

The PGW100 series of 100W external wall mount AC-DC power supplies conform to the Power Delivery protocol with outputs from 5V to 20V auto-selected based on the system's charging requirement. Their Class II construction, gasketed design and reinforced isolation provide enhanced safety in medical devices and household appliances. The PGW100 also offers interchangeable US, UK, EU, AU and CN mains connectors for global compatibility.

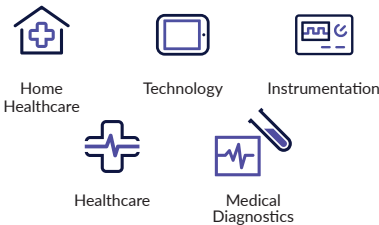
Worldwide medical and ITE safety agency approvals, low leakage currents, compact Gallium-Nitride (GaN) based design, wide 80-264VAC input for universal use, energy efficiency level VI (level VII ready) and support for multiple fast charging protocols, makes the PGW100 ideal for a wide range of industrial and BF-rated medical applications.



Features

- ▶ Output voltages from 5V to 20VDC
- ▶ Universal, single phase input: 80 to 264VAC
- ▶ Energy efficiency level VI (level VII ready) and EU2019/1782
- ▶ Meets USB PD 3.0 & QC4.0+ fast charging protocol
- ▶ Medical, home healthcare & ITE safety agency approvals
- ▶ IP22 environmental rating
- ▶ Low earth leakage current
- ▶ <0.15W standby power
- ▶ Class B conducted & radiated emissions
- ▶ 0 to +60°C operation
- ▶ 3 year warranty

Applications



Dimensions

97.0 x 57.0 x 34mm (3.82" x 2.24" x 1.34")

Models & ratings

| Model number <sup>(1)</sup> | Output voltage<br>Auto-selected by load | Output current | Output power | Total regulation <sup>(2)</sup> | Efficiency <sup>(3)</sup> |
|-----------------------------|-----------------------------------------|----------------|--------------|---------------------------------|---------------------------|
| PGW100PS20-I-BB             | 5.0V                                    | 3.0A           | 15.0W        | ±5%                             | 82.0%                     |
|                             | 9.0V                                    | 3.0A           | 26.0W        |                                 | 86.8%                     |
|                             | 12.0V                                   | 3.0A           | 36.0W        |                                 | 87.5%                     |
|                             | 15.0V                                   | 3.0A           | 45.0W        |                                 | 88.0%                     |
|                             | 20.0V                                   | 5.0A           | 100.0W       |                                 | 89.0%                     |

Notes:

1. Model number is for body with USB-C connector in case. AC plugs should be ordered separately, see pages 5 & 6 for order codes. To order body and 5 AC plugs, use order code PGW100PS20-IP-BB.

2. Total regulation includes initial set accuracy, line and load regulation.

3. Typical average value measured at 25%, 50%, 75% and 100% at 115VAC & 230VAC.

## Input

| Characteristic      | Minimum                                                                                           | Typical | Maximum | Units | Notes & conditions                                        |
|---------------------|---------------------------------------------------------------------------------------------------|---------|---------|-------|-----------------------------------------------------------|
| Input voltage       | 80                                                                                                |         | 264     | VAC   | Derate output linearly from 100% at 90VAC to 90% at 80VAC |
| Input frequency     | 47                                                                                                |         | 63      | Hz    |                                                           |
| Power factor        | 0.9                                                                                               |         |         |       | 230VAC full load, complies with EN61000-3-2 for Class A   |
| Input current       |                                                                                                   |         | 1.8     | A     | 100VAC full load.                                         |
| Inrush current      |                                                                                                   |         | 150     | A     | 264VAC, cold start +25°C                                  |
| No load input power |                                                                                                   |         | 0.15    | W     |                                                           |
| Input protection    | T4.0A/250V Internal fuse fitted in line and neutral                                               |         |         |       |                                                           |
| LED indicator       | LED (on case) status mode - standby (Amber), normal operation (Green), and fault (flashing Amber) |         |         |       |                                                           |

