

#12057

Worley Seed Farms

G R S P H

A. H. FAN



Fan V/ARM



LOW

HYDRAULIC

Ground DRIVE On



DRIVE
4X4



4X2



LOW



HYDRAULIC



ON

Hi Range



Fuel Pump



FLASHES



PARKING
BRAKE

GROUND



DRIVE



Brake On



Brake Off



OFF



PARKING
BRAKE



FLASHES



STROBE

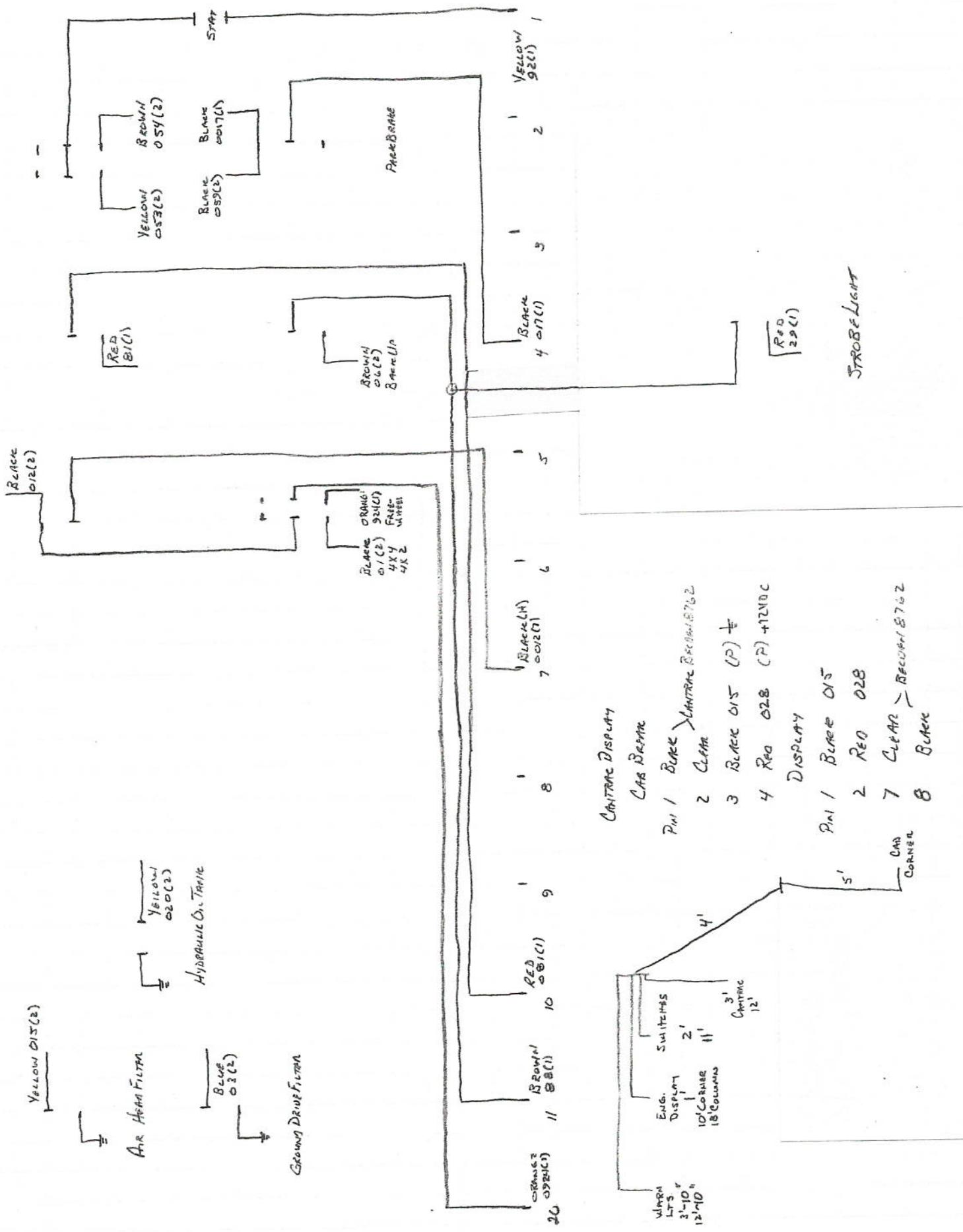


LIGHT

Fuel Pump

H. L. LEHRER

45/16-E2.5



FOOT PEOPLE SWITCHES

CENTERING

SECONDARY

STEERING

REVERSING

LEFT

RIGHT

LEFT
PRIMARY

RIGHT
PRIMARY

CENTERING

(STEERING COLUMN)

