



EC - Series Electronic Control Box

APPLICATION:

Proportionally control the speed and direction of hydraulic motors and cylinders. This low cost unit can be configured in multiple ways to cover many applications.



ISO 9001:2008 WITH DESIGN
Certificate #02.002.1



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FEATURES:

- Rugged aluminum box construction.
- Heavy-duty foot brackets for quick and secure mounting.
- Color keyed SAE automotive grade wire leads for easy wiring and identification.
- Different potentiometers, power switches, LEDs and connector configurations.
- Single Pulse width modulated (PWM) output.
- Weatherproof seals on power switch, potentiometer, fuse holder, wire bushing and box lid.
- Externally mounted fuse holder for quick and easy fuse change to protect against over current conditions.
- Input protection from voltage transients, load dumps, 2-battery jumps and reverse polarity hook-ups.
- Power switches are separate from main control knob for turning valve on and off without loss of flow setting.
- Circuit board is coated with a conformal coating to protect against moisture.
- Customization for OEM customers is available. Consult factory.



SPECIFICATIONS:

Voltage Supply	12.7-18 VDC
PWM Output Current	1.0 Amps Max Continuous
PWM Output Frequency	100Hz +/- 10 Hertz
Environmental Ratings	IP65 / NEMA 4
Operating Temperature	-40°C - 80°C (-40°F - 176°F)
Storage Temperature	-40°C - 80°C (-40°F - 176°F)
Approximate Weight	1.4 lbs. (0.64 kg).

GENERAL INFORMATION:

The Brand, electronic control box is designed to proportionally adjust the Brand EFC-Series valves and other proportional valves that meet the appropriate specifications. The controller's design makes it suitable for use outdoors or indoor environments. The box has weather proofing features to help it function in the elements.

The main control knob is used to linearly adjust the current going through the solenoid on the valve. A large knob and a single turn potentiometer with a large degree of rotation gives smooth and precise adjustments. The controller is Pulse Width Modulated (PWM), which helps reduce the effects of hysteresis.

100% of all controls are tested prior to leaving the factory. All tests are performed with up to date, state of the art test equipment that is calibrated to NIST standards by an independent laboratory on a yearly basis.

COMMON MODEL CODES:

- EC1201.....Electronic control box
- EC1201L.....Electronic control box with LED

CREATING A MODEL CODE:

SERIES: _____
 EC
OPERATING VOLTAGE: _____
 12 - 12VDC
POTENTIOMETER: _____
 01 - Single Turn - 312° rotation (See Figure 1)
 03 - 3 Turn - 1080° rotation (See Figure 2)
 05 - 5 Turn - 1800° rotation (See Figure 3)
 07 - 10 Turn - 3600° rotation (See Figure 4)
LED INDICATOR (See Figure 5) : _____
 L - Red LED (Single, when SPST switch is selected)
 M - Green LED (Single, when SPST switch is selected)
 N - Red LED (Top & Bottom, when DPDT switch is selected)
 P - Green LED (Top & Bottom, when DPDT switch is selected)
 Q - Red LED (Top) / Green LED (Bottom), when DPDT switch is selected)
 R - Green LED (Top) / Red LED (Bottom), when DPDT switch is selected)
POWER SWITCH: _____ () indicate momentary function
 Omit – ON-NONE-OFF (SPST)
 1 - (ON)-NONE-OFF (SPST)
 2 - ON-OFF-ON (DPDT)
 3 - (ON)-OFF-(ON) (DPDT)
 4 - (ON)-OFF-ON (DPDT)
 5 - ON-OFF-(ON) (DPDT)
Wire/Cable Bushing Location #1 Mandatory Selection (See Figure 6 & 8) : _____
 1A - 2 Wires - Flying leads 2-Way Weather Pack, Plug, Female Terminals
 1C - 2 Wires - Flying leads 2-Way Metri-Pack 150 Series, Plug, Female Terminals
 1E - 2 Wires - Flying leads 2-Way Deutsch DT Series, Plug, Female Terminals
 1G - 2 Wires - Flying leads 2-Way Molex ML-XT Series, Plug, Female Terminals
 2A - 2 Wires - Multi Conductor Cable 2-Way Weather Pack, Plug, Female Terminals
 2C - 2 Wires - Multi Conductor Cable 2-Way Metri-Pack 150 Series, Plug, Female Terminals

Connector for Optional Power Bushing
If Power Bushing is selected an option code must be selected Location #2
 (See Figure 8) :
OMIT - No Connector or Optional Power Bushing was not selected
B - 2-Way Weather Pack, Receptacle, Male Terminals
D - 2-Way Metri-Pack 150 Series, Receptacle, Male Terminals
F - 2-Way Deutsch DT Series, Receptacle, Male Terminals
H - 2-Way Molex ML-XT Series, Receptacle, Male Terminals
J - 3-Way John Deere Power Connector Must use bushing location #1 Multiconductor (Option 2)
K - 3-Way AMP CPC Circular Power Connector Must use bushing location #1 Multiconductor (Option 2)
L - Fused Power/Cigarette Lighter Plug Must use bushing location #1 flying leads (Option 1)

Optional Power Bushing Location #2
 (See Figure 7):
Omit - No Bushing
 1 - Flying leads
 2 - Multiconductor cable

