



## DSEM835 – 3.5” Programmable Display

Part Numbers: M835-01



### Overview

The DSEM835 is a 3.5” programmable display designed for use on vehicles and off highway machinery. The DSEM835 provides users with outstanding flexibility. The DSEM835 is configured using CODESYS 3.5.

### Key Features

- Robust HMI / programmable display specifically designed for mobile applications
- Optically bonded 3.5” colour screen for harsh environments
- Auto on / off heated display for use in low temperatures
- Powerful processor with Cortex M7 400 MHz clock speed
- 512 KB of SDRAM and 8 MB of flash storage
- 4 configurable inputs, digital and analogue capability
- 3 configurable digital outputs
- 1 VREF output (to power sensors)
- CAN interfaces, J1939 and Raw CAN
- PCAN interface for programming
- Flexible user programming via CODESYS 3.5
- IP67 protection / NEMA 6

### Product Documentation

057-313 – DSEM835 Installation and Operator Manual

NEMA6

IP67



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Specifications	
<b>DC Supply</b>	
Continuous Voltage Rating	8 V DC to 32 V DC continuous
Maximum Operating Current	< 80 mA at 24 V without external loads < 100 mA at 12 V without external loads
<b>Display</b>	
Measurement	320 x 240 resolution 24 bit colour. Optically bonded.
Brightness	500 cd/m <sup>2</sup> (nit)
<b>Inputs</b>	
Quantity	4
Type	Voltage 0 V to 10 V Current 0 mA to 20 mA Resistive 0 Ω to 3400 Ω Frequency (Input 1 only) 1 Hz to 150 Hz Digital Positive / Negative
<b>Outputs</b>	
Quantity	3
Type	Digital - High side
<b>Processor</b>	
Type	STM32h743
Speed	400 MHz Clock Speed
RAM	1 MB total 288 kB for CODESYS including application variables and fonts.
Non-volatile FRAM	16 kB for device settings and application persistent variables

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<b>Interfaces / Communications</b>	
<b>CAN</b>	CAN Interfaces 2.0 A/B, ISO11898 50 kbits/s... 1 Mbit/s SAE J1939 or Raw CAN
<b>Temperature</b>	
<b>Operating Temperature</b>	-40 °C to +85 °C / -40 °F to + 185 °F
<b>Storage Temperature</b>	-40 °C to +85 °C / -40 °F to +185 °F
<b>Dimensions</b>	
<b>Overall (W x H x D) with buttons</b>	112.5 mm x 115 mm x 49 mm / 4.43" x 4.53" x 1.93" (W x H x D)
<b>Panel Cut-Out</b>	82 mm (3.23 ") hole is suitable. If a punch or milling machine is available, adding 'flats' at 74 mm (2.91 ") spacing serves to prevent rotation of the device in the panel cut-out.
<b>Weight</b>	1 kg 2.20 lb
<b>Maximum Panel Thickness</b>	6 mm / 0.24"

Related Products		
<b>Programmable Controllers</b>		
<b>DSEM643</b>	Programmable Controller (34 I/O)	M643-01
<b>DSEM640</b>	Programmable Controller (68 I/O)	M640-01
<b>Expansion Devices</b>		
<b>DSE2170</b>	CAN RTD / Thermocouple / Analogue Output Expansion Module	2170-01
<b>DSE2160</b>	CAN Input / Output Expansion Module	2160-01
<b>Accessories</b>		
<b>Deutsch connector A, 18 way complete with pins</b>		007-850
<b>M835 / E050 connector harness</b>		016-176
<b>M835 / E050 configuration harness</b>		016-177
<b>PCAN USB PC configuration interface</b>		016-179

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Environmental Testing Standards	
<b>CE Marking</b>	
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
<b>Water and Dust</b>	
IEC 60529	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 60068-2-6	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
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)
EN 60068-2-27	Mechanical Shock Amplitude: 50 g Duration: 6 ms
<b>Load Dump</b>	
ISO 7637-2	151 V (Ri 1 Ω) 202 V (Ri 8 Ω)

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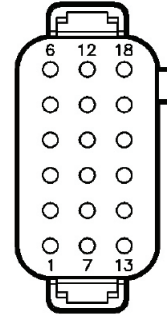