TRUCK LIGHTS

TRUCK LIGHTS

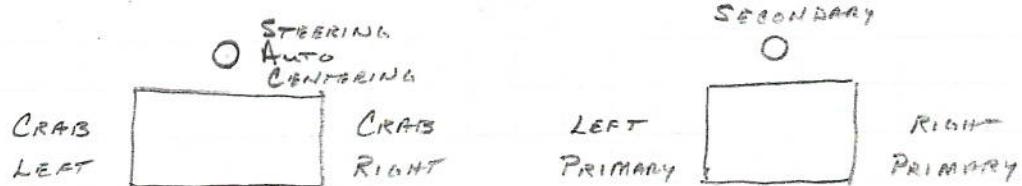
IN

OUT

FORWARD

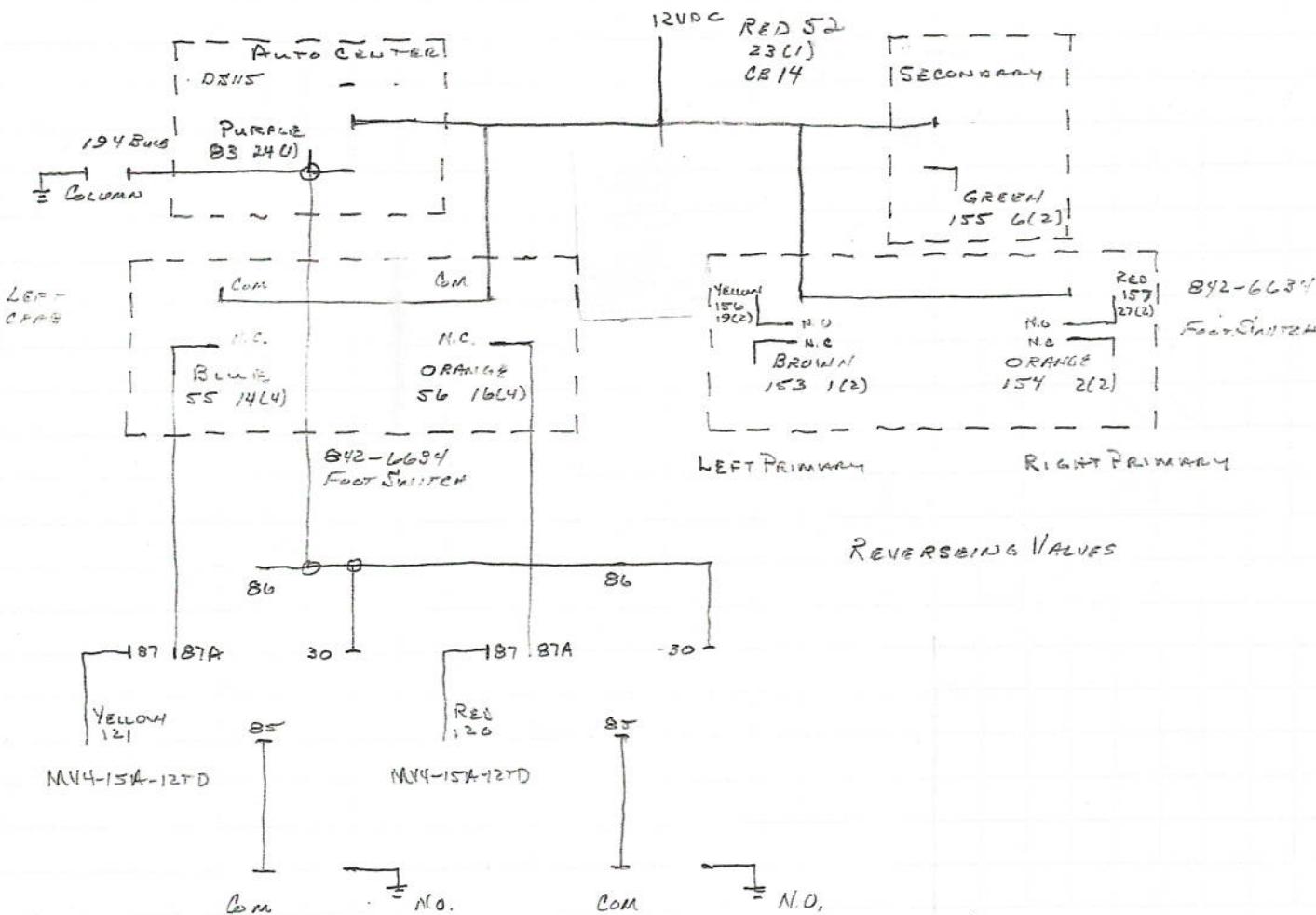
BACK

FOOT PEOPLE SWITCHES



STEFENS
REAR AXLE

REVERSING VALUES





Hydraulics

Electronic Proportional (EP) Control for Heavy Duty Series 2 Piston Pumps

Model 33

Model 54

Model 39

Model 64

Model 46

1/5/07

The Electronic Proportional (EP) Control is ideal for a wide range of mobile and industrial applications where electrical control of pump displacement is desired. Eaton's robust design incorporates an electronic module, proportional solenoids and a valve assembly.

Pump displacement is controlled by an input command signal which is converted into proportional current output by the electronic module. The proportional solenoid-actuated valve assembly then converts the current output into proportional pump displacement.

