Storm guard

ML-100
OPERATIONS MANUAL

PART NUMBER: SG07230010
REV: A

Component Technology

A DIVISION OF
Certified Power Inc.

COMPONENT TECHNOLOGY
ML-100

INSTALLATION PROCEDURE
   Mount the ML-100 unit
   Connect the WIRING HARNESS
   Make sure power switch on the ML-100 is in the OFF (down) position
   Connect the 9-Pin connector to the back of the ML-100

OPERATION PROCEDURE
   The ML-100 has only two user accessable controls: the power switch and the application rate control. When the power switch is moved to the ON (up) position the amber backlight for the application rate control will be illuminated. The power switch affects the internal circuitry as well as voltages to the valve. The application rate control adjusts the drive to the valve. Depending on the configuration, the lowest application rate setting (fully counter clockwise) may be an OFF condition or the minimum preset drive level. The highest application rate (fully clockwise) will be at the maximum preset drive level. A LOW LEVEL condition is indicated by the red LED.

CHANGING PRESET SETTINGS
   Necessary Equipment
      Serial Terminal or PC Running Terminal Emulator Software
      Programming Cable

   Communications Protocol for Serial Terminal
      baud rate   1200
      data bits   8
      parity   none
      stop bits   1
      local echo on

   Turn the power switch to the OFF position

   Connect the programming cable between the ML-100 and the vehicle connector

   Connect the DB9 connector to the serial terminal

   Turn the Application Rate control fully Counter Clockwise

   Turn on the power for the serial terminal and the ML-100

TO CHECK VERSION NUMBER OF SOFTWARE
   Press 'v' then ENTER
   The screen will display 'V' then the software version number

TO CHANGE THE FREQUENCY SETTING
   The frequency is factory set at 50 Hertz
   Pressing 'f' then ENTER will display the current frequency
   Set the frequency according to valve manufacturers specifications.
   Many proportional valves will operate as well or better at frequencies less than the manufacturers specification.

Press 'f' then the desired frequency in Hertz (30 - 180), then ENTER

TO ADJUST THE VALVE TRIM

The valve trims are factory set at 15% (min) and 95% (max). You will likely need to reset them.

Make sure the hydraulic system is running and completely warmed up. Since the DC resistance of the typical proportional valve coil changes with temperature it should be at its normal operating temperature when making valve trim adjustments.

First reset minimum and maximum valve trims to 2% and 98% respectivly.
To do this press 'm' then '2' then ENTER, the screen will display 'M2'
Then press 'x' then '9' then '8' then ENTER, the screen will display 'X98'

TO SET MINIMUM TRIM

Pressing 'm' then ENTER will display the current minimum duty cycle
Turn the Application Rate control until the valve just begins to flow oil (or when the shaft of the hydraulic motor just begins to turn).
Press 'd' then ENTER
The screen will display 'D' then the current duty cycle, the min should be set to this level
To set the min, press 'm' then the min duty cycle (found previously), then ENTER

TO SET MAXIMUM TRIM

Pressing 'x' then ENTER will display the current maximum duty cycle
Adjust the Application Rate control until the flow is maximized, but try not to set the max too high. Overdriving the coil will cause unwanted heating.
Press 'd' then ENTER
The screen will display 'D' then the current duty cycle, the max should be set to this level
To set the max press 'x' then the max duty cycle (found previously), then ENTER

TO CHANGE ZERO ENABLE

If the zero enable feature is disabled the ML-100 will operate at the min trim level when the Application Rate control is fully counter-clockwise
If the zero enable feature is enabled the ML-100 will be OFF when the Application Rate control is
fully counter_clockwise
Pressing 'z' then ENTER will display the status of the zero enable feature: Z1 = enabled, Z0 = disabled
To enable, press 'z' then '1' then ENTER.
If you wish to disable this feature press 'z' then '0' then ENTER.
If this feature is disabled the output will be at the previously set min level when the Application Rate control is fully Counter_Clockwise. The ML-100 is shipped with this feature enabled.

