

**canfield  
connector**

**ILSS SERIES**  
IN-LINE SOFT START  
ELECTRONIC SOFT  
START CONTROL

## GENERAL DESCRIPTION

Canfield Connector's ILSS Series, In-Line Soft Start (Electronic Soft Start Control) improves the performance and lifespan of your hydraulic systems. This innovative electronic device provides a smooth and controlled ramp-up of hydraulic pressure, eliminating the damaging shock and stress associated with traditional sudden starts reducing wear and tear on hydraulic components while minimizing stress on pumps, cylinders, hoses, and other parts, extending their lifespan. The all-solid-state microprocessor-based control makes for precise and reliable operation which can be modified with adjustable start-up time and pressure ramp rates to match any application. Upon power up, the device outputs the starting PWM and ramps to the ending PWM over the ramp time selected, and will remain until power is removed. The compact and rugged enclosure is designed for harsh environments and is available in various configurations to suit your needs.



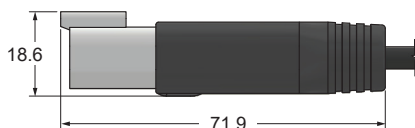
5J ISO, M12 Male version shown above

## DIMENSIONAL DATA

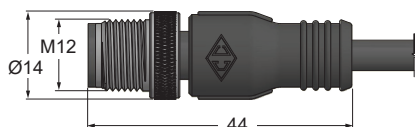
All dimensions are in millimeters unless otherwise noted.

### CONNECTION OPTIONS Input

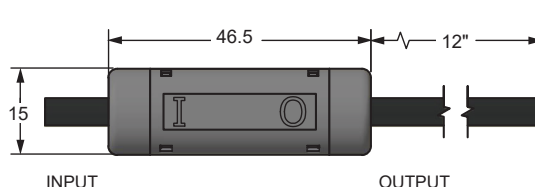
#### GT 2 Pin Receptacle



#### M12 3 Pin Male

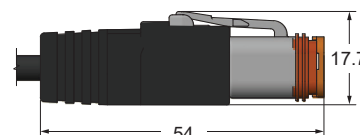


### IL1

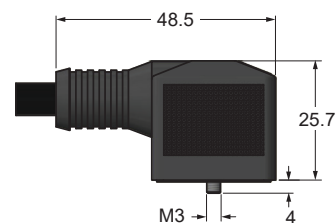


### CONNECTION OPTIONS Output

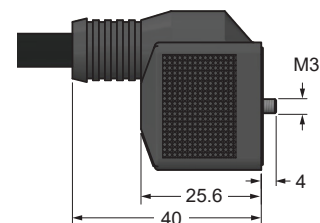
#### GT 2 Pin Plug



#### 5J ISO



#### 5F ISO



|                                          |                                                               |
|------------------------------------------|---------------------------------------------------------------|
| <b>Output Current</b>                    | 3 Amp Max.                                                    |
| <b>Input Voltage</b>                     | 12-24 VDC                                                     |
| <b>Allowable Input Voltage DC Ripple</b> | 20% peak to peak                                              |
| <b>Input Voltage Tolerance</b>           | 10%                                                           |
| <b>Materials</b>                         | Enclosure: Polyurethane<br>Module: PA and Polyurethane        |
| <b>Temperature Range</b>                 | -20° to +80°C                                                 |
| <b>Environmental Protection</b>          | IP 65 AND NEMA 4,<br>Dust tight and water resistant           |
| <b>Cable Diameter</b>                    | 0.190                                                         |
| <b>Cable Conductor Colors</b>            | US Code: Black, green, white<br>(Others available on request) |
| <b>Cable Type</b>                        | Pressure extruded PVC jacket<br>(Others available on request) |
| <b>Wire Gauge</b>                        | 20 AWG standard                                               |

## WIRING INFORMATION

| Terminal Configuration                                                                                   |              |     |
|----------------------------------------------------------------------------------------------------------|--------------|-----|
| Wire Type                                                                                                | EUR          | US  |
| <br>Chassis<br>Ground | YEL &<br>GRN | GRN |
| (+)<br>Pos. / Hot<br>Pin 1                                                                               | BRN          | BLK |
| (-)<br>Neg. / Neut.<br>Pin 2                                                                             | BLU          | WHT |

### PWM vs Output Voltage

Graph showing Voltage (Y-axis, 0 to 14) versus Time (X-axis, 0 to 1.0). The PWM signal (blue line) is a high-frequency square wave. The Output Voltage (orange line) is a smooth, increasing curve, representing the average output voltage over time. The legend indicates: PWM (blue line) and Output Voltage (orange line).

**ILSS**

- Enclosure Style**  
1 - IL1
- Input Wire Length**  
6 - 6 ft cable  
*Additional wire lengths available*
- Input Connection**  
01 - Cable with leads  
02 - GT 2 Pin Receptacle  
90 - M12 3 Pin Male Straight
- Output Wire Length**  
6 - 6 ft cable  
*Additional wire lengths available*
- Output Connection Options**  
01 - Cable with leads  
02 - GT0602 2 Pin Plug  
10 - 5J ISO Dual Ground Up/Down  
20 - 5F ISO Dual Ground
- Start PWM**  
0 - 0%    5 - 50%  
1 - 10%    6 - 60%  
2 - 20%    7 - 70%  
3 - 30%    8 - 80%  
4 - 40%    9 - 90%
- Packaging Code**  
A - Bulk  
G - Individual bagged
- Input Voltage**  
2 - 12-24 VDC
- End PWM**  
0 - 0%    6 - 60%  
1 - 10%    7 - 70%  
2 - 20%    8 - 80%  
3 - 30%    9 - 90%  
4 - 40%    A - 100%  
5 - 50%  
*Note: Value should be greater than Start PWM*
- Ramp Time**  
01 - 1 sec.    06 - 6 sec.  
02 - 2 sec.    07 - 7 sec.  
03 - 3 sec.    08 - 8 sec.  
04 - 4 sec.    09 - 9 sec.  
05 - 5 sec.    10 - 10 sec.

**Ordering Example:** ILSS-16020-69020582A

IL1, 6 ft., GT 2 Pin Receptacle, 6 ft, M12 3 Pin Male,  
Straight, 20% Start PWM, 5 sec. Ramp Time, 80%  
End PWM, 12-24VDC Input Voltage, Bulk