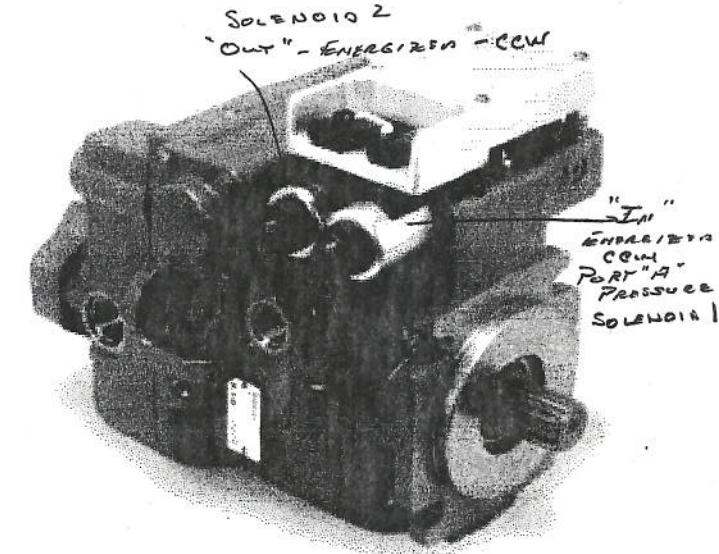
Designed to meet the rigorous duty cycle requirements of off-highway equipment, the EP Control utilizes an electronic module encapsulated in an aluminum enclosure and environmentally-sealed Metri-Pack® connectors to assure maximum protection from the elements. The EP Control is designed to resist Electromagnetic Interference (EMI) which could affect proper operation.

The EP Control offers maximum design and application flexibility with two different types of command input options and compatibility with both 12 and 24 Vdc power supplies. Typical input devices include joysticks (1-6 Vdc) and PLCs ($\pm 4-20$ mA).