TO CHECK THE SOFTWARE VERSION

Pressing 'v' then ENTER will display the current software version

FUSE REPLACEMENT

Disconnect the connector from the back of the unit
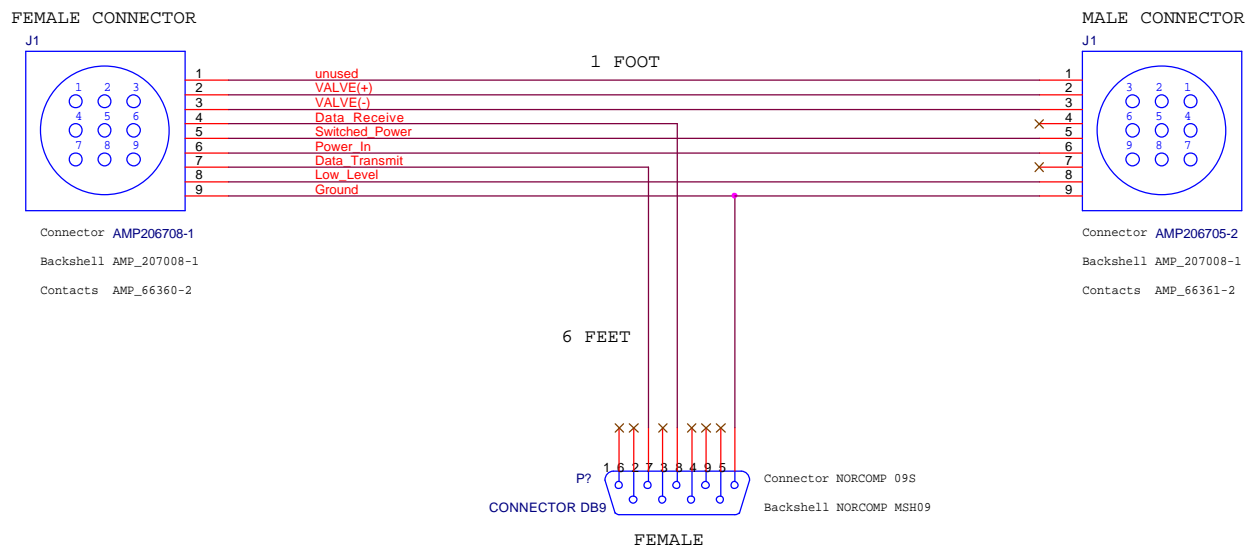Remove the four screws fastening the front plate to the enclosure
Remove the faceplate
Grasp the fuse (red component protruding from board mounted to enclosure) and remove
Replace with 10 Amp automotive style (ATO) fuse

9 Pin Round Connector pin out

Pin	Description
1	not connected
2	Valve (+)
3	Valve (-)
4	Serial Data Receive
5	Switched Power
6	Power in (+12V)
7	Serial Data Transmit
8	Low Level Signal
9	Ground

PROGRAMMING CABLE FOR ML-100

FEMALE CONNECTOR

J1

1 FOOT

Pin	Signal	Pin
1	unused	1
2	VALVE(+)	2
3	VALVE(-)	3
4	Data_Receive	4
5	Switched_Power	5
6	Power_In	6
7	Data_Transmit	7
8	Low_Level	8
9	Ground	9

MALE CONNECTOR

J1

Connector AMP206708-1

Backshell AMP_207008-1

Contacts AMP_66360-2

Connector AMP206705-2

Backshell AMP_207008-1

Contacts AMP_66361-2

6 FEET

P?

CONNECTOR DB9

Connector NORCOMP 09S

Backshell NORCOMP MSH09

FEMALE

VEHICLE CONNECTIONS

J1

+12V Vehicle Power

Pin	Wire	Signal
1		
2	BLU 14	VALVE(+)
3	WHI 14	
4		
5	2W/WHI	Switched_Power
6	RED 14	
7		
8	2W/BLK	Low_Level
9	BLK 14	

S1

PRESSURE_SWITCH

S2

LOW_LEVEL

M1

A

VALVE_OR MOTOR

Vehicle Ground

Connector AMP206708-1

Backshell AMP_207008-1

Contacts AMP_66360-2