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Connector A			
Pin	Description	Comments	Switching Current
1		Batt GND	
2		CAN Screen	
3		CAN 1 L In	
4		CAN 1 H In	
5	IA004	AIN	
6	IA001	AIN	
7		VDC Batt +	
8		CAN Screen	
9		CAN 1 L Out	
10		CAN 1 H Out	
11		GND	
12	IA002	AIN	
13		VREF GND	
14	QA001	OUT H, L	1 A
15	QA002	OUT H, L	1 A
16	QA003	OUT H, L	1 A
17		VREF Out +ve	100 mA
18	IA003	AIN	

#### Connector Diagrams



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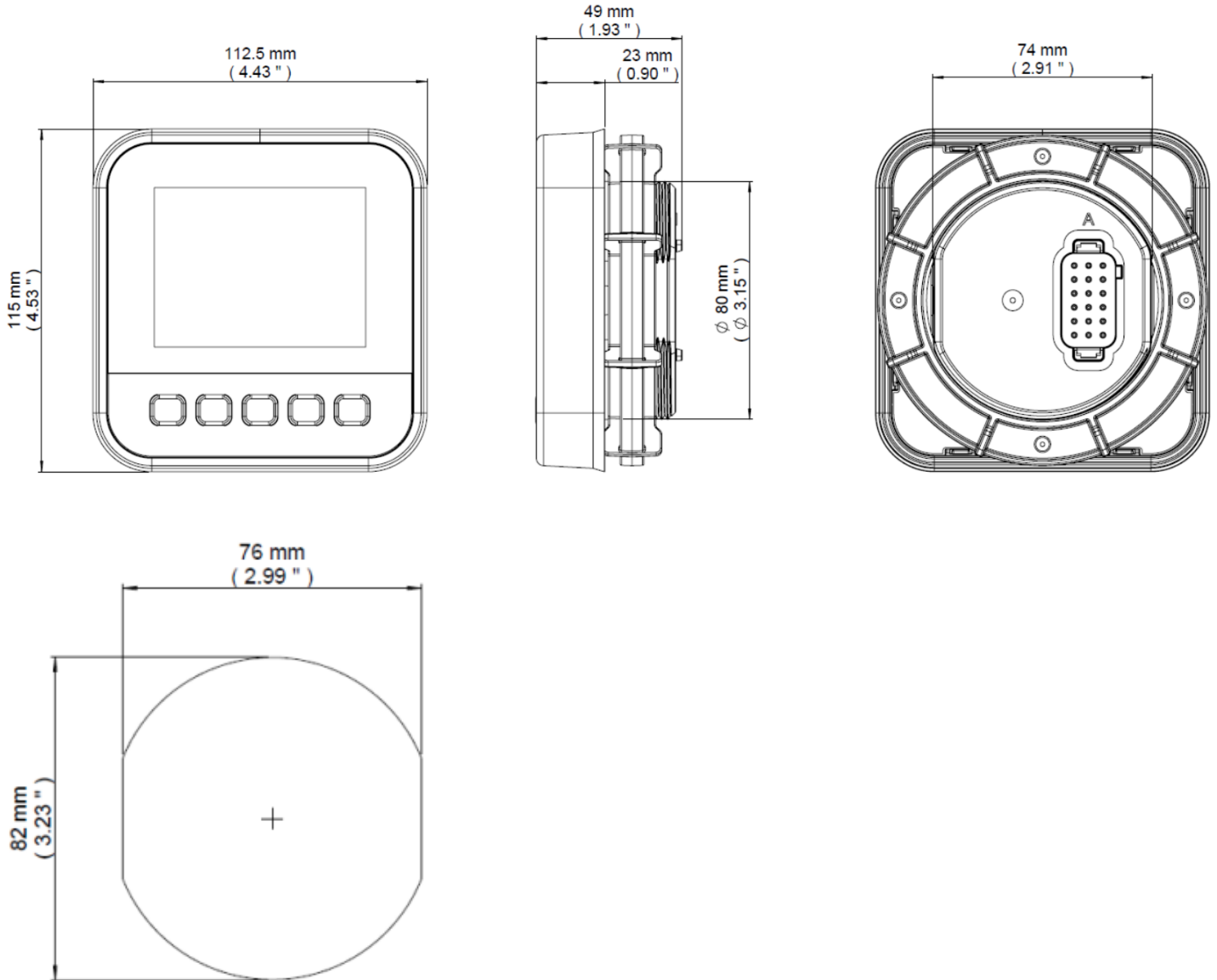
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### DSEM835 – 3.5” Programmable Display

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#### Technical Drawing



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