Wire/Cable Bushing Location #1 Mandatory Selection (See Figure 6 & 8) *continued*:
 2E - 2 Wires - Multi Conductor Cable 2-Way Deutsch DT Series, Plug, Female Terminals
 2G - 2 Wires - Multi Conductor Cable 2-Way Molex ML-XT Series, Plug, Female Terminals
 3M - 4 Wires - Flying leads 4-Way Weather Pack, Plug, Female Terminals
 3N - 4 Wires - Flying leads 4-Way Metri-Pack 150 Series, Plug, Female Terminals
 3P - 4 Wires - Flying leads 4-Way Deutsch DT Series, Plug, Female Terminals
 3Q - 4 Wires - Flying leads 4-Way Molex ML-XT Series, Plug, Female Terminals
 4M - 4 Wires - Multi Conductor Cable 4-Way Weather Pack, Plug, Female Terminals
 4N - 4 Wires - Multi Conductor Cable 4-Way Metri-Pack 150 Series, Plug, Female Terminals
 4P - 4 Wires - Multi Conductor Cable 4-Way Deutsch DT Series, Plug, Female Terminals
 4Q - 4 Wires - Multi Conductor Cable 4-Way Molex ML-XT Series, Plug, Female Terminals
 5R - 6 Wires - Flying leads 6-Way Weather Pack, Plug, Female Terminals
 5S - 6 Wires - Flying leads 6-Way Metri-Pack 150 Series, Plug, Female Terminals
 5T - 6 Wires - Flying leads 6-Way Deutsch DT Series, Plug, Female Terminals
 5U - 6 Wires - Flying leads 6-Way Molex ML-XT Series, Plug, Female Terminals
 6R - 6 Wires - Multi Conductor Cable 6-Way Weather Pack, Plug, Female Terminals
 6S - 6 Wires - Multi Conductor Cable 6-Way Metri-Pack 150 Series, Plug, Female Terminals
 6T - 6 Wires - Multi Conductor Cable 6-Way Deutsch DT Series, Plug, Female Terminals
 6U - 6 Wires - Multi Conductor Cable 6-Way Molex ML-XT Series, Plug, Female Terminals



CREATING A MODEL CODE INFORMATION:

LED INDICATOR:

- If 2 LEDs are selected you must select a DPDT power switch

WIRE/CABLE BUSHINGS:

- Wire/Cable bushing location #1 is a mandatory selection
- Wire/Cable power bushing location #2 is optional
- Flying leads and multi conductor cables are 18” long

PARTS LIST: Note: () indicate momentary function

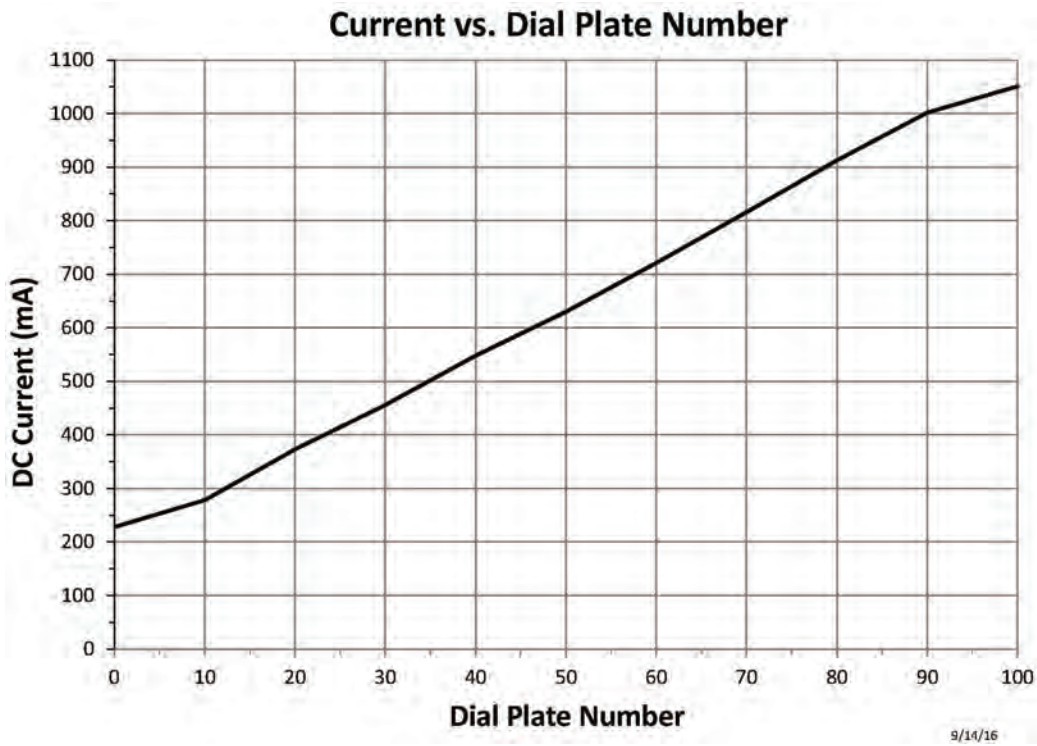
E1028.....	Surface mount PCB standoff
E1034.....	Mounting foot hex nut
E1049.....	Panel mount fuse holder
E1050.....	Knob, Black
E1071.....	Potentiometer shaft seal
E1466.....	Power switch, DPDT, ON-OFF-ON, screw terminals
E1467.....	Power switch, DPDT, (ON)-OFF-(ON), screw terminals
E1726.....	Fuse 1.5 amp
E1747.....	Power switch, SPST, ON-NONE-OFF, screw terminals
E1758.....	Switch boot seal
E1803.....	Single Turn Long Life Potentiometer, 10K w/6” Leads
E1953.....	Mounting foot lock washer
E2170.....	LED, Panel Mount, Red
E2563.....	3 Long Life Potentiometer, 10K w/6” Leads
E2833.....	Power switch, SPST, (ON)-NONE-OFF, screw terminals
E2834.....	Power switch, DPDT, ON-OFF-(ON), screw terminals
E2835.....	LED, Panel Mount, Green
E2836.....	5 Long Life Potentiometer, 10K w/6” Leads
E2837.....	10 Long Life Potentiometer, 10K w/6” Leads
P1158.....	Mounting foot bracket

ACCESSORIES LIST:

