doc. no. FT202M1x

**FT202 Operation Manual**

## General

The FT202 is designed to be both a tester and demo unit for spreader controls. Using the proper interface cable the FT202 will operate with the following spreader controls; CS100, AS300, 24P

For discussion purposes in this manual, the spreader control that's connected to the FT202 will be referred to as the device under test (DUT).

The FT202 provides (3) 10 ohm resistive loads, one for each DUT output. The FT202 reads the PWM duty cycle % for each channel and responds with a spinning LED wheel. In response to the spinning wheel the FT202 feeds back to the spreader control a pulse signal proportional to the wheel speed. This feedback signal simulates the closed loop sensor typically used on the conveyor speed control.

The FT202 allows you to re-direct each of the (3) spreader outputs from the normal 10 ohm load to a internal 5 ohm load. This heavier load has an amp meter in its path, allowing the operator to directly verify the actual current drive for each DUT output. The operator can optionally select to use an external load such as an actual valve coil instead of the internal 5 ohm load. Two terminal posts are provided for the external load connection. The amp meter remains in series with the external load when selected.

Other features include a series of two panel switches to simulate special functions such as remote Blast, float switch, etc. The FT202 also includes a MPH simulator and a signal type switch for both VRM (AC) and World/Hall (DC) types.

## Enclosure

The FT202 enclosure uses a split case construction. The four wing-clips are loosened to release the cover. The cover can be mounted in either direction. The cover may also be placed under the enclosure to raise the unit up for ease of use. The power cord and various interface cables are normally stored in the empty area within the cover. The ac cord connects into the power receptacle located on the right had side of the enclosure. The FT202 is powered from 120 vac.

**Front Panel**

The **power on/off** switch, lamp and fuse are located in the upper left corner of the panel. This switch is used to apply the 12 vdc to the tester and the DUT. The fuse is rated at 8 amp fast-blo. The internal 12vdc power supply is over current protected and the fuse is for instantaneous shorts that can occur with some spreader controls. The LED verifies the 12vdc is present. If the LED is off the fuse is likely blown or the 12vdc supply is in crowbar mode, in which case remove the DUT from the interface cable and cycle the power switch to reset the power supply.

The **MPH** sensor switch and speed adjustment pot. are located just below the power switch. Select VRM for simulating ac sensors and use Hall for dc sensors. The center position is off and can be used to test a spreader when the mph signal fails. The speed adjustment pot. controls the frequency of the mph output signal going to the DUT. Turning the pot. full ccw will turn the mph signal off ( frequency = zero ). The counts per mile (CPM) calibration of the DUT will determine the maximum mph. The speed pot. full cw = 460 hertz.

max MPH = 1656000 / CPM ex. CPM = 30,000 then max. MPH = 55

The two **auxiliary switches** are used to simulate the remote inputs used by many spreader controls. The two switches are located in the center of the panel. The switch handle is positioned up to make the respective DUT input active. This switches ground each input (active low). The five switches are; remote Pass, two speed rear axle, liquid tank Float switch

The **three position selector** switch is used to re-direct each of the three DUT outputs thru the **amp meter** and into the internal 5 ohm load or and external load. Note, one of the three output channels is always directed thru the amp meter and 5 ohm load. If the operator does not want to use the internal load, position the selector switch to an unused channel, typically this is the auxiliary channel (least often used). If an actual valve coil is used (external load) the amp meter can be used to pre-set the drive currents to the valve manufactures spec

If the operator want to create an open circuit test, select the channel with the three position switch and then select an external load but do not connect an actual load to the remote terminal posts..

The **valve supply** LED's are use to verify the valve supply leaving the DUT is present, since some spreader controls have protection devices in the valve supply line.

