Shutdown Unit M0600

Description and Use

M0695-23E

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Shutdown Unit M0600

The SELCO Shutdown Unit M0600 provides protection for any type of diesel or gas engines.

The unit has inputs for overspeed, low oil pressure and one more user defined parameter, which could be high water temperature or another user defined parameter. It also has an input to indicate that the engine is running and one to indicate that the engine is stopping.

The monitoring for low oil pressure is only active when the engine is running with a few seconds delay after detection of the running signal. This time delay can be defined via programming switches.

A normally open (NO) output relay can give a closing signal which can be used to stop the engine via it's stop coil and a normally closed (NC) relay can open in order to stop the engine via the fuel valve. The length of the relay activation time can be defined via programming switches.

The unit can function as a stand-alone protection unit, and is for DIN-rail mounting. Alternatively it can be mounted directly on the back of the SELCO Engine Controller M2000.

Shutdown Unit M0600

The SELCO Engine Controller M2000 is an advanced engine controller with many features. In some situations an extra back-up protection device is wanted for safety reasons, in addition to the protection provided by the M2000, and in such situation an ideal combination is the M2000 with the Shutdown Unit M0600 mounted on the back.

In normal situations the M2000 will take care of the protection. However if for some reason the M2000 fails to shut down the engine the M0600 will take care of the shutdown function. Two different power supplies can be used for the two units, providing an extra safety function.

The M0600 Shutdown Unit also provides space for containing the SELCO M0700-50 Universal PC Board. The M0700-50 is for use with the SELCO Alarm Annunciator M1000, the SELCO Engine Controller M2000 and the SELCO Emergency Controller M2100.

The M0700-50 is a general useable auxiliary printed circuit board for easy soldering of resistors, diodes or other circuitry to be used on both inputs and outputs on the above mentioned units. The board includes a number of resistors of 3.3 KΩ, which can be used on the inputs of the Engine Controller M2000 and the Emergency Controller M2100 to form a pre-warning input through a normally closed contact (see separate description of the controllers).

Input terminals:

Terminal:

1	OVS	Overspeed
2	SPA	Spare
3	LOP	Low Oil Pressure
4	RUN	Running (Crank Disconnect)
5	STP	Stop (Engine Stop)
6	+ 24V	Supply Voltage (+)
7	-	Supply Voltage (-)
8	-	Supply Voltage (-)

Description:

1. OVS Overspeed:

   NO contact to minus (delay: 40 msec.). If OVS is closed (connected to minus) the stop sequence will be activated.

2. SPA Spare:

   NO contact to minus (delay: 100 msec.).

   For programming pin 8 off:
   If SPA is closed and terminal 5 (STP) not closed (by another controller as the SELCO Engine Controller M2000) the stop sequence will be activated.

For programming pin 8 on:
If SPA is closed the stop sequence will be activated.

3. LOP Low Oil Pressure:

NO contact to minus (delay: 500 msec). Oil pressure is only monitored after terminal 4 (RUN) has been closed and a time delay T1 has expired. T1 is defined by programming pins 1-3. If LOP is closed in such a situation the stop sequence will be activated.

4. RUN Running (Crank Disconnect)

NO contact to minus. When closed indicates that engine is running. It could be a “crank disconnect” signal at reaching 33 % of nominal speed.

5. STP Stop (Engine Stop)

NO contact to minus. When closed indicates that engine is stopping. It could be output 27 (Stop Solenoid) from the Engine Controller M2000.
This is an input. This is not the shut down output

Shutdown relay:

Terminal

1	NO	Normally open contact
2	COM	Common
3	NC	Normally closed contact

Stop sequence:

They relay will be activated for a period of T2 seconds. T2 is defined by programming pins 5-7. RUN must have been open (indicating machine not running) before a new stop sequence can be activated.

