

## Features

- Single Output up to 20A  
Dual Outputs Total Current up to 15A  
up to 100% Load Imbalance
- Input/Output 1.6kVDC Isolation
- Adjustable Output Voltage, Independently Regulated Outputs
- No Minimum Load
- Industry Standard Footprint
- Halt Tested
- Compact 61.0 x 57.91 x 12.7mm Package
- High Efficiency to 90%

## Selection Guide

| Part Number          | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (A) | Line Regulation (mV) | Load Regulation (mV) | Input Current (A) | Efficiency % |
|----------------------|---------------------|----------------------|--------------------|----------------------|----------------------|-------------------|--------------|
| <b>Single Output</b> |                     |                      |                    |                      |                      |                   |              |
| RP75-481.8S          | 36 – 75             | 1.8                  | 20                 | 4                    | 6                    | 915               | 86           |
| RP75-482.5S          | 36 – 75             | 2.5                  | 20                 | 5                    | 8                    | 1255              | 88           |
| RP75-483.3S          | 36 – 75             | 3.3                  | 20                 | 7                    | 10                   | 1618              | 90           |
| RP75-4805S           | 36 – 75             | 5                    | 15                 | 10                   | 15                   | 1838              | 90           |
| RP75-4815S           | 36 – 75             | 15                   | 5                  | 30                   | 45                   | 1860              | 90           |

| Part Number        | Input Voltage (VDC) | Output Voltage (VDC) |     | Output Current (A) |    | Line Regulation (mV) | Load Regulation (mV) | Efficiency % |
|--------------------|---------------------|----------------------|-----|--------------------|----|----------------------|----------------------|--------------|
|                    |                     | V1                   | V2  | I1                 | I2 |                      |                      |              |
| <b>Dual Output</b> |                     |                      |     |                    |    |                      |                      |              |
| RP75-483.305DI     | 36 – 75             | 5                    | 3.3 | 15                 | 15 | 7/10                 | 10/15                | 88           |
| RP75-483.32.5DI    | 36 – 75             | 3.3                  | 2.5 | 15                 | 15 | 7/5                  | 10/8                 | 81           |
| RP75-48051.8DI     | 36 – 75             | 5                    | 1.8 | 15                 | 15 | 10/4                 | 10/15                | 85           |
| RP75-483.31.8DI    | 36 – 75             | 3.3                  | 1.8 | 15                 | 15 | 7/4                  | 10/6                 | 81           |

## Notes:

1. Maximum output deviation is 10% inclusive of remote sense. If remote sense is not being used, the +Vsense should be connected to its corresponding +Vout and likewise the -Vsense should be connected to its corresponding -Vout..
2. Measured with a 1µF M/C and a 10µF M/C(for dual outputs) or 1µF M/C and a 10µF T/C(for single outputs).
3. An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current for 48V models. RECOM suggest: Nippon chemi-con KMF series, 220µF/100V, ESR 90mΩ.
4. The negative / positive logic and length are optional ( see table ). The pin voltage is referenced to negative input.
5. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at Tc=40°C.  
(Ground fixed and controlled environment)
6. Heat sink is optional and P/N: 7G-0021, 7G-0022, 7G-0023, 7G-0024.
7. The RP75 meets level A and level B conducted emissions only with external components connected before the input pin to the converter.
8. Maximum value at nominal input voltage and full load.
9. Single:Typical value at nominal input voltage and full load.  
Dual:The efficiency test condition: Nominal input voltage and both outputs current are 7.5A.
10. BASEPLATE GROUNDING:Base-plate should be grounded at one of the four screw bolts prior to operation.
11. The converter is provided by basic insulation.
12. "N" for Negative remote ON/OFF.
13. "P" for Positive remote ON/OFF.

