EAM113
GAC to Caterpillar Interface Module

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1 INTRODUCTION

The EAM113 interface module is designed to be used between the Caterpillar 3406 PEEC (Programmable Electronic Engine Control) and an external speed control unit such as a variable speed input or a Load sharing and Synchronizing system. The output of the EAM113 is a current sinking PWM signal that controls the CAT engine control.

The EAM113 has two inputs, a 4-20 mA input and a 5.0V DC input. The 4-20 mA input provides a wide range of PWM for maximum changes at the PEEC control. The 5.0 V DC input is a limited range PWM output around 50% duty cycle for trimming of the speed for such usages as GAC load sharing and synchronizing.

A single potentiometer adjustment allows the range of the input signal's effect on the PEEC control to be limited from maximum to minimum PWM duty cycle. The PWM frequency is fixed at 500 Hz. This can also be used with the Perkins 2800.

2 SPECIFICATIONS

POWER		
Input Impedance (Terminals 4 and 2)		100 K Ω
Maximum voltage (Terminals 4 and 2)		5 V DC
Input impedance (Terminals 3 and 2)		500K ohms
Output Impedance (Terminals 7 and 8)		< 100 Ω (current protected)
Nominal PWM Range (Terminals 7 and 8)		0 – 100 %
Transfer function	(4-20 mA) (5.0 V DC)	20 mA in = adjustable, 0-100% duty cycle 5.0V in = 50% duty cycle, adjustable
DC Supply (Terminals 1 and 2)		18 - 24 V DC
DC Supply Current (Terminals 1 and 2)		20 mA
PHYSICAL		
Temperature Range		–40° - 185 ° F [–40° to +85°C]
Dimensions		2.94 x 3.5 in [103.90 x 118.62]
Mounting		Vertical mounting preferred
Relative Humidly		up to 97%

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3 WIRING AND DIMENSIONS

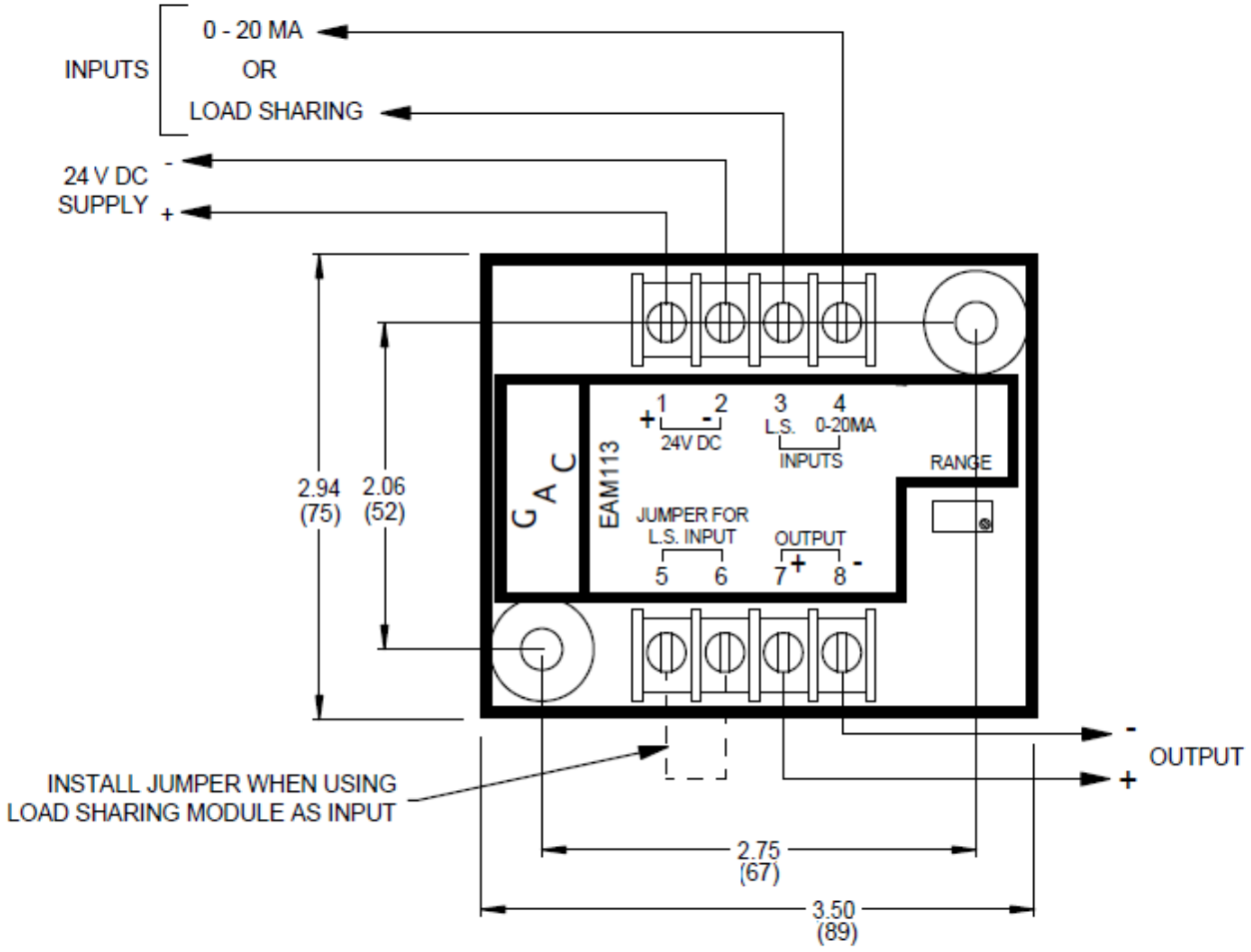
An overspeed shutdown device, independent of the governor system, should be used to prevent loss of engine control which may cause personal injury or equipment damage. A secondary shutoff device, such as a fuel solenoid, must be used.

Supply voltage for the interface is the same 24 V DC battery that supplies the CAT PEEC system.

The following wiring diagrams show the overall connections as well as the 4-20 mA setup for the Caterpillar 3406 PEEC. The ESD5130 or ESD5150 are the common speed control units used in this solution.

- For 4-20 mA input, supply the current signal to Terminal 4. Terminals 3, 5, and 6 are to remain open.
- For a 5.0V DC input (load sharing/ sync signal), connect to Terminal 3. Terminals 5 and 6 must be jumpered together. Terminal 4 must remain open.

OVERALL WIRING AND DIMENSIONS



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CATERPILLAR 4-20 Ma WIRING