E2815.....	120VAC Wall-mount power supply with 6 ft. c rd. Flying leads w/loose Quick Disconnect Terminals
E2816.....	120VAC Wall-mount power supply with 6 ft. c rd. Weather Pack, 2-Way, Plug, Female Terminals
E2817.....	120VAC Wall-mount power supply with 6 ft. c rd. Metri-Pack 150 Series, 2-Way, Plug, Female Terminals
E2818.....	120VAC Wall-mount power supply with 6 ft. c rd. Deutsch DT Series, 2-Way, Plug, Female Terminals
E2819.....	120VAC Wall-mount power supply with 6 ft. c rd. Molex ML-XT Series, 2-Way, Plug, Female Terminals

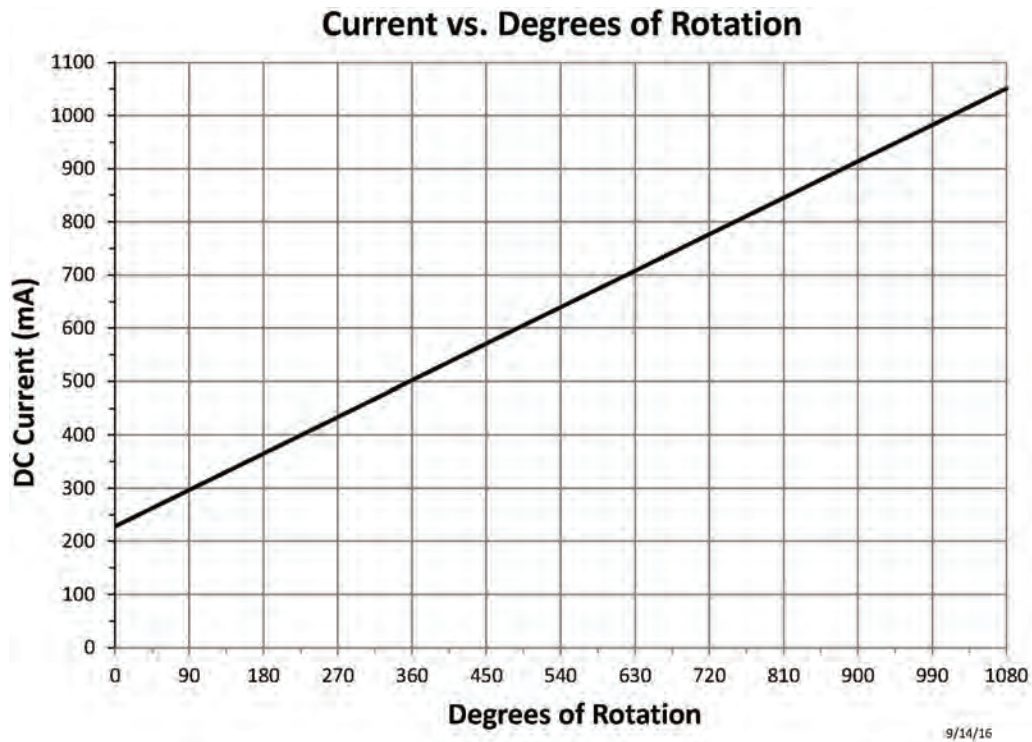
EC1201 SERIES CURRENT VS. DIAL PLATE:

Figure 1



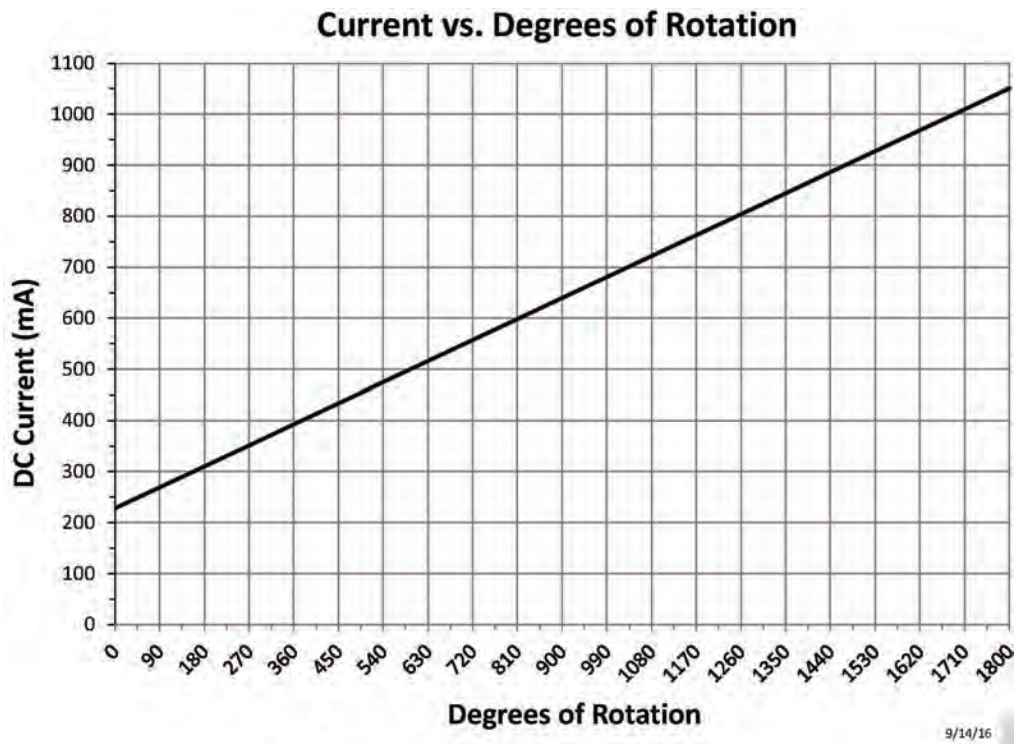
EC1203 SERIES CURRENT VS. DEGREES OF ROTATION:

Figure 2



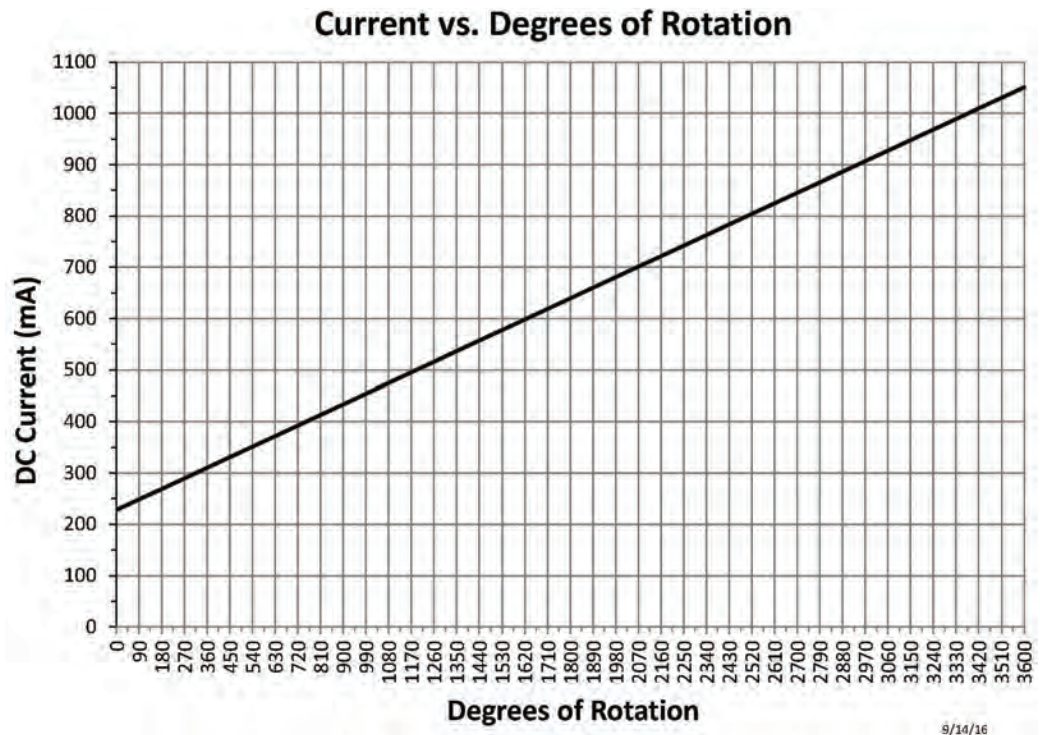
EC1205 SERIES CURRENT VS. DEGREES OF ROTATION:

Figure 3



EC1207 SERIES CURRENT VS. DEGREES OF ROTATION:

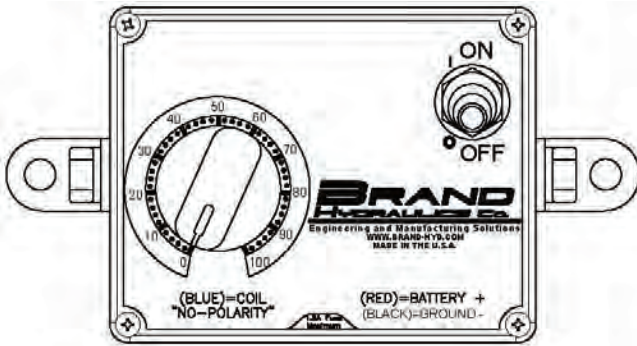
Figure 4



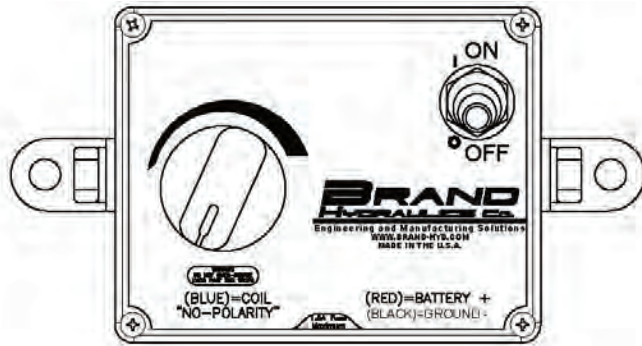
KNOB, SWITCH AND LED LAYOUTS:

Figure 5

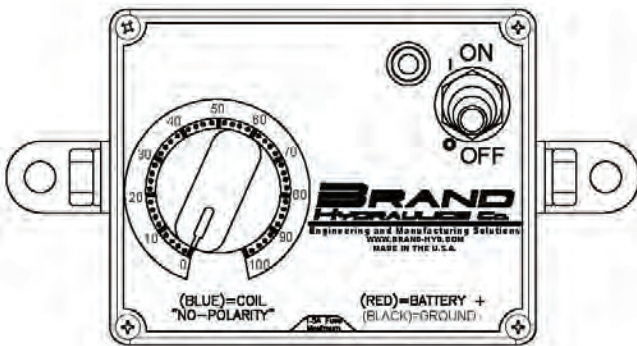
EC1201



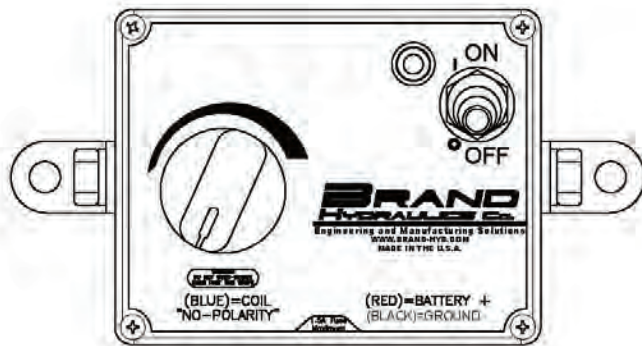
EC1203
EC1205
EC1207



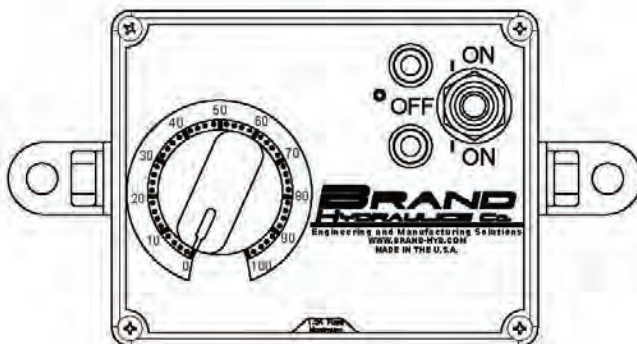
EC1201L



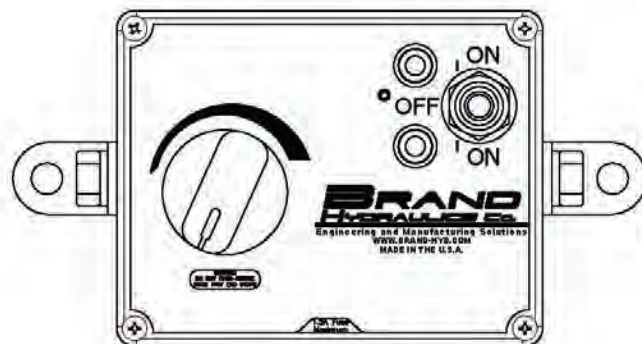
EC1203L
EC1205L
EC1207L



EC1201N2

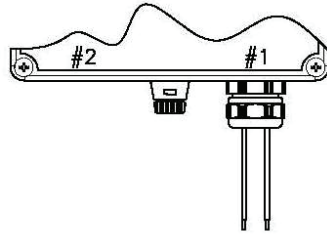


EC1203N2
EC1205N2
EC1207N2



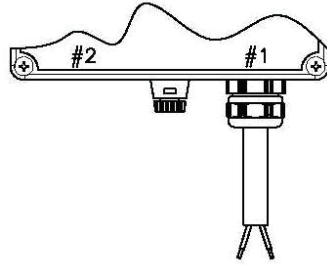
WIRE/CABLE BUSHING LOCATION #1:

Figure 6



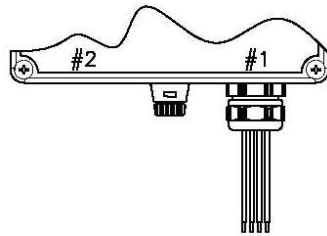
Option Code
1*

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	2 Wires – Flying Leads Wire



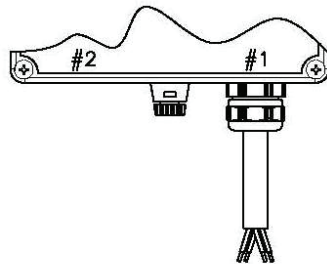
Option Code
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Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	2 Wires – Multi Conductor Cable



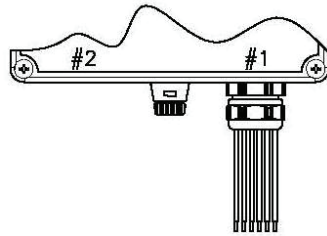
Option Code
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Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	4 Wires – Flying Leads Wire



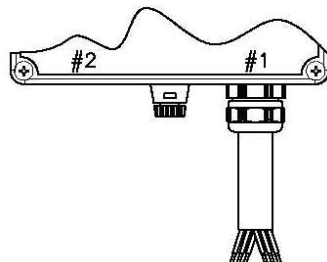
Option Code
4*

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	4 Wires – Multi Conductor Cable



Option Code
5*

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	6 Wires – Flying Leads Wire

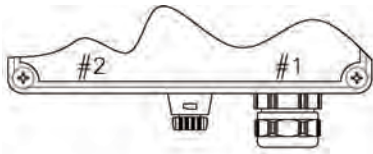


Option Code
6*

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	6 Wires – Multi Conductor Cable

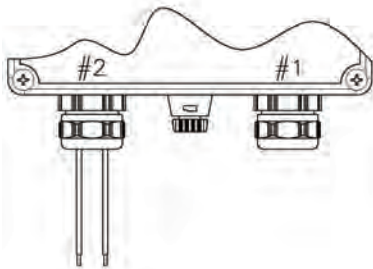
WIRE/CABLE BUSHING LOCATION #2:

Figure 7



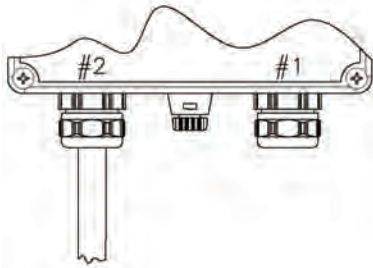
Option Code
OMIT

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	Option Code **
Bushing #2	NONE



Option Code
1

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	Option Code **
Bushing #2	2 Wires - Flying Leads Wire



Option Code
2

Wire/Cable Bushings	
Bushing Location	Bushing Type
Bushing #1	Option Code **
Bushing #2	Multi Conductor Cable

CONNECTORS:

Figure 8



Option Code

A

Delphi Weather Pack, 2-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E1059	12015792
Seal	2	E1063	12015323
Terminal	2	E1061	12089188



Option Code

B

Delphi Weather Pack, 2-Way Receptacle, Male Terminals			
Description	Quantity	Brand P/N	MFG P/N
Receptacle	1	E1064	12010973
Seal	2	E1063	12015323
Terminal	2	E1065	12089040



