

# ARTESYN INTELLIGENT MP SERIES

Up to 1500 Watts



iMP™

PMBus®  
Power Management.  
Defined.

Advanced Energy's Artesyn iMP series is an AC input to DC output configurable power system consisting of a microprocessor-controlled PFC front end providing seven slots that accept intelligent DC-DC converter modules with single, dual or triple outputs ranging from 2 V to 60 V. Single output modules come in four power ranges that can be mixed and matched and connected in parallel or series to obtain thousands of output combinations customized to any application.

## SPECIAL FEATURES

- Full medical EN60601 approval
- Intelligent I<sup>2</sup>C control
- Voltage adjustment on all outputs (manual or I<sup>2</sup>C)
- Configurable input and output OK signals and indicators
- Configurable inhibit/enable
- Configurable output UP/DOWN sequencing
- Configurable current limit (foldback or constant current)
- High power density (8.8 W/cu-in)
- Intelligent fan (speed control/fault status)
- Downloadable GUI from website
- Customer provided air option
- uP controlled PFC input with active inrush protection
- I<sup>2</sup>C monitor of voltage, current, and temp
- Programmable voltage, current limit, inhibit/enable through I<sup>2</sup>C

- Optional extended hold-up module (SEMI F47 compliance)
- Increased power density to 50% over standard MP
- External switching frequency sync input
- Optional conformal coating
- Industrial temp range (-40 °C to 70 °C)
- No preload required
- Industrial shock/vibration (> 50G's)

## SAFETY

- UL UL60950/UL2601\*\*
- CSA CSA22.2 No. 234 Level 5
- TUV EN60950/EN60601-1\*\*
- BABT Compliance to EN60950/EN60601 BS7002
- CB Certificate and report
- CE Mark to LVD

## AT A GLANCE

### Total Power:

Up to 1500 W

### Input Voltage:

85 to 264 Vac  
120 to 300 Vdc

### # of Outputs:

Up to 21



ENG-IMP-235-01 3.17

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## ELECTRICAL SPECIFICATIONS

| Input                   |                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input range             | 85 to 264 Vac; 120 to 300 Vdc<br>(limited to 300 Vdc in medical applications)                                                                                                 |
| Frequency               | 47 to 63 Hz (iMP1 47 to 440 Hz)                                                                                                                                               |
| Inrush current          | 40 A peak maximum (soft start)                                                                                                                                                |
| Efficiency              | Up to 85% @ full case load                                                                                                                                                    |
| Power Factor            | 0.99 typ. meets EN61000-3-2 (n/a @ 440 Hz)                                                                                                                                    |
| Turn-on time            | AC on 2.0 sec typ., inhibit/enable 150 ms typical<br>Programmable delay; 50 ms internal turn-on delay (Dual Output only)                                                      |
| EMI filter              | CISPR 22/EN55022 Level "B"***                                                                                                                                                 |
| Leakage current         | 300 $\mu$ A max. @ 240 Vac; 47 - 63 Hz                                                                                                                                        |
| Radiated EMI            | CISPR 22/EN55022 Level "B"***                                                                                                                                                 |
| Holdover storage        | 20 ms minimum (independent of input Vac) additional 34 ms holdover<br>storage with optional HUP module (SEMI F47 compatible).<br>For iMP4 15 ms (low-line), 10 ms (high-line) |
| AC OK                   | > 5 ms early warning min. before outputs lose regulation<br>Full cycle ride thru (50 Hz) (n/a on iMP4 > 750 W @ 90 Vac)                                                       |
| Harmonic distortion     | Meets EN61000-3-2                                                                                                                                                             |
| Isolation               | Meets EN60950 and EN60601<br>Input to output: 4000 Vac; input to ground: 1500 Vac; output to ground: 400 Vdc<br>Meets 1 MOPP Primary to ground, 2 MOPP Primary to Secondary   |
| Global inhibit / enable | TTL, Logic "1" and Logic "0"; configurable                                                                                                                                    |
| Input fuse (internal)   | iMP4: 16 A; iMP8: 20 A; iMP1: 25 A (both lines fused)                                                                                                                         |
| Warranty                | 2 years                                                                                                                                                                       |

## ELECTRICAL SPECIFICATIONS (CONTINUED)

| Output                                   |                                                                                                                                                                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adjustment range*                        | ± 10% minimum all outputs (manual)<br>(full module adjustment range using I <sup>2</sup> C)                                                                                                                                          |
| Factory set point accuracy               | 1%                                                                                                                                                                                                                                   |
| I <sup>2</sup> C output program accuracy | ± 5%                                                                                                                                                                                                                                 |
| Margining                                | ± 4 - 6% nominal analog (single output module only)                                                                                                                                                                                  |
| Overall regulation                       | 0.4% or 20 mV max. (1500 W modules 1% max.) (36 W modules 4% maximum)                                                                                                                                                                |
| Ripple                                   | RMS: 0.1% or 10 mV, whichever is greater<br>Pk-Pk: 1.0% or 50 mV, whichever is greater<br>Bandwidth limited to 20 MHz                                                                                                                |
| Dynamic response                         | < 2% or 100 mV, with 25% load step                                                                                                                                                                                                   |
| Recovery time                            | To within 1% in < 300 µsec                                                                                                                                                                                                           |
| Overcurrent protection**                 | Configurable through I <sup>2</sup> C (calibration required). Single output module and main output of the dual output module 105 - 120% of rated output current. Aux output of dual output module 105 - 140% of rated output current |
| Short-circuit protection                 | Protected for continuous short-circuit.<br>Recovery is automatic upon removal of short                                                                                                                                               |
| Overvoltage protection*                  | Configurable through I <sup>2</sup> C                                                                                                                                                                                                |
|                                          | Single output module: 2 to 5.5 V 122 to 134%; 6 to 60 V 110 to 120%                                                                                                                                                                  |
|                                          | Dual output module: 2 to 6 V 122 to 134%; 8 to 28 V 110 to 120%                                                                                                                                                                      |
|                                          | Triple output module: 110 - 120% of highest voltage rating                                                                                                                                                                           |
| Thermal protection*<br>(OTP and OTW)     | Configurable through I <sup>2</sup> C<br>All outputs disabled when internal temp exceeds safe operating range. > 5 ms warning (AC OK signal) before shutdown                                                                         |
| Remote sense                             | Up to 0.5 V total drop (not available on triple output module)                                                                                                                                                                       |
| Single wire parallel                     | Current share to within 2% of total rated current                                                                                                                                                                                    |
| DC OK*                                   | ± 5% of nominal. Configurable through I <sup>2</sup> C                                                                                                                                                                               |
| Minimum load                             | Not required                                                                                                                                                                                                                         |
| Housekeeping bias voltage                | 5 Vdc @ 1.0 A max. present whenever AC input is applied (Optional 2.0 A available)                                                                                                                                                   |
| Module inhibit*                          | Configured and controlled through I <sup>2</sup> C                                                                                                                                                                                   |
| Switching frequency                      | 250k Hz accepts external sync signal                                                                                                                                                                                                 |
| Output/Output isolation                  | > 1 Megohm, 500 V                                                                                                                                                                                                                    |
| External sync                            | TTL clock input signal used to adjust switching frequency. Frequency 500 kHz<br>± 20%; Duty cycle 40 - 55%                                                                                                                           |

