

MUIRHEAD®
PROTECTION SYSTEMS

**ENGINE SHUTDOWN CONTROL KIT
(EXCESS IDLE)**

PART No: 4683

**Manufacturing mining and industrial products to enhance
productivity, safety & efficiency on mobile mining,
earthmoving & industrial equipment**



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NOTES

PRODUCT OVERVIEW

The 4683 is a unique product that incorporates the following features:

1 Standard Idle down mode.

When the key is switched off the machine will idle for a preset period prior to the machine shutting down. A separate toggle switch is supplied to shut the machine off if in the idle down cycle.

2 Engine shutdown if machine idles for extended period with the park brake applied.

The system has a frequency sensor that is adjusted to operate when the vehicle is sitting in an idle mode. After a preset time of the vehicle idling, a 1 minute to shutdown indicator is initiated. At the same time that this is initiated, the lights are switched off to reduce battery consumption at idle and to ensure that the lights do not discharge the batteries when the engine is shut down.

3 Switches lights off 1 minute prior to shutting down the engine when in idle down modes. (If used)

Reduces load on charging system and ensures that the batteries do not discharge once the machine is shut down for an extended period with the lights switched on.

4 An optional relay box can be supplied to control various lighting circuits part (3362)

This device is controlled via the circuit described above. It is optional and it depends on the OEM electrics as to whether it is required.

INSTALLATION INSTRUCTIONS

- 1 Mount the control unit in a suitable location.
- 2 Run the wiring loom to the dash and circuit breaker areas.
- 3 Connect wiring as follows:

WIRING CONNECTIONS

12 Pin Plug Connections:

Pin 1	Red 4mm	To battery supply at key switch.
Pin 2	Black 4mm	To 0 V earth
Pin 3	Orange 4mm	Disconnect existing ignition wires from the ignition terminal at the key switch and then connect the orange Pin 3 wire to the ignition terminal at the key switch.
Pin 4	Pink 4mm	Connect to engine shutdown switch (N.C.).
Pin 5	Yellow/blue 4mm	Connect to the ignition wires previously disconnected from the key switch.
Pin 6	Green 4mm	Connect to the 1 minute to engine shutdown LED +ve.
Pin 7	Purple 4mm (Optional)	Only to be used on machines using the C terminal at the key switch for auxiliary control after shutdown, e.g. steering bleed-down. Disconnect existing wires from the C terminal at the key switch and connect to the purple Pin 7 wire. No wires are to be connected at the C terminal at the key switch.
Pin 8	Yellow 4mm	Connect to the idle cycle LED +ve.
Pin 9	Grey 4mm	Connect to the grey wire from relay box 3362 or OEM lighting circuit
Pin 10	White 4mm	Connect to the frequency sense point.
Pin 11	Brown 4mm	Connect to the normally open contacts of the OEM park brake switch (Switching -ve).
Pin 12	Blue 4mm	Connect to the normally open contacts of the OEM park brake switch (Switching -ve).

MODE 1: DIPSWITCH No. 1 OFF

OPERATION (2)

Turn the ignition switch on and start the engine as per normal. With the machines park brake applied, neutral gear selected and the engines RPM not sensed within the pre-set time cycle. The 1 minute to shutdown LED will flash and the machine's engine will shutdown. The 1 minute to shutdown LED will then stop flashing.

If the park brake is released or the engines RPM raised, the system will reset.

The machines engine will shutdown if the ignition switch is switched off.

ENGINE SHUTDOWN SWITCH

This will shut off the engine immediately. The key switch will need to be switched off, and then back on again to reset the system.

TIME CYCLE SETTINGS

To change the time cycle settings for the low engine RPM

	3 minute	5 minute <i>Factory Set</i>	10 minute	15 minute
SW 3	OFF	ON	OFF	ON
SW 4	OFF	OFF	ON	ON

To change the time cycle settings for the shutdown warning LED

	10 seconds	20 seconds	30 seconds	60 seconds <i>Factory Set</i>
LINK 8	Open	Closed	Open	Closed
LINK 9	Open	Open	Closed	Closed

MODE 2: DIPSWITCH No. 1 ON

THIS MODE IS AN OPTION IF A TURBO IDLE DOWN MODE IS REQUIRED

OPERATION (1)

Turn the ignition switch on and start the engine as per normal. To stop with a timed delay, turn the ignition switch to the off position, the engine will continue to run for the pre-set time cycle with the yellow idle cycle LED on. With 1 minute to shutdown, the idle cycle LED will turn off, the 1 minute to shutdown red LED will flash and at the end of the timed cycle the engine will shut off and the 1 minute to shutdown red LED will stop flashing.

OPERATION (2)

Turn the ignition switch on and start the engine as per normal. With the machines park brake applied and the engines RPM not sensed within the pre-set time cycle. The 1 minute to shutdown LED will flash and the machines engine will shutdown. The 1 minute to shutdown LED will then stop flashing.

If the park brake is released or the engines RPM raised, the system will reset.

ENGINE SHUTDOWN SWITCH

This will shut off the engine immediately. The keyswitch will need to be switched off, and then back on again to reset the system.