Option Code

C

Delphi Metri-Pack 150, 2-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E1357	12052641
TPA	1	E1360	12052634
Seal	2	E1358	12052924
Terminal	2	E1359	12048074



Option Code

D

Delphi Metri-Pack 150, 2-Way Receptacle, Male Terminals			
Description	Quantity	Brand P/N	MFG P/N
Receptacle	1	E1648	12162000
TPA	1	E1360	12052634
Seal	2	E1358	12052924
Terminal	2	E1649	12045773



Option Code

E

Deutsch DT Series, 2-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2534	DT06-2S
Wedge Lock	1	E2540	W2S
Terminal	2	E1827	0462-201-16141



Option Code

F

Deutsch DT Series, 2-Way Receptacle, Male Terminals			
Description	Quantity	Brand P/N	MFG P/N
Receptacle	1	E2824	DT04-2P
Wedge Lock	1	E2015	W2P
Terminal	2	E2016	0460-202-16141

CONNECTORS:



Option Code

G

Molex ML-XT Series, 2-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2825	93445-1102
Wedge Lock	1	E2827	93448-1003
Terminal	2	E2828	84525-0009



Option Code

H

Molex ML-XT Series, 2-Way Receptacle, Male Terminals			
Description	Quantity	Brand P/N	MFG P/N
Receptacle	1	E2826	93444-1102
Wedge Lock	1	E2829	93447-1003
Terminal	2	E2830	84524-0004



Option Code

J

John Deere Molded Power Cable, 3-Way						
Description	Quantity	Brand P/N	MFG P/N	Terminal Letter	Wire Color	Connection
Cable	1	E2809	RE67013	A	Red	+ VDC Input
				B	Black	System Ground
				C	Orange	Keyed + VDC



Option Code

K

TE Circular Connector, 3-Way Plug, Female Terminals						
Description	Quantity	Brand P/N	MFG P/N	Terminal Letter	Wire Color	Connection
Plug	1	E2247	206037-2	1	Red	+ VDC Input
Clamp	1	E2248	206070-8	2	N/C	N/C
Terminal	2	E2249	66740-2	3	Black	System Ground



Option Code

L

Fused Power/Cigarette Lighter Plug						
Description	Quantity	Brand P/N	Terminal Letter	Wire Color	Connection	
Cable/Plug	1	E2831	Pin	Red	+ VDC Input	
			Springs	Black	System Ground	



Option Code

M

Delphi Weather Pack, 4-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2838	12015798
Seal	4	E1063	12015323
Terminal	4	E1061	12089188

CONNECTORS



Option Code

N

Delphi Metri-Pack 150, 4-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2840	12162144
TPA	1	E2842	12047948
Seal	4	E1358	12052924
Terminal	4	E1359	12048074



Option Code

P

Deutsch DT Series, 4-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2843	DT06-4S
Wedge Lock	1	E2759	W4S
Terminal	4	E1827	0462-201-16141



Option Code

Q

Molex ML-XT Series, 4-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2845	93445-3102
Wedge Lock	1	E2847	93448-3003
Terminal	4	E2828	84525-0009



Option Code

R

Delphi Weather Pack, 6-Way Plug, Male Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E1084	12015799
Seal	6	E1063	12015323
Terminal	6	E1061	12089188



Option Code

S

Delphi Metri-Pack 150, 6-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2849	12052848
TPA	1	E2851	12052850
Seal	6	E1358	12052924
Terminal	6	E1359	12048074



Option Code

T

Deutsch DT Series, 6-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2852	DT06-6S
Wedge Lock	1	E2548	W6S
Terminal	6	E1827	0462-201-16141