Programming switches:

pin 1 |	Definition of T1 in seconds, time before supervision of LOP
pin 2 |	(Low Oil Pressure)
pin 3 |	
pin 4	Not defined
pin 5 |	Definition of T2 in seconds, time period for the relay to be
pin 6 |	activated during stop
pin 7 |	
pin 8	Coding of SPA (Spare)

Definition of times T1 and T2 in seconds:

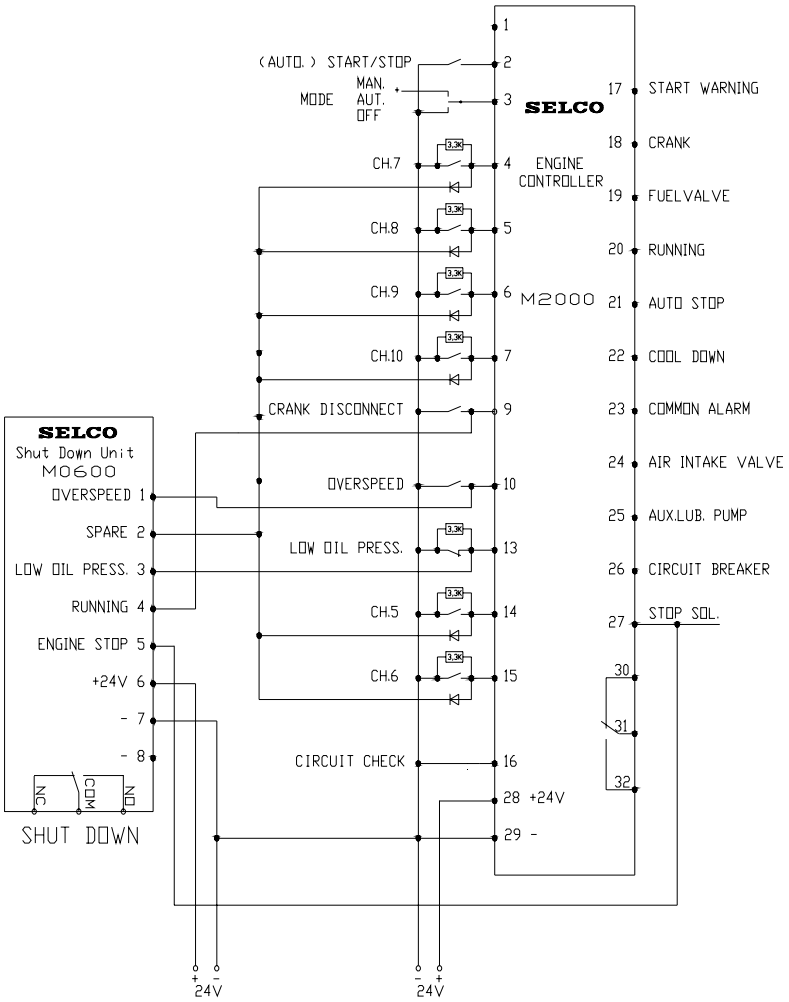
pin 1	pin 2	pin 3	T1	pin 5	pin6	pin7	T2
off	off	off	0 secs.	off	off	off	0 secs.
on	off	off	4 secs.	on	off	off	20 secs.
off	on	off	6 secs.	off	on	off	35 secs.
on	on	off	8 secs.	on	on	off	50 secs.
off	off	on	10 secs.	off	off	on	63 secs.
on	off	on	12 secs.	on	off	on	75 secs.
off	on	on	13 secs.	off	on	on	84 secs.
on	on	on	14 secs.	on	on	on	93 secs.

The M0600 mounted on the rear side of the M2000 Engine Controller

Example of connection to the M2000

M0600	M2000
1 OVS	10 Overspeed
2 SPA	14 High Water Temperature
3 LOP	13 Low Oil Pressure
4 RUN	9 Crank Disconnect
5 STP	27 Stop Solenoid

Relay: Fuel-valve — COM-NC in series with output 19
Stop Coil — COM-NO in parallel with output 27



Type selection

M0600-00	Delay for SPA: 100 msec.	Delay for LOP: 500 msec.
M0600-01	Delay for SPA: 1.5 sec.	Delay for LOP: 1.5 sec.

Dimensions