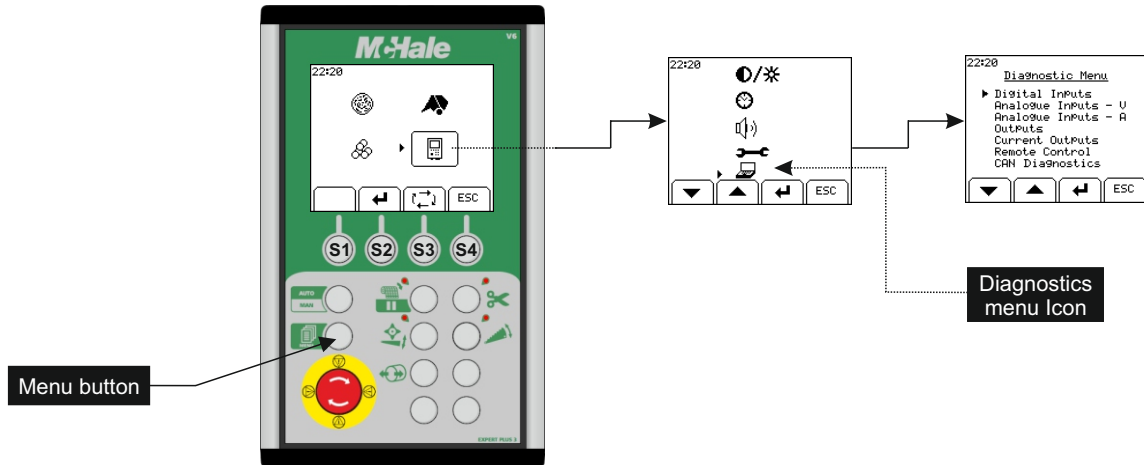


The diagnostic menu on the Expert Plus 3 control unit can be used to check the status of all sensor inputs and output drivers. This is a useful tool when fault finding.



- Switch on the control unit.
- Press the 'Menu' button to view the main menu options.
- Using the navigation buttons S1-S4 enter the Control Unit Menu (Control Unit Icon).
- Press the down arrow button 3 times until the pointer is next to the Technician Menu option (Spanner icon).
- Press and hold the down arrow button for 5 seconds. The Diagnostics Menu option will appear (Laptop computer Icon).
- Press the 'Enter' button to enter the diagnostics menu.

DIGITAL INPUTS

The first diagnostic screen shows the status of all the Digital Inputs. Each number represents a different sensor on the V6 baler. Input status can be either OPEN or CLOSED.

CLOSED - An input should be closed when that sensor is detecting the target. In the case of the proximity sensors used on the V6, the metal target is detected and the yellow LED on the sensor should be illuminated. (Input 1 on Fig.A is shown closed).

OPEN - An input should be open when that sensor is not detecting a target. (Inputs 2-12 on Fig.A are shown open).

- 1 - Knives Up Sensor 2** [Selectable Knife Option only]
- 2 - Net Pulse Sensor**
- 3 - Chamber Lock Sensor*** [Serial 801350-808431 only]
- 4 - Knives Up Sensor**
- 5 - Chamber Lock Left Sensor** [Serial 808432 onwards]
- 6 - Chamber Lock Right Sensor** [Serial 808432 onwards]
- 8 - Floor Position Sensor**
- 9 - Net Cut Sensor**
- 10 - Bale Kicker Sensor**

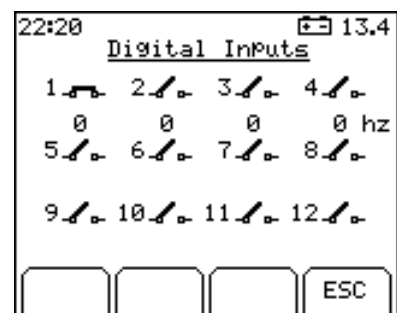


Fig. A

*Input closes when both left + right chamber lock sensors are detecting their targets.

ANALOGUE INPUTS - V

The second diagnostic screen shows the status of all the Voltage Analogue Inputs which have an input range of 0-5 Volts. Each number represents a different sensor on the V6 baler.

15 - Knife Pressure Sensor

0 Volt = 0 Bar Knife Pressure
5 Volt = 250 Bar Knife Pressure

17 - Bale Diameter Sensor

Should be 1 Volt when chamber is closed and empty.
The sensor can be adjusted on the machine to set this.

18 - Density Pressure Sensor

0 Volt = 0 Bar Density Pressure
5 Volt = 250 Bar Density Pressure
(serial 801350-805000 only)

19 - Bale Shape Indicator Sensor

Uses a rotary angle sensor (serial 801350-805000 only).
Normally reads 2.5 Volts when belts are centred.

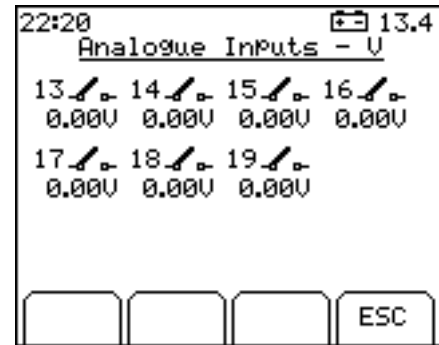


Fig. B

ANALOGUE INPUTS - A

The third diagnostic screen shows the status of all the Current Analogue Inputs which have an input range of 0-20mA. Each number represents a different sensor on the V6 baler.

Standard Bale Shape Indicator (Ultrasonic)

19 - Bale Shape Indicator Sensor

Uses an ultrasonic sensor to measure the side movement of the belt (from serial 805001 onwards).
Normally reads approximately 5.85mA when belts are centred.