For precise, repeatable operation, closed-loop current control is used to compensate for resistance and voltage changes of the proportional solenoids due to temperature variation. In the event of a power loss or loss of signal, the EP Control automatically returns the pump to neutral. Mechanical feedback of the swashplate position provides closed-loop control to maintain the selected displacement setting over a wide range of operating conditions. Solenoids have integral manual override actuators.

EP Control Features

- Robust, flexible electronic pump control
- Electronic module encapsulated for environmental protection
- Automotive style environmentally sealed Metri-Pack® connectors
- Closed-loop current control compensates for resistance change of the proportional solenoids due to temperature variations
- Return to neutral for loss of power or loss of command input signal
- Mechanical feedback of swashplate position for closed-loop control
- Two choices for command input signal
- Operates from 12 or 24 Vdc power supply
- Ease of installation
- Operating temperature range -40° to +85° C
- On-pump mounting for many installations
- External neutral adjustment
- Manual override capability
- Drive module qualification per SAE J1455, SAE J1113, CISPR 25
- External fuse (customer supplied): 3A



Electronic Module Qualification (Contact Eaton for Specific Levels)

- *SAE J1455 - Recommended Environmental Practices for Electronic Equipment Design*
Humidity/Temperature Extreme Cycling
Salt Spray
Splash & Immersion
Steam Cleaning/High Pressure Wash
Vibration
Mechanical Shock
Temperature Cycling
Load Dump Transients
Inductive Load Switching Transients
- *SAE J1113 - Electromagnetic Susceptibility Measurement Procedures for Vehicle Components*
EMI/EMC - Conducted & Radiated Immunity
- *CISPR 25 - International Electrotechnical Commission "Limits and Methods of Measurement of Radio Disturbance Characteristics for the Protection of Receivers used on Board Vehicles"*
EMI/EMC - Conducted & Radiated Emissions



Hydraulics

Electronic Proportional (EP) Control for Medium Duty 72400 Piston Pumps

The Electronic Proportional (EP) Control is ideal for a wide range of mobile and industrial applications where electrical control of pump displacement is desired. Eaton's robust design incorporates an electronic module, proportional solenoids and a valve assembly.

Pump displacement is controlled by an input command signal which is converted into proportional current output by the electronic module. The proportional solenoid-actuated valve assembly then converts the current output into proportional pump displacement.

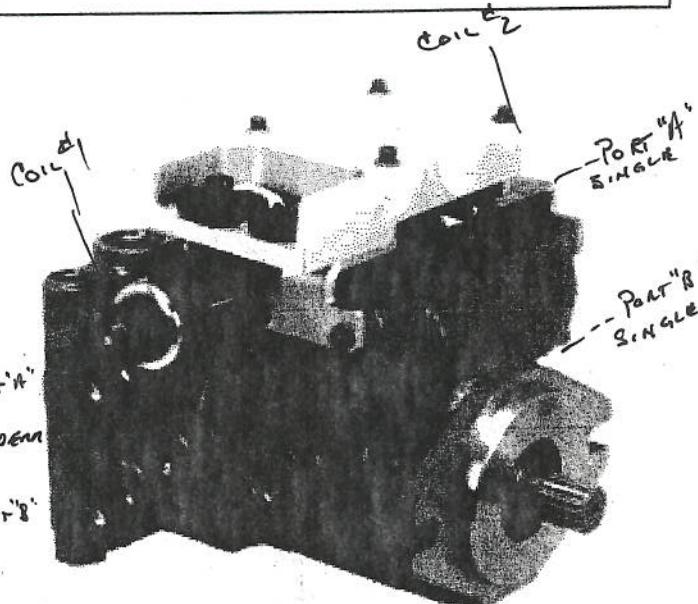
Designed to meet the rigorous duty cycle requirements of off-highway equipment, the EP Control utilizes an electronic module encapsulated in an aluminum enclosure and environmentally-sealed Metri-Pack® connectors to assure maximum protection from the elements. The EP Control is designed to resist Electromagnetic Interference (EMI) which could affect proper operation.