\* Can be controlled via I<sup>2</sup>C

\*\* Controlled via I<sup>2</sup>C but requires load calibration

## INTERNAL PART NUMBER REFERENCE TABLE

| Part #       | Description | Case Code |
|--------------|-------------|-----------|
| 73-580-0001i | iMP8 Case   | iMP8      |
| 73-690-0001i | iMP1 Case   | iMP1      |
| 73-540-0001i | iMP4 Case   | iMP4      |

## ENVIRONMENTAL SPECIFICATIONS

|                                |                                                                                                    |
|--------------------------------|----------------------------------------------------------------------------------------------------|
| Operating temperature          | -40 °C to 70 °C ambient. Derate each output 2.5% per degree from 50 °C to 70 °C. (-20 °C start up) |
| Storage temperature            | -40 °C to +85 °C                                                                                   |
| Electromagnetic susceptibility | Designed to meet EN61000-4; -2, -3, -4, -5, -6, -8, -11 Level 3                                    |
| Humidity                       | Operating; non-condensing 10% to 95% RH                                                            |
| Vibration                      | IEC68-2-6 to the levels of IEC721-3-2                                                              |
| MTBF demonstrated              | > 550,000 hours at full load, 220 Vac and 25 °C ambient conditions                                 |

## OUTPUT MODULE LINE-UP

| Module Code                               | 1         | 2         | 3         | 5         | 4         |     | —         |
|-------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----|-----------|
| Module Type                               | Single    | Single    | Single    | Single    | Dual      |     | Triple    |
| Max output power                          | 210 W     | 360 W     | 750 W     | 1500 W    | 144 W     |     | 36 W      |
| Max output current                        | 35 A      | 60 A      | 150 A     | 300 A     | 10 A      |     | 2 A       |
| Output voltages available                 | 2 to 60 V | 2 to 60 V | 2 to 60 V | 2 to 60 V | 2 to 28 V |     | 2 to 28 V |
| Standard voltage increments               | 25        | 25        | 25        | 18        | 16        |     | 18        |
|                                           |           |           |           |           | V1        | V2  | V1,V2,V3  |
| Remote sense                              | Yes       | Yes       | Yes       | Yes       | Yes       | Yes | No        |
| Remote margin                             | Yes       | Yes       | Yes       | Yes       | No        | No  | No        |
| V-Program - I <sup>2</sup> C Control      | Yes       | Yes       | Yes       | Yes       | Yes       | Yes | No        |
| Active Current Share                      | Yes       | Yes       | Yes       | Yes       | Yes       | No  | No        |
| Module Inhibit - I <sup>2</sup> C Control | Yes       | Yes       | Yes       | Yes       | Yes       | Yes | Yes       |
| Module Inhibit - Analog                   | Yes       | Yes       | Yes       | Yes       | Yes       | No  | No        |
| Overvoltage/Overcurrent protection        | Yes       | Yes       | Yes       | Yes       | Yes       | Yes | Yes       |
| Minimum load required                     | No        | No        | No        | No        | No        | No  | No        |
| Slots occupied in any iMP case            | 1         | 2         | 3         | 4         | 1         |     | 1         |