TIME CYCLE SETTINGS

To change the time cycle settings for the turbo timer engine shutdown

	1 minute	3 minute	5 minute <i>Factory Set</i>	8 minute
LINK 6	OPEN	CLOSED	OPEN	CLOSED
LINK 7	OPEN	OPEN	CLOSED	CLOSED

To change the time cycle settings for the low engine RPM

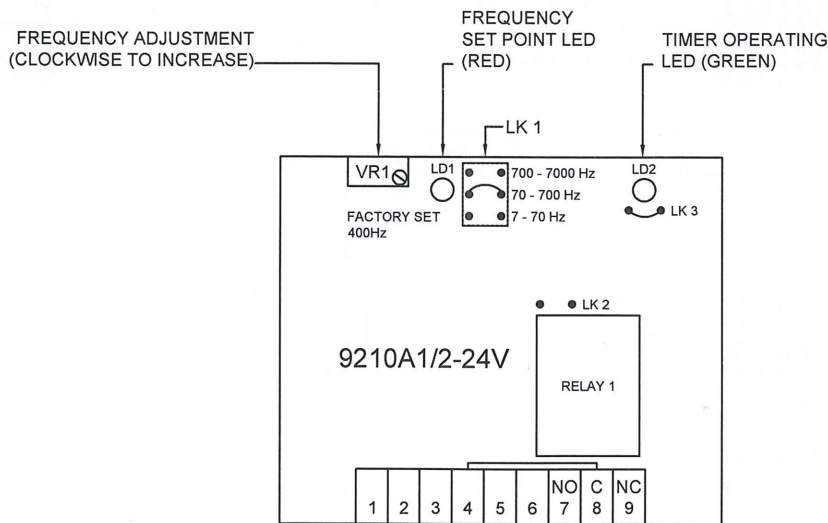
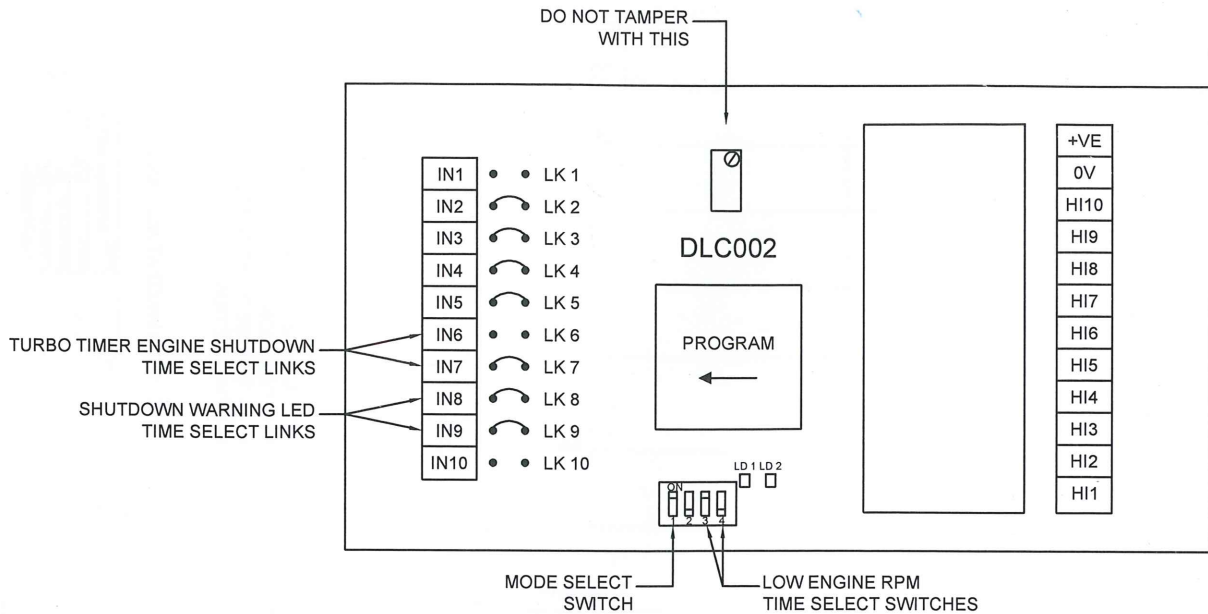
	3 minute	5 minute <i>Factory Set</i>	10 minute	15 minute
SW 3	OFF	ON	OFF	ON
SW 4	OFF	OFF	ON	ON

To change the time cycle settings for the shutdown warning LED

	10 seconds	20 seconds	30 seconds	60 seconds <i>Factory Set</i>
LINK 8	Open	Closed	Open	Closed
LINK 9	Open	Open	Closed	Closed

SETUP AND CALIBRATION

EC-24-DSU-01 & EC-24-DSU-05 (1099) & (7598) 24V CONTROL & 24V DELAYED CONTROL



LOW RPM FREQUENCY ADJUSTMENT:

REMOVE COVER FROM BOX, WIND POTENTIOMETER ON CIRCUIT BOARD TO ADJUST SWITCHING OF HOURMETER TO DESIRED ENGINE REV RANGE. WHEN ADJUSTED, REFIT COVER.

TECHNICAL INFORMATION:

TO HAVE A 6 MIN 40 SEC TIMER IN CIRCUIT, LK 3 MUST BE LINKED AND LK 2 MUST BE OPEN. (FACTORY SET). THIS TIME CYCLE OCCURS DURING THE LOW ENGINE RPM OPERATION AND IS ADDITIONAL TO THE FACTORY SET TIME OF 5 MINUTES. (TOTAL FACTORY TIME CYCLE SETTING FOR THE LOW ENGINE RPM WILL BE 11 MIN 40 SEC).

TO HAVE NO TIMER IN CIRCUIT, LK 2 MUST BE LINKED AND LK 3 MUST BE OPEN.

TO SELECT FREQUENCY RANGE, LINK LK 1 TO CORRECT RANGE.



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DESC: SETUP AND CALIBRATION	APN #: 1099 & 7598	STOCK CODE: EC-24-DSU-01 / 05
DESIGNED BY: BT	CHECKED BY: BT	
DRAWN BY: RH	DATE: 30/06/04	

REV	DETAILS	DATE	BY
3	LK2 REMOVED & LK3 LINKED AND 6 MIN 40 SEC NOTE ADDED	06/05/09	JR

DRAWING NUMBER: 191z	SIZE: A4
APPROVED	

NOTES



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