**INNOLINE**  
DC/DC-Converter

# RP75-S\_DI Series

**75 Watt  
Isolated  
Single &  
Dual Output**



**RECOM**



**Specifications (refer to the standard application circuit, Ta: 25°C)**

|  |   |   |
|--|---|---|
| Input Voltage Range  | 36-75VDC  | 48V nom.  |
| Unde-Voltage Lockout Start-up Voltage                                  | 48V input   | 34V typ.  |
| Unde-Voltage Lockout Shutdown Voltage                                  | 48V input   | 32V typ.  |
| Input Filter (Note 3)  |   | L-C type  |
| Input voltage variation  | dv/dt   | 5V/ms max<br>(Complies with ETS300 132 part4.4)         |
| Input Surge Voltage 100ms max  | 48V input   | 100VDC  |
| Start up time  | Nominal Vin and constant resistive load                     | 25ms typ.   |
| Input Reflected-Ripple Current<br>(5Hz to 20Hz, 12µH Source impedance) | 48V input   | 20mA <sub>p-p</sub>                                     |
| Remote ON/OFF (Note 4)<br>(Positive logic)                             | ON=Open or 3.0V < Vr < 15V,<br>OFF=Short or 0V < Vr < 1.2V, | I <sub>IN</sub> =50µA max.<br>I <sub>IN</sub> =1mA max. |
| (Negative logic)   | ON=Short or 0V < Vr < 1.2V,<br>OFF=Open or 3.0V < Vr < 15V, | I <sub>IN</sub> =1mA max.<br>I <sub>IN</sub> =50µA max. |
| Continuous Output Power  |   | 75W max.  |
| Output Voltage Accuracy (full load and nominal Vin)                    |   | ±1.5%   |
| Output Voltage Adjustment  | Single (Note 1)<br>Dual                                     | +10%, -20%<br>+10%, -10%                                |
| Minimum Load   |   | 0%  |
| Line Regulation  | low line to high line at full load                          | See table   |
| Load Regulation  | 0% to 100% full load  | See table   |
| Remote Sense (Note 1)  |   | 10% of Vout   |
| Ripple and Noise 20MHz bandwidth (Note 2)                              |   | 100mV <sub>p-p</sub>                                    |
| Temperature Coefficient  |   | ±0.02%/°C   |
| Transient Response Recovery Time (25% load step change)                |   | 200µs   |
| Over Voltage Protection threshold (Non-Latching Hiccup)                |   | 115% ~ 130% of Vout                                     |
| Over Current Protection threshold                                      |   | 110% ~ 140% of Iout Rated                               |
| Maximum Total Output Current   | I <sub>1</sub> + I <sub>2</sub> Dual                        | 15A   |
| Short Circuit Protection   |   | Hiccup, Automatic recovery                              |
| Efficiency (at nominal input voltage, full load)                       |   | up to 90%.  |
| Isolation Voltage  | Input to Output<br>Input to Case<br>Output to Case          | 1600VDC min.<br>1000VDC min.<br>1000VDC min.            |
| Isolation Resistance   |   | 10 <sup>7</sup> Ω min.                                  |
| Isolation Capacitance  |   | 2500pF max.   |
| Operating Frequency  |   | 300KHz typ.   |
| Operating Temperature Range  |   | -40°C to +100°C (base plate)                            |
| Over Temperature Protection  |   | 110°C   |
| Storage Temperature Range  |   | -55°C to +125°C   |
| Humidity max., Non-condensing  |   | 95%   |
| Thermal Shock  |   | MIL-STD-810D  |

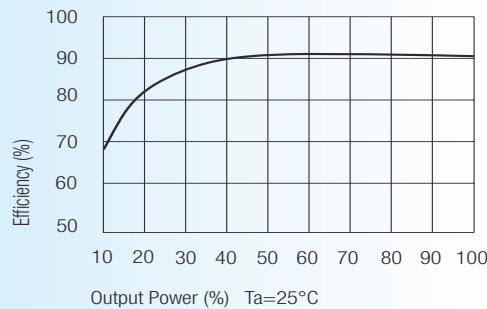
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**Specifications (refer to the standard application circuit, Ta: 25°C)**

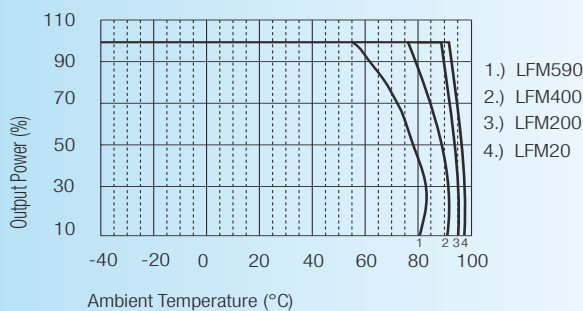
|                     |   |                             |
|---------------------|---|-----------------------------|
| OOVibration         | 10 ~ 55Hz 2G, 3minutes period, 30minutes analog | X, Y and Z                  |
| Conducted Emissions | EN55022 (Note 7)                                | Level A                     |
|                     | EN55022 (Note 7)                                | Level B                     |
| Radiated Emissions  | EN55022   | Level A                     |
| ESD                 | EN61000-4-2                                     | Perf. Criteria2             |
| Radiated Immunity   | EN61000-4-3                                     | Perf. Criteria2             |
| Fast Transient      | EN61000-4-4                                     | Perf. Criteria2             |
| Surge               | EN61000-4-5                                     | Perf. Criteria2             |
| Conducted Immunity  | EN61000-4-6                                     | Perf. Criteria2             |
| Case Material       | Open with Aluminium base plate                  |                             |
| Weight              | Single  | 53g                         |
|                     | Dual  | 57g                         |
| MTBF ( Note 6 )     | Single  | 2000 x10 <sup>3</sup> hours |
|                     | Dual  | 1300 x10 <sup>3</sup> hours |