OUTPUT MODULE VOLTAGE/CURRENT\*

| Voltage                | Voltage Code | Single Output Module Code |        |        |         | Dual Output** |       | Triple Output |       |       | I <sub>C</sub> Adjustment Ranges*** |
|------------------------|--------------|---------------------------|--------|--------|---------|---------------|-------|---------------|-------|-------|-------------------------------------|
|                        |              | 1                         | 2      | 3      | 5       | 4             | 4     | -             | -     | -     |                                     |
| 2 V                    | A            | 35 A                      | 60 A   | 150 A  | 300 A   | 10 A          | 10 A  | —             | —     | 2 A   | 1.8 - 2.2                           |
| 2.2 V                  | B            | 35 A                      | 60 A   | 150 A  | 300 A   | 10 A          | 10 A  | —             | —     | 2 A   | 2.0 - 2.4                           |
| 3 V                    | C            | 35 A                      | 60 A   | 150 A  | 300 A   | 10 A          | 10 A  | —             | —     | 2 A   | 2.7 - 3.3                           |
| 3.3 V                  | D            | 35 A                      | 60 A   | 150 A  | 300 A   | 10 A          | 10 A  | —             | —     | 2 A   | 3.0 - 3.6                           |
| 5 V                    | E            | 35 A                      | 60 A   | 150 A  | 300 A   | 10 A          | 10 A  | —             | —     | 2 A   | 4.5 - 5.5                           |
| 5.2 V                  | F            | 35 A                      | 60 A   | 144 A  | 288 A   | 10 A          | 10 A  | —             | —     | 2 A   | 4.7 - 5.7                           |
| 5.5 V                  | G            | 34 A                      | 58 A   | 136 A  | 273 A   | 10 A          | 10 A  | —             | —     | 2 A   | 5.0 - 6.1                           |
| 6.0 V                  | H            | 23 A                      | 42 A   | 97.5 A | 250 A   | 10 A*         | 10 A* | —             | —     | 2 A   | 5.4 - 6.6                           |
| 8.0 V                  | I            | 20 A                      | 36 A   | 84.4 A | 187.5 A | 10 A          | 4 A   | 1 A           | 1 A   | 1 A   | 7.2 - 8.8                           |
| 10 V                   | J            | 18 A                      | 32 A   | 75 A   | 140 A   | 10 A          | 4 A   | 1 A           | 1 A   | 1 A   | 9.0 - 11.0                          |
| 11 V                   | K            | 17 A                      | 31 A   | 68 A   | 136.3 A | 10 A          | 4 A   | 1 A           | 1 A   | 1 A   | 9.9 - 12.1                          |
| 12 V                   | L            | 17 A                      | 30 A   | 62.5 A | 125 A   | 10 A          | 4 A   | 1 A           | 1 A   | 1 A   | 10.8 - 13.2                         |
| 14 V                   | M            | 14 A                      | 21 A   | 53.5 A | 107 A   | 9 A           | 4 A   | 1 A           | 1 A   | 1 A   | 12.6 - 15.4                         |
| 15 V                   | N            | 14 A                      | 20 A   | 50 A   | 100 A   | 8 A           | 4 A   | 1 A           | 1 A   | 1 A   | 13.5 - 16.5                         |
| 18 V                   | O            | 11 A                      | 19 A   | 41.6 A | 83.3 A  | —             | —     | —             | 0.5 A | 0.5 A | 16.2 - 19.8                         |
| 20 V                   | P            | 10.5 A                    | 18 A   | 37.5 A | 75 A    | —             | —     | —             | 0.5 A | 0.5 A | 18.0 - 22.0                         |
| 24 V                   | Q            | 8.5 A                     | 15 A   | 30 A   | 62.5 A  | 4 A           | 2 A   | —             | 0.5 A | 0.5 A | 21.6 - 26.4                         |
| 28 V                   | R            | 6.7 A                     | 11 A   | 26.8 A | 53.5 A  | 3 A           | 2 A   | —             | 0.5 A | 0.5 A | 25.2 - 30.8                         |
| 30 V                   | S            | 6.5 A                     | 11 A   | 25 A   | 50 A    | —             | —     | —             | —     | —     | 27.0 - 33.0                         |
| 33 V                   | T            | 6.2 A                     | 10.9 A | 22.7 A | 35.8 A  | —             | —     | —             | —     | —     | 29.7 - 36.3                         |
| 36 V                   | U            | 5.8 A                     | 10 A   | 20.8 A | 35.8 A  | —             | —     | —             | —     | —     | 32.4 - 39.6                         |
| 42 V                   | V            | 4.2 A                     | 7.5 A  | 16 A   | 35.7 A  | —             | —     | —             | —     | —     | 37.8 - 46.2                         |
| 48 V                   | W            | 4.0 A                     | 7.5 A  | 15.6 A | 31.2 A  | —             | —     | —             | —     | —     | 43.2 - 52.8                         |
| 54 V                   | X            | 3.7 A                     | 6.0 A  | 13.9 A | 27.7 A  | —             | —     | —             | —     | —     | 48.6 - 59.4                         |
| 60 V                   | Y            | 3.5 A                     | 6.0 A  | 12.5 A | 25 A    | —             | —     | —             | —     | —     | 54.0 - 66.0                         |
| <b>Contact Factory</b> |              |                           |        |        |         |               |       |               |       |       |                                     |
| Special*               | Z            | 35 A                      | 60 A   | 150 A  | 300 A   | —             | 10 A  |               |       |       | 2.3 - 2.6                           |
| Special*               | Z            | 35 A                      | 60 A   | 150 A  | 300 A   | —             | 10 A  |               |       |       | 3.7 - 4.4                           |
| Special*               | Z            | 20 A                      | 36 A   | 80 A   | 140 A   | —             | 8 A   |               |       |       | 6.7 - 7.1                           |

\* Increments of current not shown can be achieved by paralleling modules (add currents of each module selected).

\*\*Total output power on dual model must not exceed 144 W.

\*\*\* For single output modules only.

Bold black lines reference lines indicate physical module groupings

## OUTPUT MODULE VOLTAGE/CURRENT\* (CONTINUED)

### Parallel Codes

|        |        |        |        |        |        |        |                         |
|--------|--------|--------|--------|--------|--------|--------|-------------------------|
| Slot 7 | Slot 6 | Slot 5 | Slot 4 | Slot 3 | Slot 2 | Slot 1 | iMP4<br>available slots |
| Slot 6 | Slot 5 | Slot 4 | Slot 3 | Slot 2 | Slot 1 |        | iMP8<br>available slots |
| Slot 5 | Slot 4 | Slot 3 | Slot 2 | Slot 1 |        |        | iMP1<br>available slots |
| 7      | 6      | 5      | 4      | 3      | 2      | 1      |                         |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 0 = no parallel         |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 1 = 1 & 2               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 2 = 2 & 3               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 3 = 3 & 4               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 4 = 4 & 5               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 5 = 3 & 4 & 5           |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 6 = 5 & 6               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 7 = 4 & 5 & 6           |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 8 = 6 & 7               |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | 9 = 3 & 4, 6 & 7        |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | A = 1 & 2, 3 & 4, 5 & 6 |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | C = 2 & 3, 4 & 5        |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | E = 3 & 4, 5 & 6        |
| ●      | ●      | ●      | ●      | ●      | ●      | ●      | F = 2 & 3, 4 & 5, 6 & 7 |

### Ordering Notes

1. The cases and modules of both MP and iMP series can be inter-changed to allow more flexibility. If intelligent modules are used with non-intelligent cases, a numeric code "4" is placed at the end of the module code (ex. 4LL0 becomes 4LL4).
2. USB to I<sup>2</sup>C module order code 73-769-001