The EP Control offers maximum design and application flexibility with two different types of command input options and compatibility with both 12 and 24 Vdc power supplies. Typical input devices include joysticks (1-6 Vdc) and PLCs ($\pm 4-20$ mA).

For precise, repeatable operation, closed-loop current control is used to compensate for resistance and voltage changes of the proportional solenoids due to temperature variation. In the event of a power loss or loss of signal, the EP Control automatically returns the pump to neutral. Mechanical feedback of the swashplate position provides closed-loop control to maintain the selected displacement setting over a wide range of operating conditions. Solenoids have integral manual override actuators.

EP Control Features

- Robust, flexible electronic pump control
- Electronic module encapsulated for environmental protection
- Automotive style environmentally sealed Metri-Pack® connectors
- Closed-loop current control compensates for resistance change of the proportional solenoids due to temperature variations
- Return to neutral for loss of power or loss of command input signal
- Mechanical feedback of swashplate position for closed-loop control
- Two choices for command input signal
- Operates from 12 or 24 Vdc power supply
- Ease of installation
- Operating temperature range -40° to +85° C
- On-pump mounting for many installations
- External neutral adjustment
- Manual override capability
- Drive module qualification per SAE J1455, SAE J1113, CISPR 25
- External fuse (customer supplied): 3A