**Characteristics**

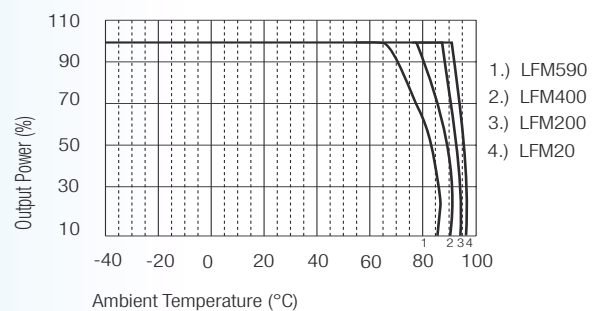
### Efficiency vs Output Load for 5V only



### 48V Input Without Heatsink

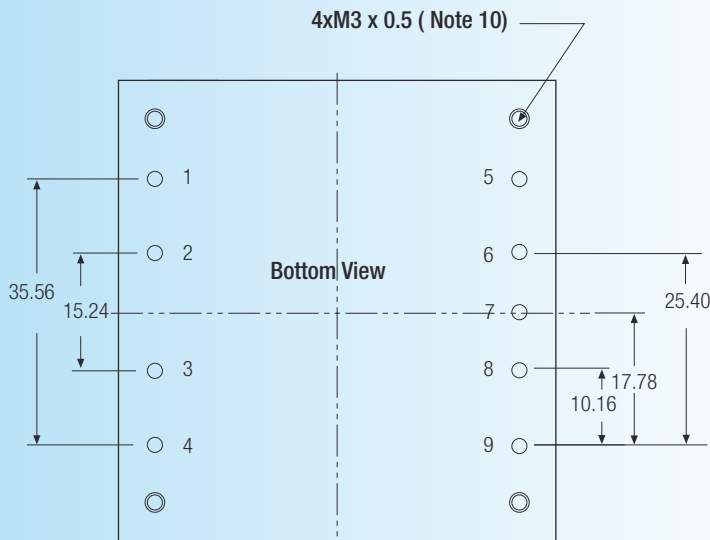
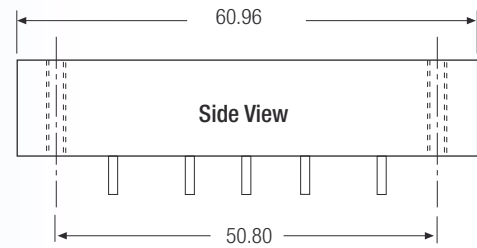
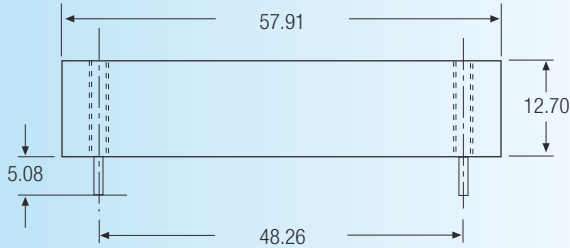


### 48V Input With Heatsink (7G-0022)



**Package Style and Pinning (mm)**

**Single Output**



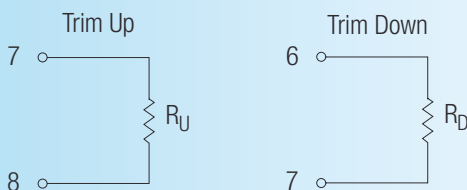
**Pin Connections**

| Pin # | Function      | Pin Ø    |
|-------|---------------|----------|
| 1     | -Vin          | 1.016 mm |
| 2     | Case          | 1.016 mm |
| 3     | Remote ON/OFF | 1.016 mm |
| 4     | +Vin          | 1.016 mm |
| 5     | -Vout         | 2.032 mm |
| 6     | -Vsense       | 1.016 mm |
| 7     | Trim          | 1.016 mm |
| 8     | +Vsense       | 1.016 mm |
| 9     | +Vout         | 2.032 mm |

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm  
Pin pitch tolerance 0.35mm

**External Output Trimming**

Output can be externally trimmed by using the method shown below.