## ORDERING INFORMATION

| Case Size                                                                                                                                                                                                                                       | Module/Voltage/Option Codes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Case Option Codes                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Software Code                                                | Hardware Code                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|
|                                                                                                                                                                                                                                                 | First - Module Code<br>Second - Voltage Code<br>Third - Option Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                              |                                                  |
| <b>iMP1*</b>                                                                                                                                                                                                                                    | <b>3L0 - 2E2 - 1Q1 - 4LL0</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>A</b>                                                     | <b>###</b>                                       |
| <b>Case Size (mm)</b><br>4 = 2.5" x 5" x 10"; 750 W - 1158 W, 5 Slots (63.5 x 127 x 254 mm)<br>8 = 2.5" x 7" x 10"; 1000 W - 1200 W, 6 Slots (63.5 x 177.8 x 254 mm)<br>1 = 2.5" x 8" x 11"; 1200 W - 1500 W, 7 Slots (63.5 x 203.2 x 279.4 mm) | <b>Module Codes</b><br>Module/voltage/option codes<br>Module codes:<br>(None) = 36 W triple O/P (1 slot)<br>1 = 210 W single O/P (1 slot)<br>2 = 360 W single O/P (2 slot)<br>3 = 750 W single O/P (3 slot)<br>4 = 144 W dual O/P (1 slot)<br>5 = 1500 W single O/P (4 slot)<br>6 - 9 = future<br><b>Voltage Codes:</b><br>See Output Module Voltage/Current table above<br><b>Option Codes:</b><br>0 = Standard<br>1 = Module enable<br>2 = Constant current<br>3 = 1 & 2 combined<br>4 = Set for use in standard (non-intelligent case)<br>5 = Shutdown mode for 1500 W<br>6 = 1 & 5 combined<br>7 - 9 = future | <b>Case Option Codes</b><br>First digit<br>0 - 9, A - Z parallel code (See Parallel Codes table above)<br>Second digit<br>0 = No options<br>1 = Reverse air<br>3 = Global enable<br>4 = Fan idle with inhibit<br>5 = Opt 1 + Opt 3<br>6 = Opt 1 + Opt 4<br>7 = Opt 3 + Opt 4<br>8 = Opt 1 + 3 + 4<br>9 = RS485 73-544-002<br>A = RS485 73-544-002 + Reverse air<br>C = Opt 3 + Opt 9<br>D = CAN BUS 73-544-003<br>E = Opt 3 + Opt D<br>F = RS485 - MODBUS 73-544-005 | Software code used for configuration change. "A" is standard | Factory assembled for hardware of firmware mods. |

\* Note: Add "E" after iMP4 to denote IEC input option.  
e.g. iMP4E (Not available on iMP8 or iMP1)

## ORDERING INFORMATION (CONTINUED)

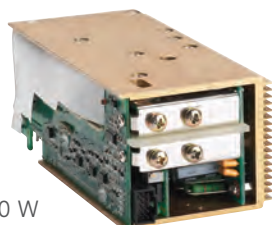
### Single



210 W



360 W



750 W



1500 W ( 2.0 to 8.0

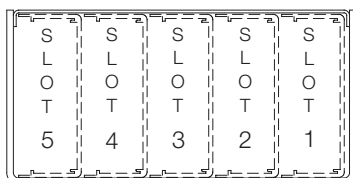


1500 W ( 10 to 60 V)

1500 W with Bus Bar  
Adapter Option (used with  
the 10 to 60 V module)



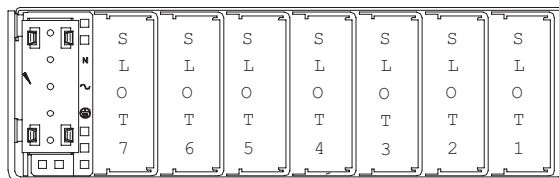
### iMP4 (AC input on opposite side)



iMP4 = 2.5" x 5" x 10" 5 available slots  
(63.5 x 127 x 254 mm)

| Input        |               |
|--------------|---------------|
| 90 - 264 Vac | 180 - 264 Vac |
| 750 W max.   | 1158 W max.   |

### iMP8 and iMP1



#### iMP1 only

iMP8 = 2.5" x 7" x 10" 6 available slots  
(63.5 x 177.8 x 254 mm)

iMP1 = 2.5" x 8" x 11" 7 available slots  
(63.5 x 203.2 x 279.4 mm)

| Input        |               |
|--------------|---------------|
| 85 - 264 Vac | 180 - 264 Vac |
| 1000 W max.  | 1200 W max.   |

1200 W max. 1500 W max.

### Dual



144 W

### Triple



36 W

## PIN CONNECTORS

Figure 1. AC Input

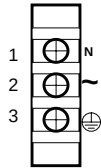
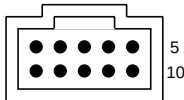


Figure 2. Connector J1



Mates with  
Molex 90142-0010 Housing  
90119-2110 Pin

Connector Kit Part No.:  
70-841-004

Figure 3. Connector J2



Mates with  
Landwin 2050S1000 Housing  
2053T011V Pin  
or  
JST PHDR-10VS Housing  
JST SPHD-002T-P0.5 (28-24)  
JST SPHD-001T-P0.5 (26-22)

Connector Kit Part No.:  
70-841-023

## AC Input

| Pin No. | Function               |
|---------|------------------------|
| 1       | AC neutral             |
| 2       | AC line (hot)          |
| 3       | Chassis (earth) ground |

## PFC Input Connector (Control and signals)

| Pin No. | Function                                 |
|---------|------------------------------------------|
| 1       | Input AC OK - "emitter"                  |
| 2       | Input AC OK - "collector"                |
| 3       | Global DC OK - "emitter"                 |
| 4       | Global DC OK - "collector"               |
| 5       | External Sync                            |
| 6       | Global inhibit/optional enable logic "0" |
| 7       | Global inhibit/optional enable logic "1" |
| 8       | Global inhibit/optional enable return    |
| 9       | +5 VSB housekeeping                      |
| 10      | +5 VSB housekeeping return               |