Optional Bale Shape Indicator (Load Cell)

16 - Bale Shape Indicator Sensor (Left)

19 - Bale Shape Indicator Sensor (Right)

Uses two load cell sensors to measure the load on each side of the chamber. When the chamber is empty and the chamber openings are free from lingering crop, these normally read ~8.5mA.

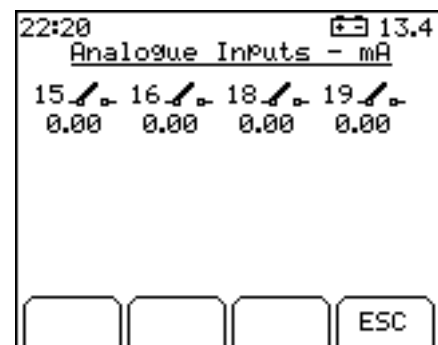


Fig. C

OUTPUTS

The fourth diagnostic screen is used to switch each individual Output ON/OFF. This is useful for testing outputs that can't normally be switched individually from the control unit in MAN mode. (Example: Knife or Floor diverters).



CAUTION: EXERCISE CARE WITH THIS DIAGNOSTIC MENU AS UNEXPECTED OUTPUTS CAN BE ACTIVATED. I.E. NET CUT MOTOR.

Use the left/right arrow button to highlight the desired output number, then hold down either arrow button to activate that output.

- 1 - Roller Engage Solenoid**
- 2 - Net Clutch**
- 3 - Net Brake**
- 5 - Master Diverter Solenoid**
- 6 - Optional External Additive/Beeper/Beacon**
- 7 - Net Cut Motor**
- 8 - Density Release Solenoid**
- 9 - Floor Diverter Solenoid**
- 10 - Master Diverter Solenoid**
- 12 - Knife Diverter Solenoid**
- 13 - 12 Volt Supply for Sensors**
- 14 - 12 Volt Supply for Sensors**

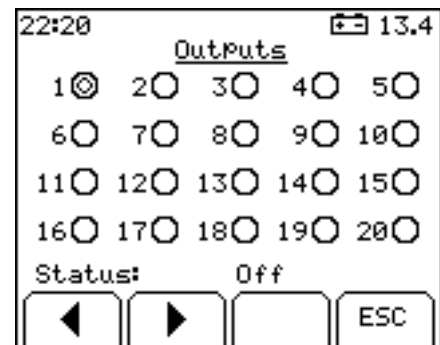


Fig. D

CURRENT OUTPUTS

The fifth diagnostic screen is used to switch on each proportional output to a set %Duty. The current drawn will also be displayed. This is useful for testing proportional outputs.



CAUTION: EXERCISE CARE WITH THIS DIAGNOSTIC MENU AS UNEXPECTED OUTPUTS CAN BE ACTIVATED. I.E. ROLLER ENGAGE.

Use the toggle button to highlight the desired output number, then increase or decrease the %Duty using the plus and minus keys.

- 3 - Net Brake**
- 8 - Density Release Solenoid**

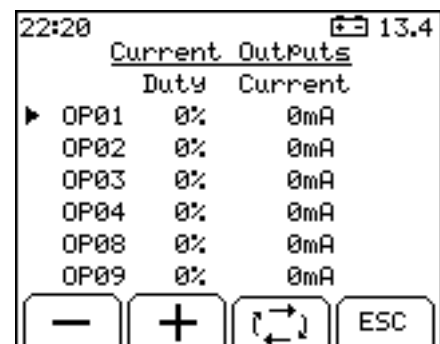



Fig. E

CAN DIAGNOSTICS

This diagnostic screen is only used if the twine option is fitted to the baler. The CAN Diagnostics screen can be used to test the sensors and power the motors on the twine unit.

 **CAUTION: MAKE SURE ALL PERSONS ARE OUTSIDE THE MACHINE DANGER AREA WHEN USING THIS MENU. UNEXPECTED MACHINE FUNCTIONS MAY BE ENABLED.**

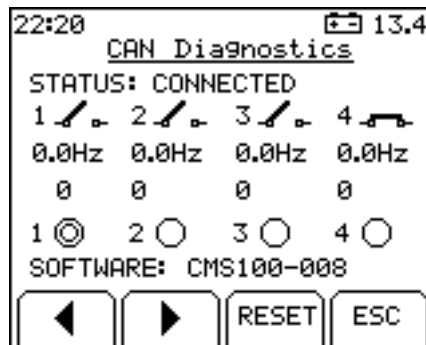


Fig. F

STATUS

This shows whether the CAN Bus module is **CONNECTED** or **NOT CONNECTED** to the control unit.

DIGITAL INPUTS

There are four digital inputs used on the twine baler:

- 1 - Twine Feed Sensor 1 (Left Hand Side)
- 2 - Twine Feed Sensor 2 (Right Hand Side)
- 3 - Track Home Sensor
- 4 - Track Position Sensor

The switch icon displays whether the input is closed or open. Input 4 is shown closed in the above. Below this shows the frequency of the input signal. Below this again is a simple counter. It adds 1 every time the input closes. Press the third soft key to reset the counters.

DIGITAL OUTPUTS

There are three digital outputs used on the twine baler to operate the two motors.

- 1 - Feed Motor
- 2 - Track Motor Forward (towards edge of bale, serial 801350-805000)
- 3 - Track Motor Reverse (towards centre of bale)
- 4 - Track Motor Forward (towards edge of bale, serial 805001 onwards)

Press soft key 1 or soft key 2 to select an output. Then press and hold the soft key to switch the selected output on. The output will show as a solid black dot when on. When the soft key is released the output switches off.

SOFTWARE

The version of software installed on the HBM CAN Bus module is shown here.