1/5/07

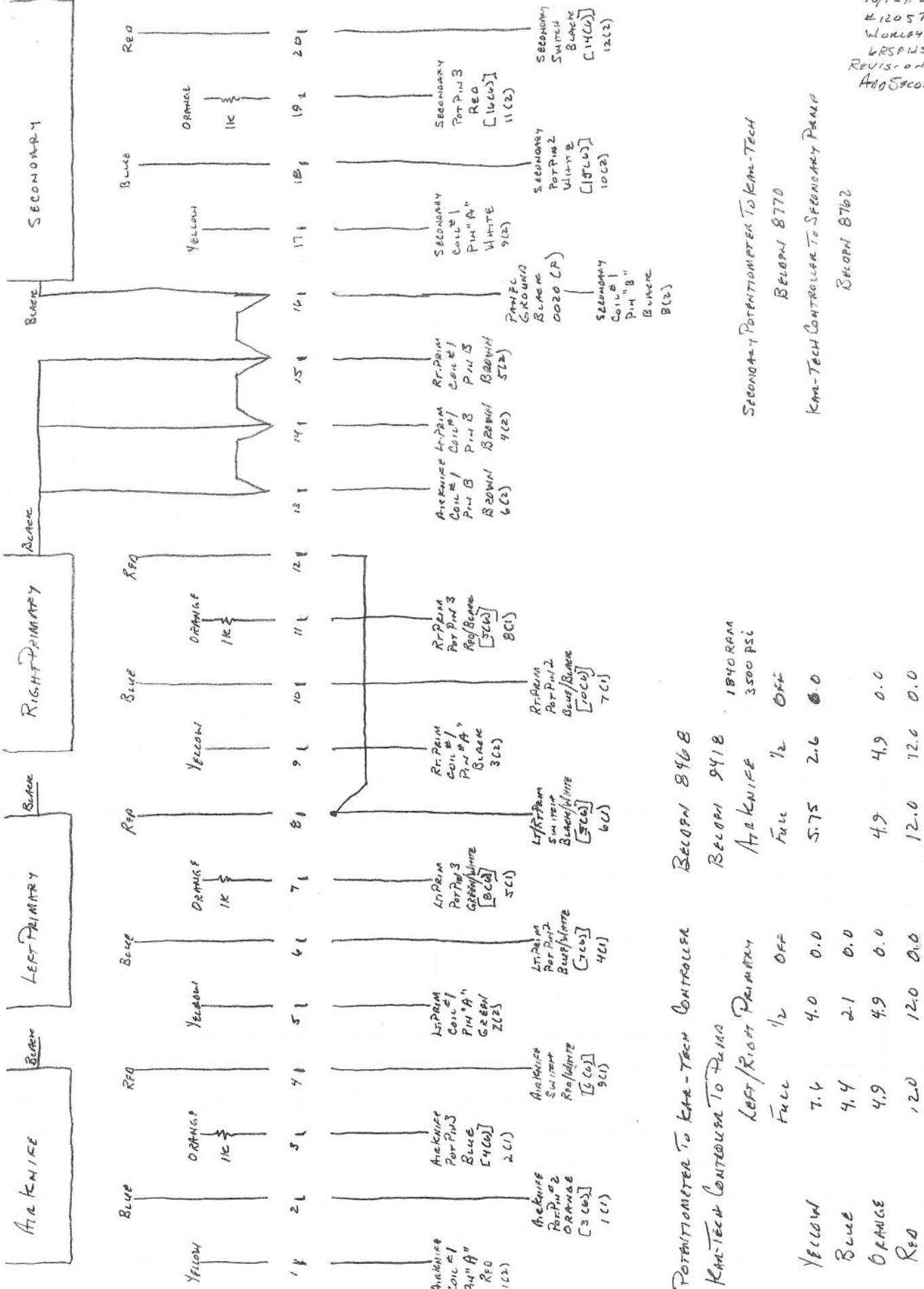
ENERGY 1250 - CEW

• 1 Coil Next To Pressure Ports - "IN" Pressure Out Port "A"

• 2 Coils Away From Ports - "OUT"

Electronic Module Qualification (Contact Eaton for Specific Levels)

- SAE J1455 - Recommended Environmental Practices for Electronic Equipment Design
 - Humidity/Temperature Extreme Cycling
 - Salt Spray
 - Splash & Immersion
 - Steam Cleaning/High Pressure Wash
 - Vibration
 - Mechanical Shock
 - Temperature Cycling
 - Load Dump Transients
 - Inductive Load Switching Transients
- SAE J1113 - Electromagnetic Susceptibility Measurement Procedures for Vehicle Components
 - EMI/EMC - Conducted & Radiated Immunity
- CISPR 25 - International Electrotechnical Commission "Limits and Methods of Measurement of Radio Disturbance Characteristics for the Protection of Receivers used on Board Vehicles"
 - EMI/EMC - Conducted & Radiated Emissions



10/12/12
#12057
WORCESTER
LRSPNISTWAd
Revised:
Aug Secondary

ADVANCED FARM EQUIPMENT

**BIN LEVELING
MD3/XA2**

PLUG #1

PIN NO.

			JUNCTION BLOCK NO.		
1	ORANGE	72	9	BIN MANUAL UP	C2.9 MD3
2	BLUE	71	10	BIN MANUAL DOWN	C2:10 MD3
3	WHITE	41	11	TRAVEL MODE	C2:11 MD3
4	BLACK (BELDEN 9418)		12	BIN LEVEL CONTROL %	C1:4 XA2
5	WHITE (BELDEN 9418)		12	BIN LEVEL CONTROL %	C1:4 XA2
6	RED (BELDEN 9418)		16	BIN LEVEL CONTROL %	C1:18 XA2
7	GREEN (BELDEN 9418)		19	BIN LEVEL CONTROL %	C1:32 XA2
8	WHITE	371	13	LEVEL WARNING	C1:8 XA2
9					
10					
11	BLACK	15	15	PANEL GROUND	C1:15 XA2
12	RED	28	18	12VDC POWER SUPPLY	C1:28 XA2

PLUG #2

PIN NO.

1	BLUE (SENSOR)		1	BANNER SENSOR GROUND	C1:1 MD3
2	WHITE (SENSOR)		14	BANNER SENSOR "SIGNAL IN"	C1:10 XA2
3	BROWN (SENSOR)		21	12VDC POWER SUPPLY	C1: 4
4	RED	75	216	12VDC POWER SUPPLY	C1: 4
5	RED	280	3	REAL TIME CLOCK POWER SUPPLY	C1: 7
6					
7					
8					
9					
10					
11					
12					