I<sup>2</sup>C Bus Output Connector

| Pin No. | Function                        |
|---------|---------------------------------|
| 1       | No connection                   |
| 2       | No connection                   |
| 3       | No connection                   |
| 4       | Serial clock signal (SCL)       |
| 5       | Serial data signal (SDA)        |
| 6       | Address bit 0 (A0)              |
| 7       | Address bit 1 (A1)              |
| 8       | Address bit 2 (A2)              |
| 9       | Secondary return (GND)          |
| 10      | 5 Vcc external bus (5 VCC. Bus) |



## MECHANICAL DRAWINGS

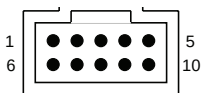
### IMP Modules

#### DC-DC Converter Output Modules

| Control Signal Information, J1 Control Connector |                             |                           |
|--------------------------------------------------|-----------------------------|---------------------------|
| Pin No.                                          | Function                    |                           |
| 1                                                | + Remote Sense              | single or dual o/p main   |
| 2                                                | Remote Margin / V. Program  | single o/p                |
| 3                                                | Margin High                 | single o/p                |
| 4                                                | - Remote Sense / Margin Low | single or dual o/p main   |
| 5                                                | Spare                       |                           |
| 6                                                | Module, Isolated Inhibit    | single or dual o/p        |
| 7                                                | Module Inhibit Return       | single or dual o/p        |
| 8                                                | Current Share (SWP)         | single or dual o/p main   |
| 9                                                | + Remote Sense V2           | dual o/p, single is spare |
| 10                                               | - Remote Sense V2           | dual o/p, single is spare |

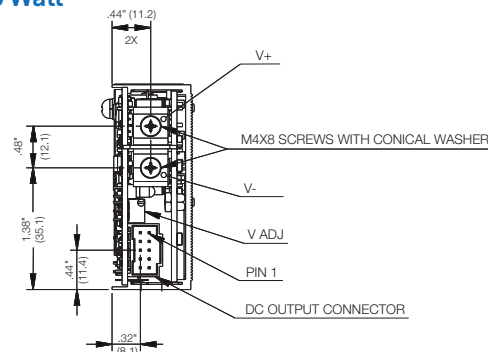
\* Note: All IMP modules have a green DCOK LED. (except for 36 W module)