**FT202** Cable Pin out for CS1, AS3

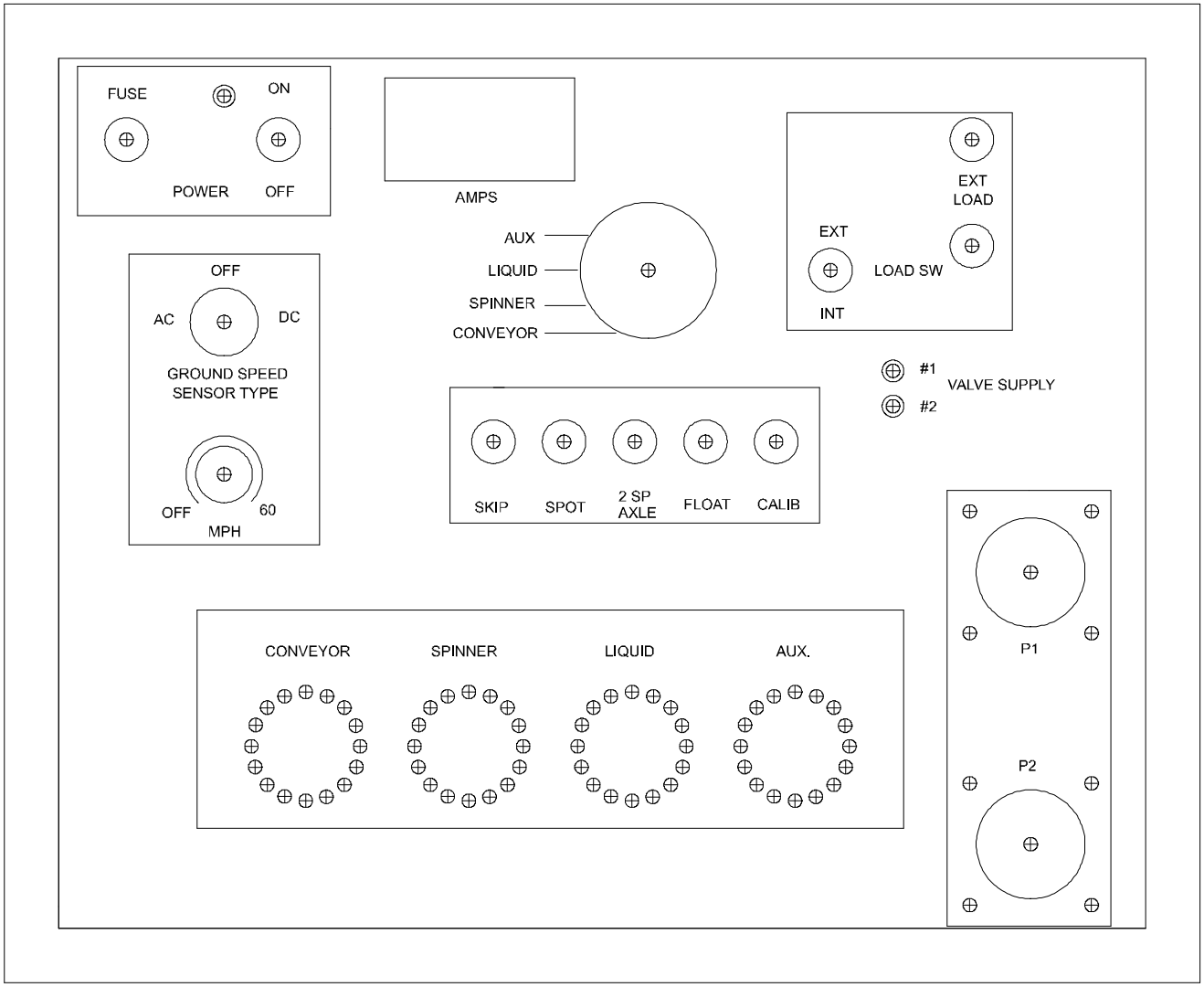
-1 Auger feedback (or option)
-2 Valve supply
-3 Sensor supply (or liquid enable)
-4 Spinner valve
-5 Option input
-6 +12 vdc vehicle supply
-7 Conveyor valve
-8 MPH input signal
-9 Ground

**FT202 Internal settings (factory use only)**

- Using a DL104 with a preloaded comm routine.
- Connect the 3 pin plug to J3 on the FT202
- Scroll thru the various displays using the up/dn keys
- Send and receive each variable
- Use inc/dec key to change data value

| Displays by address no. | | factory settings |
|---|---|---|
| 1 | test switch inputs | read only |
| 2 | read mph pot | read only |
| 3 | set max mph freq | [TBD] hz |
| 4 | set aug max pwm | [TBD] % |
| 5 | set aug min pwm | [TBD] % |
| 6 | set aug fb max freq | [TBD] hz |
| 7 | set spn max pwm | [TBD] % |
| 8 | set spn min pwm | [TBD] % |
| 9 | set spn fb max freq | [TBD] hz |
| 10 | set liq max pwm | [TBD] % |
| 11 | set liq min pwm | [TBD] % |
| 12 | set liq fb max freq | [TBD] hz |
| 13 | set aux max pwm | forth channel not available on FT202 |
| 14 | set aux min pwm | |
| 15 | set aux fb max freq | |
| 16 | read pwm input | read only aug spn liq aux |
| 17 | read aug fb out | read only |
| 18 | read spn fb out | read only |
| 19 | read liq fb out | read only |
| 20 | read aux fb out | read only |
| 21 | checksum | |
| 22 | receive all settings | |
| 23 | special test screen | |
| 24 | ID = 8 | |

**FT202 Front Panel Layout**

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