Option Code

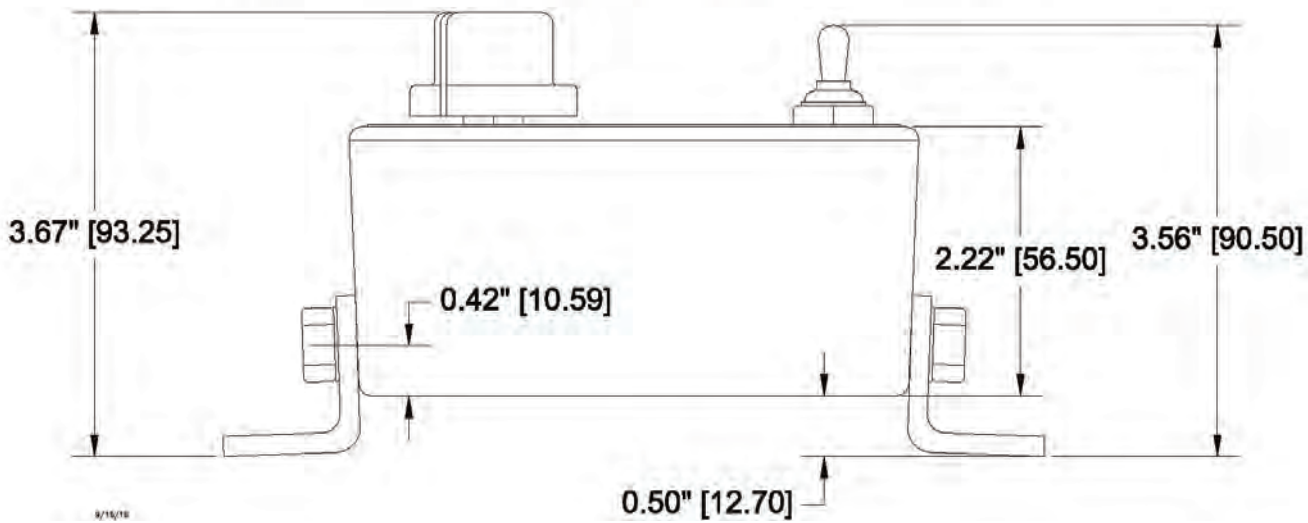
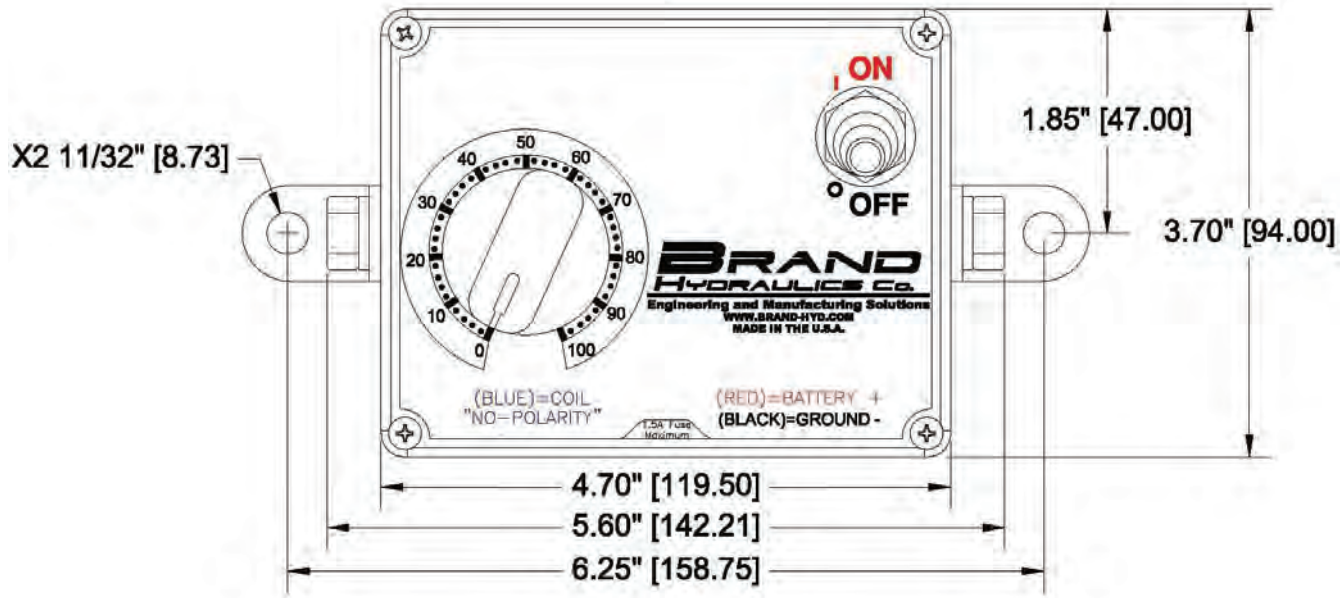
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Molex ML-XT Series, 6-Way Plug, Female Terminals			
Description	Quantity	Brand P/N	MFG P/N
Plug	1	E2854	93445-4102
Wedge Lock	1	E2856	93448-4003
Terminal	6	E2828	84525-0009

DIMENSIONAL DATA: inches & [millimeters]