Figure 4. Connector J1

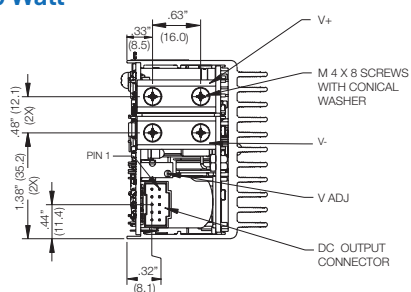


Mates with  
Molex 90142-0010 Housing  
90119-2110 Pin

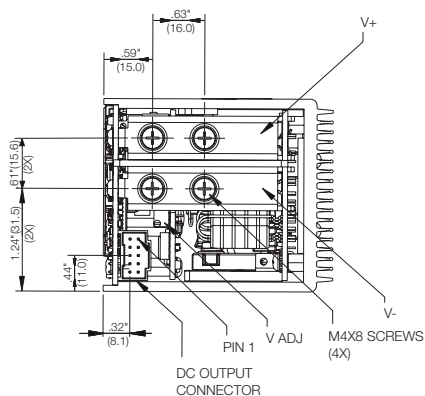
#### Single 210 Watt



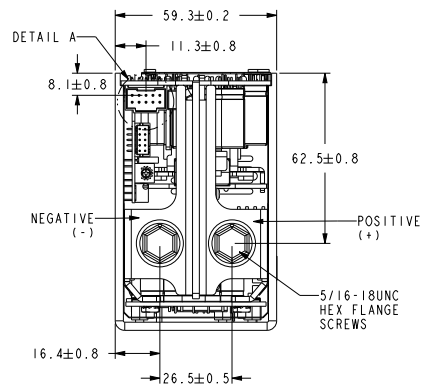
#### Single 360 Watt



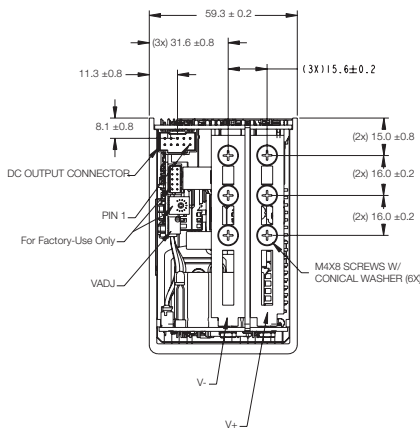
#### Single 750 Watt



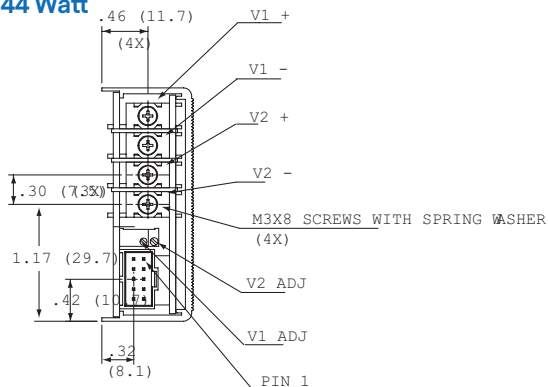
#### Single 1500 Watt 2-8 V



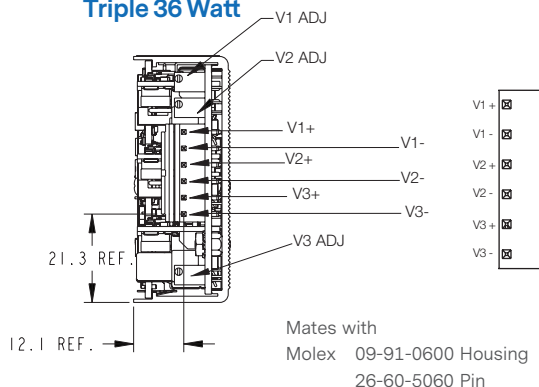
#### Single 1500 Watt 10-60 V



#### Dual 144 Watt



#### Triple 36 Watt

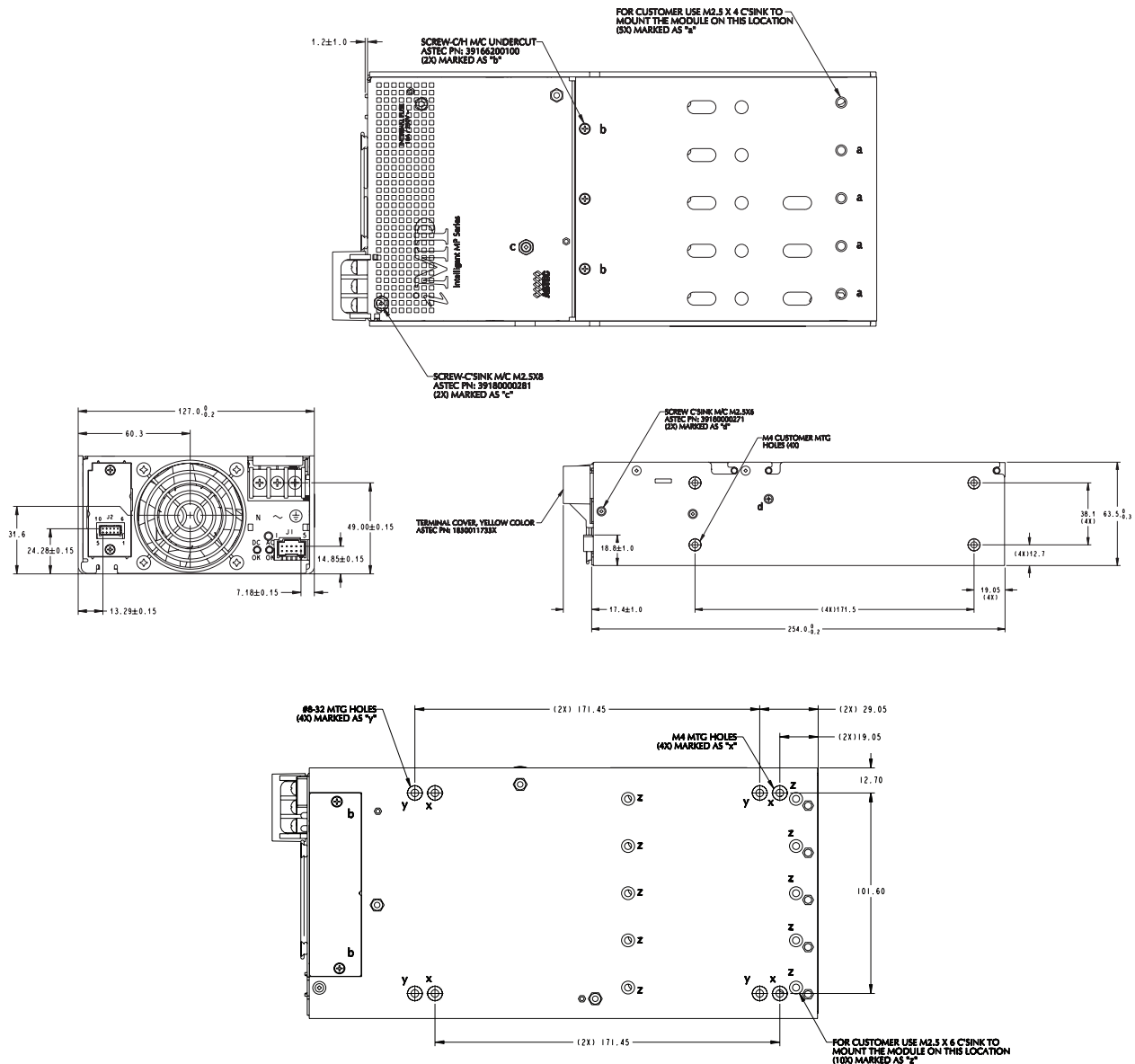


## IMP SERIES

## iMP4 (750/1158 Watts Max)

5-Inch Case Size: iMP4: 2.5" x 5" x 10" (63.5 mm x 127 mm x 254 mm)

Weight: iMP4 Case: 3 lbs. • 360 W Single 1.0 lb. • 750 W Single: 1.6 lbs. 144 W Dual: 0.6 lb.



