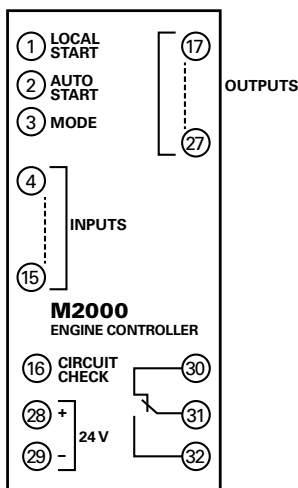


# M2000 SERIES

## Engine Control



### Wiring Diagram



### Description

The M2000 Engine Control controls start and stop of the engine, monitors and protects the engine during start and operation, and simultaneously indicates the engine and alarm status on the front of the unit. It has 9 shutdown/alarm inputs. It is controlling the cranking, fuel valve and stop solenoid of the engine. It is possible to configure the unit to perform up to 6 start attempts, with user configurable crank and rest periods. When the engine fires, cranking will be disconnected by activating the crank disconnect input from a tacho relay or from a direct measurement from a magnetic pick up. When stopping the engine, a generator circuit breaker trip is available for genset applications. A stop delay can be configured for cooling down the engine before stop. M2000 includes cable check of all sensor inputs. Basic configuration can be set by dip-switches on the rear of the unit.

Extended configuration is possible using a PC. Easy installation is ensured by means of clamping fittings, and plug-in connection terminals. The M2000 includes an RS485 interface enabling MODBUS RTU communication. The M2000 has been designed and tested for use in harsh environments.

### Features & Benefits

FEATURES	BENEFITS
<b>8 Alarm/shutdown inputs</b>	Monitoring of e.g. oil pressure, coolant temperature and engine speed
<b>Cable monitoring on sensor inputs</b>	Fail safe system
<b>Speed detection from magnetic pick-up</b>	No tacho relay required
<b>Type-approved by marine classification societies</b>	Applicable in marine control and alarm systems
<b>RS485 Modbus RTU</b>	Communication with HMI and SCADA systems

### Accessories



#### M0500 Tacho Detector

Reads engine speed from frequency of the generator output voltage. The reading is converted to a square wave signal and this signal is provided on a dedicated output.



#### K3452 RS232 Cable

For configuration from PC.

### Ordering Information

ORDERING NUMBER	CONTROL POWER
M2000.0130	12 V–24 Vdc, IP54 at front.

ACCESSORIES	REQUIREMENT
M0500	Optional
K3452	Optional

### Specifications

<b>Voltage Supply</b>	12-24 Vdc±30% (8-32 Vdc)
<b>Consumption</b>	Max. 180 mA
<b>Inputs</b>	7 normally open contacts; 1 tacho voltage; 1 pick-up
<b>Tacho Input</b>	Square or sine wave between 0 Vdc and supply voltage
<b>Pick-up Input</b>	Square or sine wave, range 2.5 Vac to 33 Vac
<b>Tolerance, Freq. Meas.</b>	±2%
<b>Frequency Range</b>	50 Hz to 10 kHz
<b>Outputs</b>	11 open collector outputs, max. 150 mA per channel
<b>Siren Relay Contact</b>	230 Vac/2 A; 30 Vdc/2 A, 30 W
<b>Tolerance, Delays</b>	± 2%
<b>LED Flash Frequency</b>	Slow flashing light: 1.25 Hz ±10%
<b>Quick Flashing Light</b>	5 Hz ±10%
<b>Programming</b>	16 dip-switches or via RS232 interface
<b>Communication</b>	RS485 interface
<b>Protocol</b>	MODBUS-RTU
<b>Baud Rate</b>	1200, 2400, 4800, 9600
<b>Parity</b>	None
<b>Data Bits</b>	8
<b>Stop Bits</b>	1
<b>Operating Temp.</b>	–20°C to +70°C
<b>Humidity</b>	95% RH at 20°C
<b>Vibration Test</b>	4 g RMS according to IEC 60068-2-64
<b>Approvals</b>	Certified by major marine classification societies
<b>Burn-in</b>	50 hours before final test
<b>Weight</b>	0.4 kg
<b>Dimensions</b>	<b>H</b> 144 mm (5.7"); <b>W</b> 144 mm (5.7"); <b>D</b> 35 mm (1.4")
<b>Panel Cut-out</b>	<b>H</b> 138 mm (5.4"); <b>W</b> 138 mm (5.4")
<b>Protection Degree-Front</b>	IP54 or IP32 (see Type Description)