EC1201, EC1203, EC1205, EC1207 SERIES

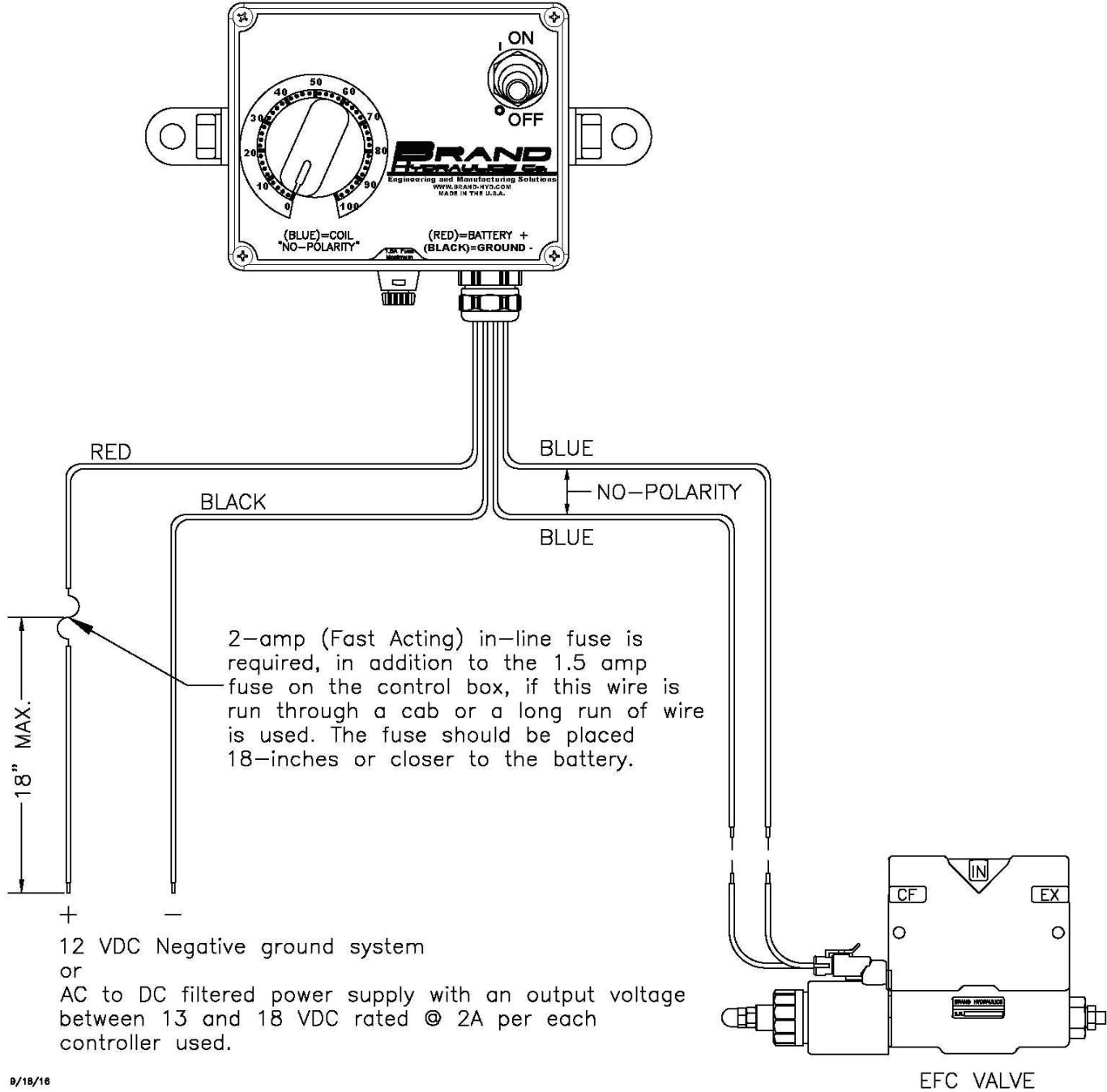
EC1201 SERIES SHOWN



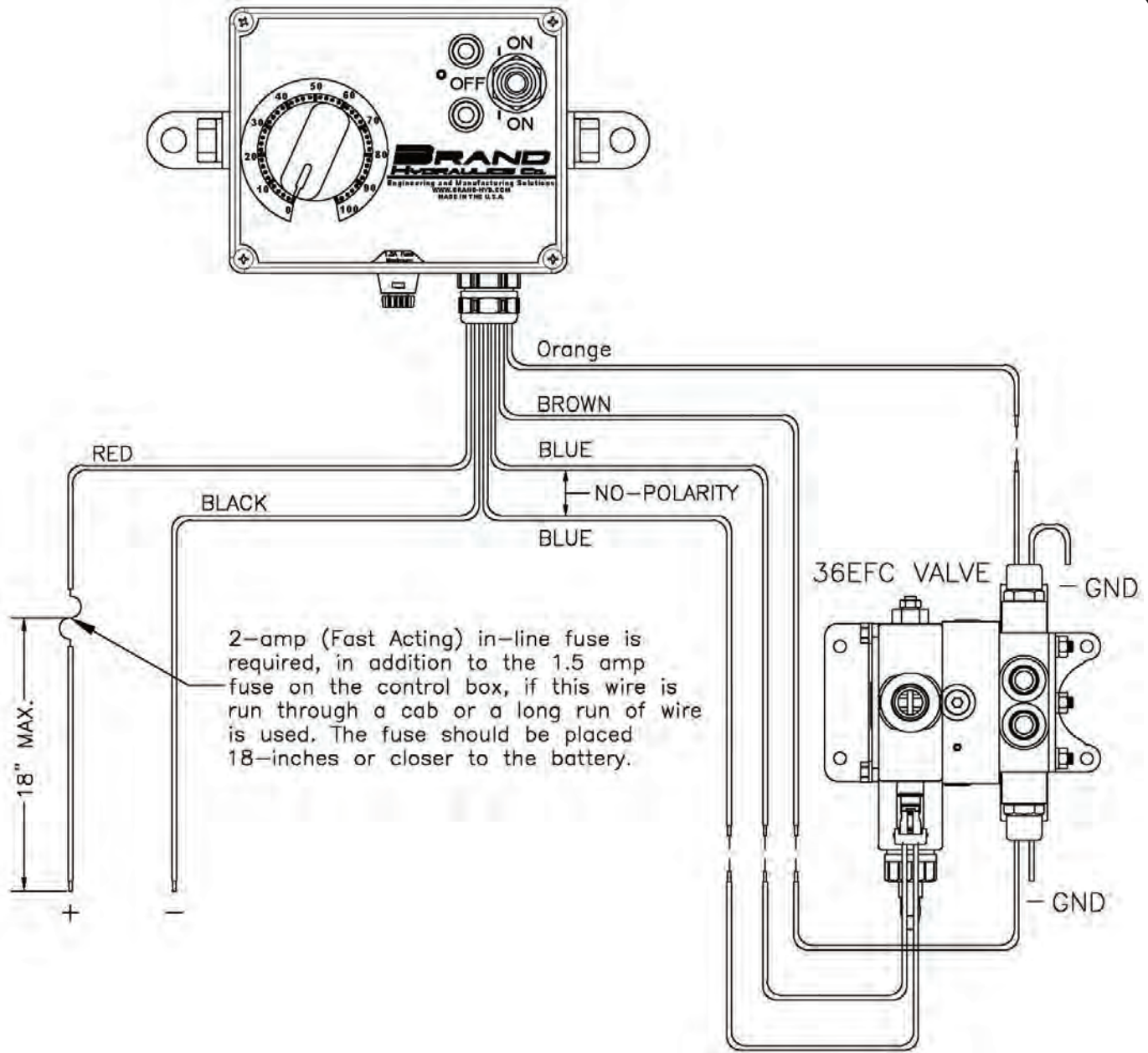
8/16/18



EC1201 SERIES WIRING DIAGRAM:



EC1201N2 SERIES WIRING DIAGRAM:



It is the purchaser's responsibility to determine the suitability of any Brand Hydraulics product for an intended application, and to insure that it is installed in accordance with all federal, state, local, private safety, health regulations, and codes and standards. Due to the unlimited variety of machines, vehicles, and equipment on which our products can be used, it is impossible for Brand Hydraulics to offer expert advice on the suitability of a product for a specific application. We believe that it is our customer's responsibility to undertake the appropriate testing and evaluation to prevent injury to the end user.

All product, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.