## Notes:

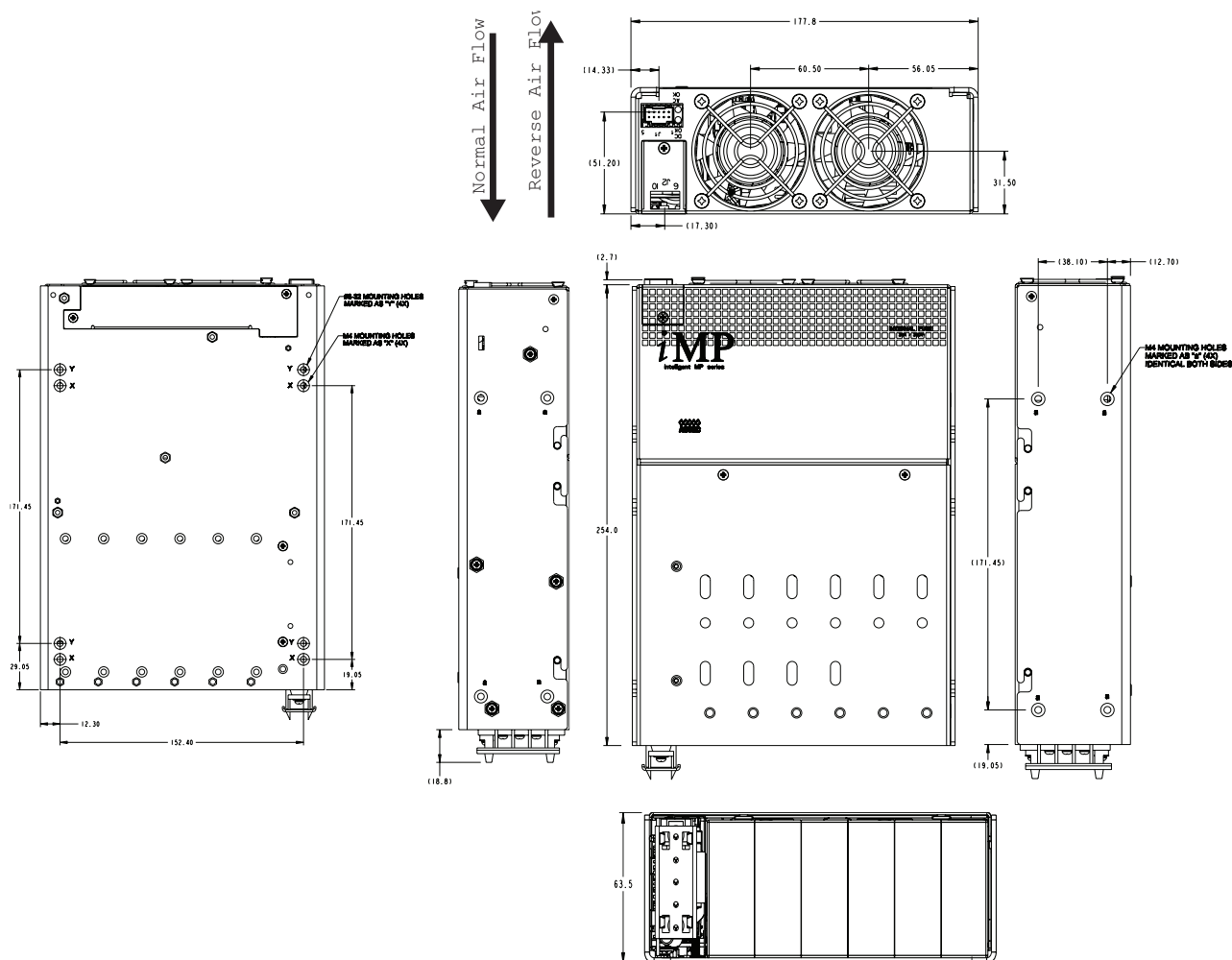
1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs. (0.67 N-m). (Optional IEC input connector)
2. Control connectors: (J1) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series). Connector kit includes mating connector and 10 pins, Astec part #70-841-004. (J2) 10 position housing (Landwin 2051P1000T). Mates with housing 2050S1000 (Landwin) with 2053T011P (Landwin) pins or JST PHDR-IOVS Housing and JST SPHD-002T-PO.5 pins.
3. Chassis material: aluminum with chemical film coating (conductive).
4. All dimensions are in millimeters and inches, and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8 mm). Max. torque: 5 in-lbs. (0.57 N-m).
6. Output module connections: All single O/P modules are M4 x 8 mm screws. Max. torque: 10 in-lbs. (1.13 N-m).  
Dual O/P module is M3 x 8 mm screws. Max. torque: 5 in-lbs. (0.57 N-m).

## IMP SERIES (CONTINUED)

### IMP8 (1000/1200 Watts Max)

7-Inch Case Size: iMP8: 2.5" x 7" x 10" (63.5 mm x 177.8 mm x 254 mm)

Weight: iMP8 Case: 4.1 lbs. • 210 W Single: 0.6 lb. • 360 W Single: 1.0 lb. 750 W Single: 1.6 lbs. 144 W Dual: 0.6 lb.



#### Notes:

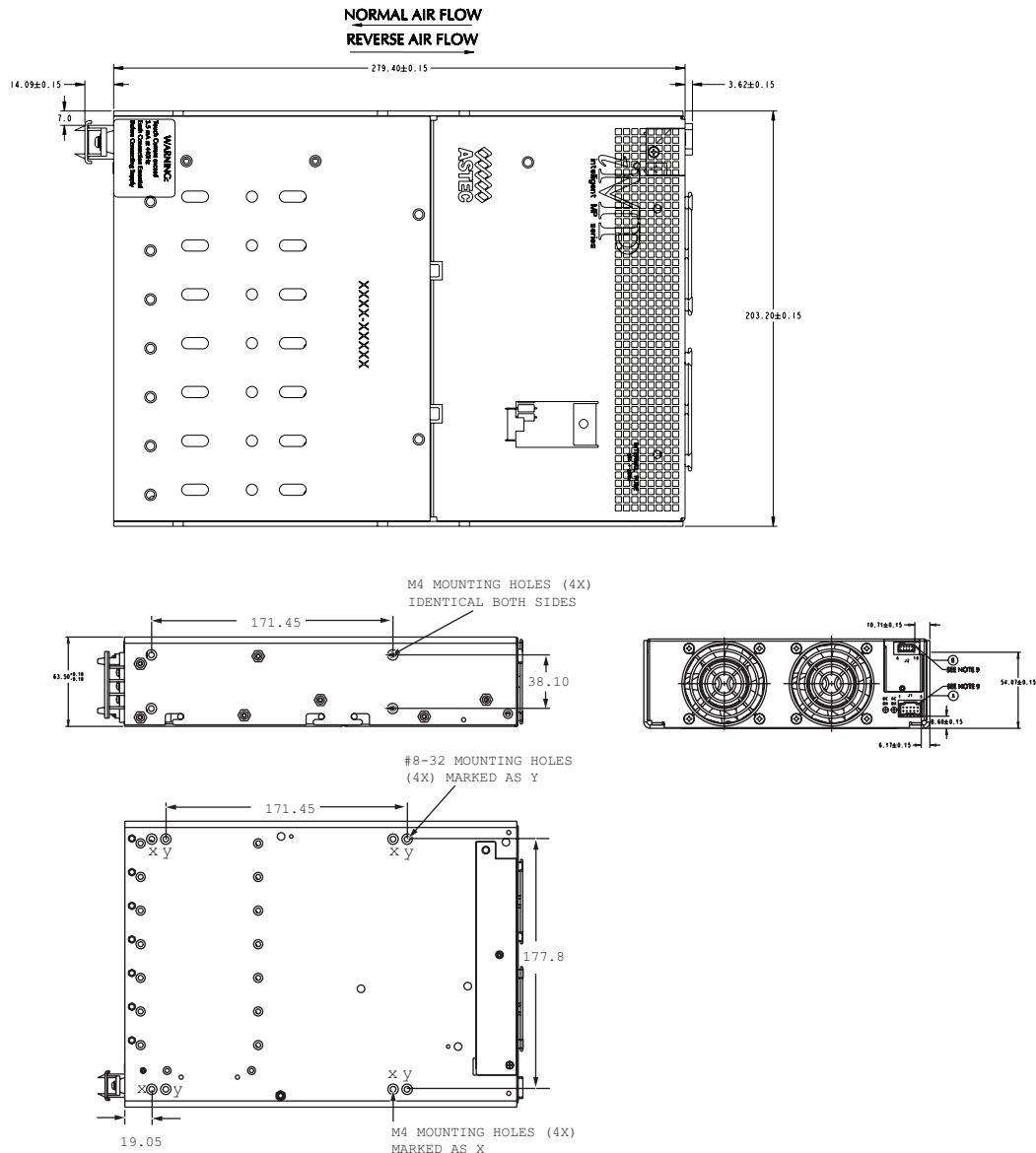
1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs. (0.67 N-m).
2. Control connectors: (J1) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series) Connector kit includes mating connector and 10 pins, Astec part #70-841-004. (J2) 10 position housing (Landwin 2051P1000T). Mates with housing 2050S1000 (Landwin) with 2053T011P (Landwin) pins or JST PHDR-IOVS Housing and JST SPHD-002T-PO.5 pins.
3. Chassis material: aluminum with chemical film coating (conductive).
4. All dimensions are in millimeters and inches, and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8 mm). Max. torque: 5 in-lbs. (0.57 N-m).
6. Output module connections: All single O/P modules are M4 x 8 mm screws. Max. torque: 10 in-lbs. (1.13 N-m). Dual O/P module is M3 x 8 mm screws. Max. torque: 5 in-lbs. (0.57 N-m).