**Product Options Table**

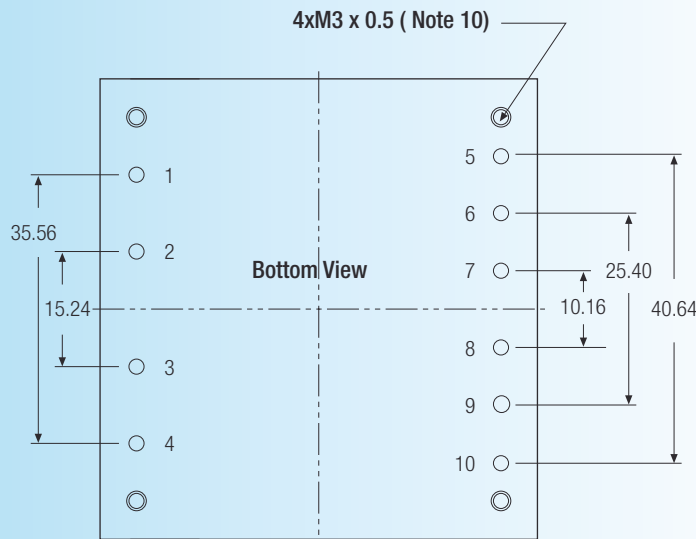
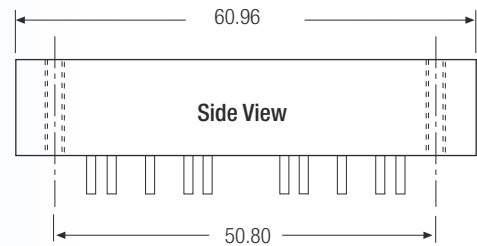
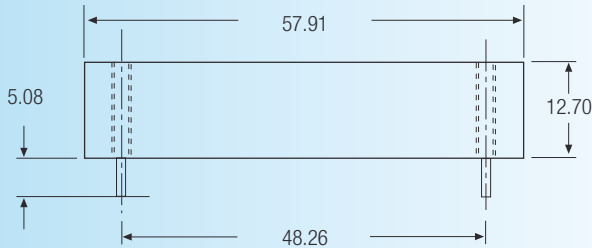
| Option  | Suffix |
|---|--------|
| Negative remote ON/OFF logic, 0.20" pin length (standard) |        |
| Negative remote ON/OFF logic, 0.145" pin length           | L      |
| Negative remote ON/OFF logic, 0.11" pin length            | K      |
| Positive remote ON/OFF logic, 0.20" pin length            | P      |
| Positive remote ON/OFF logic, 0.145" pin length           | S      |
| Positive remote ON/OFF logic, 0.11" pin length            | M      |

**Example: RP75-483.3S/P**

**Package Style and Pinning (mm)**

**Dual Output**

3rd angle projection 



**Pin Connections**

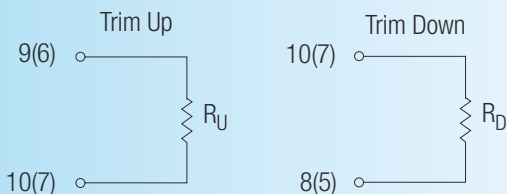
| Pin # | Function      | Pin Ø    |
|-------|---------------|----------|
| 1     | -Vin          | 1.016 mm |
| 2     | Case          | 1.016 mm |
| 3     | Remote ON/OFF | 1.016 mm |
| 4     | +Vin          | 1.016 mm |
| 5     | +V2           | 1.016 mm |
| 6     | -V2 (Com)     | 1.016 mm |
| 7     | V2 Trim       | 1.016 mm |
| 8     | +V1           | 1.016 mm |
| 9     | +V1 (Com)     | 1.016 mm |
| 10    | V1 Trim       | 1.016 mm |

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm  
Pin pitch tolerance 0.35mm

**External Output Trimming**

Output can be externally trimmed by using the method shown below.

( ) for V2 output trim



**Product Options Table**

| Option  | Suffix |
|---|--------|
| Negative remote ON/OFF logic, 0.20" pin length (standard) |        |
| Negative remote ON/OFF logic, 0.145" pin length           | L      |
| Negative remote ON/OFF logic, 0.11" pin length            | K      |
| Positive remote ON/OFF logic, 0.20" pin length            | P      |
| Positive remote ON/OFF logic, 0.145" pin length           | S      |
| Positive remote ON/OFF logic, 0.11" pin length            | M      |

Example: RP75-483.305I/N