (28 MB available to CODESYS), and 8 kB of non-volatile memory (retain data) and a powerful dual core Cortex processor. The display provides high levels of flexibility for multiple application types and is configured using CODESYS 3.5. The DSE**M840** can be used as a stand alone product or with additional DSE**M-Series** products to create extremely powerful applications.

Key Features

- Robust HMI / programmable display specifically designed for mobile applications
- Optically bonded 4.3" colour screen for harsh environments
- Powerful Cortex M7 400 MHz clock speed + M4 200 MHz clock speed
- 32 MB Flash memory (20 MB available to CODESYS), 64 MB RAM (28 MB available to CODESYS)
- · 8 KB retained data
- · 4 configurable inputs, digital and analogue capability
- 4 configurable digital outputs (2 can be configured optionally as PWM)
- 2 independent CAN interfaces (both supporting J1939, CANopen, Raw CAN)
- 1 analogue camera interface PAL or NTSC formats
- Flexible user programming via CODESYS 3.5
- IP67 protection / NEMA 6

Product Documentation 057-248 – DSEM840 Installation and Operation Manual



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Specifications	
DC Supply	
Continuous Voltage Rating	8 V DC to 32 V DC continuous
Maximum Operating Current	< 1000 mA at 24 V without external loads
Maximum Current (after shutdown, with ignition off)	< 0.1 mA
Display	
Measurement	480 x 272 resolution 24 bit colour. Optically bonded.
Brightness	500 cd/m² (nit)
Inputs	
Quantity	4
Туре	Voltage 0 V to 5 V, 0 V to 10 V, 0 V to 32 V Current 4 mA to 20 mA Ratiometric Resistive 0 Ω to 3400 k Ω Frequency 5 Hz to 30 kHz Digital Postitive / Negative
Outputs	
Quantity	4
Туре	Digital - High side / low side 2 outputs configurable as Digital or PWM
Processor	
Туре	STM32H745 Dual Core
Speed	M7 400 MHz Clock Speed / M4 200 MHz Clock Speed
Flash	32 MB
RAM	64 MB

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Specifications	
Interfaces / Communications	
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 2.0 host (480 Mbit/s)
Temperature	
Operating Temperature	-30 ° C to +70 ° C / -22 ° F to + 158 ° F
Storage Temperature	-40 ° C to +80 ° C / -40 ° F to +176 ° F
Dimensions	
Overall (W x H x D) with buttons	131 mm x 208 mm x 56 mm / 5.15" x 8.2" x 2.2"
Panel Cut-Out (W x H)	163 mm x 98 mm (R 12 mm) / 6.42" x 3.86" (R 0.5")
Weight	< 1 kg 2.76 lb
Maximum Panel Thickness	6 mm / 0.2"
RAM Mountable	AMPS Hole Pattern

Related Products			
Programmable Controllers			
DSEM643	Programmable Controller (34 I/O)	M643-01	
DSEM640	Programmable Controller (68 I/O)	M640-01	
Expansion Devices			
DSE2170	CAN RTD / Thermocouple / Analogue Output Expansion Module	2170-01	
DSE2160 CAN Input / Output Expansion Module		2160-01	
Accessories			
DSEM840 Connector Harness		016-168	
Ethernet Cable		016-160	
USB Cable		016-161	

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Environmental Testing Standards	
CE Marking	
EN 61000-6-2	Electromagnetic compatibility (EMC) noise immunity
EN 61000-6-4	Electromagnetic compatibility (EMC) emission standard
BS EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use
E Marking	
UN/ECE-R10.05	E11
Water and Dust	
IEC 60529	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 \pm 2 °C Four test cycles (as above) to be applied followed by a Storage Period: 3 days @ 45 % to 55 % rh and +23 °C \pm 2 °C
Mechanical Tests	
EN 60068-2-6	Vibration Resonance Search Freq range: 10 Hz to 2 kHz Acceleration: 10 g
EN 60068-2-64	Vibration Random Freq range: 10 Hz to 350 Hz
ISO 16750-3	Test VII; Commercial vehicle, sprung masses Random vibration 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 Amplitude: 50 g Duration: 6 ms
ISO 16750-3	Bumps Amplitude: 30 g Duration: 6 ms; 24,000 shocks
Load Dump	
ISO 7637-2	151 V (Ri 1 Ω) 202 V (Ri 8 Ω)

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Connector A		
Pin	Description	
1	ECU Supply GND	
2	OUT H, L, PWM	
3	OUT H, L, PWM	
4	OUT H, L	
5	OUT H, L	
6	VREF OUT	
7	Battery	
8	CAN 1 H	
9	CAN 2 H	
10	AIN	
11	AIN	
12	Camera 1	
13	Ignition	
14	CAN 1 L	
15	CAN 2 L	
16	AIN	
17	AIN	
18	Camera 1 GND	

Connector Diagrams

Connector A				
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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	

Connector Diagrams

Ethernet



USB Host



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Technical Drawing









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