## IMP SERIES (CONTINUED)

**iMP1 (1200/1500 Watts Max)**

8-Inch Case Size: iMP1: 2.5" x 8" x 11" (63.5 mm x 203.2 mm x 279.4 mm)

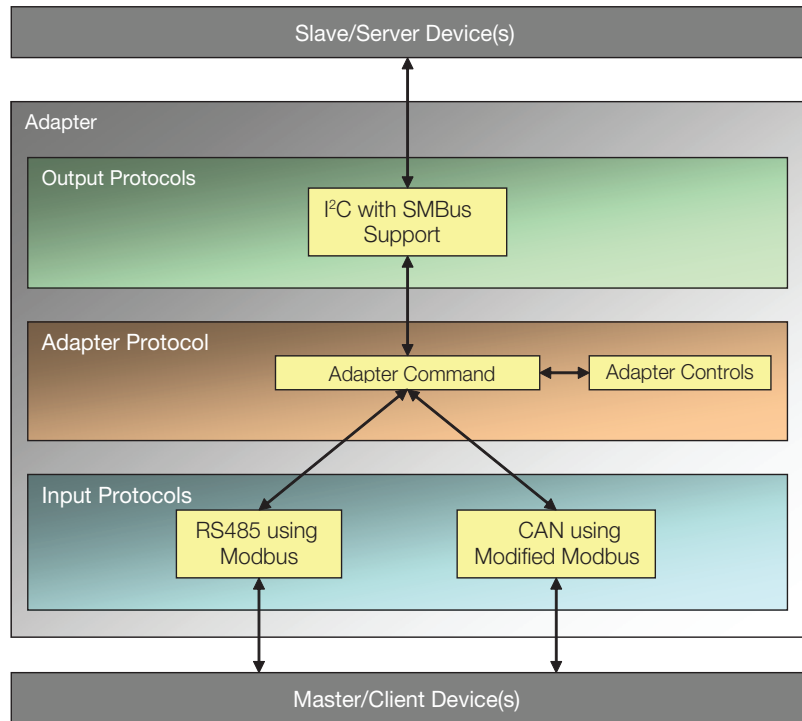
Weight: iMP1 Case: 5.0 lb. • 210 W Single: 0.6 lb. • 360 W Single: 1.0 lb. 750 W Single: 1.6 lb. • 144 W Dual: 0.6 lb.

**Notes:**

1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs (0.67 N-m).
2. Control connectors: (J1) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series). Connector kit includes mating connector and 10 pins, Astec part #70-841-004. (J2) 10 position housing (Landwin 2051P1000T). Mates with housing 2050S1000 (Landwin) with 2053T011P (Landwin) pins or JST PHDR-IOVS Housing and JST SPHD-002T-PO.5 pins.
3. Chassis material: aluminum with chemical film coating (conductive).
4. All dimensions are in millimeters and inches, and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8 mm). Max. torque: 5 in-lbs. (0.57 N-m).
6. Output module connections: All single O/P modules are M4 x 8 mm screws. Max. torque: 10 in-lbs. (1.13 N-m). Dual O/P module is M3 x 8 mm screws. Max. torque: 5 in-lbs. (0.57 N-m).

## OPTIONAL CANBUS OR RS485 INTERFACE

The RS485/CAN-to-I<sup>2</sup>C uses 2 Input Protocols and 1 Output Protocol.  
The Input Protocols used are RS485 using Modbus (Command Index: 0x01), and CAN using modified Modbus (Command Index: 0x02).  
The Output Protocol use is: I<sup>2</sup>C with SMBus support (Command Index: 0x80).



### RS485/CAN - to - I<sup>2</sup>C

For detailed info, download the Software Requirements Specification (SRS) from [https://www.artesyn.com/assets/software\\_requirement\\_specifica\\_1248401123.pdf](https://www.artesyn.com/assets/software_requirement_specifica_1248401123.pdf)



IMP CAN RS485