## Output

| Characteristic           | Minimum                                   | Typical | Maximum | Units    | Notes & conditions                                                                               |
|--------------------------|-------------------------------------------|---------|---------|----------|--------------------------------------------------------------------------------------------------|
| Output voltage           | 5                                         |         | 20      | VDC      | 5, 9, 12, 15, 20VDC. Auto selected by load                                                       |
| Minimum load             | 0                                         |         |         | A        | No minimum load required                                                                         |
| Start up delay           |                                           |         | 3       | s        |                                                                                                  |
| Start up rise time       |                                           | 200     |         | ms       | 115VAC                                                                                           |
| Hold up time             | 10                                        |         |         | ms       | Full load and 115VAC                                                                             |
| Total regulation         |                                           |         | ±5      |          | See models & ratings table                                                                       |
| Transient response       |                                           |         | 10      | %        | Recovery within 1% in less than 5ms for a 60% (20% - 80% - 20%) load step and 0.5A/μs slew rate  |
| Ripple & noise           |                                           |         | 200     | mV/pk-pk | 20MHz bandwidth and 10μF electrolytic at +25°C in parallel with 0.1μF ceramic capacitor at +25°C |
| Overshoot                |                                           |         | 10      | %        | Turn on & turn off                                                                               |
| Overload protection      | 110                                       |         | 150     | %        |                                                                                                  |
| Overvoltage protection   | 110                                       |         | 140     | %        | Auto recovery                                                                                    |
| Temperature coefficient  |                                           |         | 0.2     | %/°C     |                                                                                                  |
| Short circuit protection | Trip and restart (hiccup), auto resetting |         |         |          |                                                                                                  |
| Patient leakage current  |                                           | 85      | 100     | μA       | 264VAC, 60Hz                                                                                     |

## General

| Characteristic                                | Minimum                      | Typical     | Maximum | Units         | Notes & conditions                |
|-----------------------------------------------|------------------------------|-------------|---------|---------------|-----------------------------------|
| Efficiency                                    | See models and ratings table |             |         |               |                                   |
| Energy efficiency                             | Level VI (Level VII ready)   |             |         |               |                                   |
| Isolation: input to output<br>input to ground | 4000                         |             |         | VAC           | 2 x MOPP                          |
|                                               | 1500                         |             |         | VAC           | 1 x MOPP                          |
| Switching frequency                           |                              | 100         |         | kHz           | PFC converter                     |
|                                               | 20                           | 100         |         |               | Main converter (varies with load) |
| Power density                                 |                              | 0.53 (8.72) |         | W/cm³ (W/in³) |                                   |
| Mean time between failure                     | 300                          |             |         | khls          | TELECordia SR-332, 25°C, GB       |
| Weight                                        |                              | 290 (0.64)  |         | g (lb)        |                                   |

## Environmental

| Characteristic        | Minimum            | Typical | Maximum | Units | Notes & conditions                                                                     |
|-----------------------|--------------------|---------|---------|-------|----------------------------------------------------------------------------------------|
| Operating temperature | 0                  |         | +60     | °C    | Derate linearly from 100% load at +40°C to 50% load at +60°C, safety approved to +40°C |
| Operating humidity    | 10                 |         | 90      | %RH   | Non-condensing                                                                         |
| Operating altitude    |                    |         | 5000    | m     |                                                                                        |
| Storage temperature   | -40                |         | +80     | °C    |                                                                                        |
| Storage humidity      | 5                  |         | 95      | %RH   | Non-condensing                                                                         |
| Cooling               | Natural convection |         |         |       |                                                                                        |

## EMC: Emissions

| Phenomenon       | Standard        | Test level | Notes & conditions |
|------------------|-----------------|------------|--------------------|
| Conducted        | EN55032/EN55011 | Class B    |                    |
| Radiated         | EN55032/EN55011 | Class B    |                    |
| Harmonic current | EN61000-3-2     | Class A    |                    |
| Voltage flicker  | EN61000-3-3     |            |                    |

## EMC: Immunity

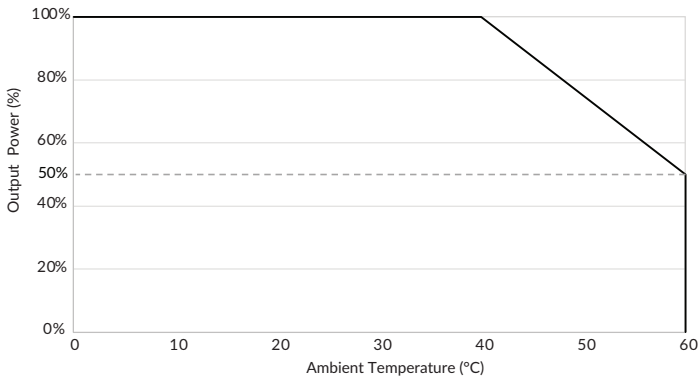
| Phenomenon             | Standard                | Test level               | Criteria | Notes & conditions                 |
|------------------------|-------------------------|--------------------------|----------|------------------------------------|
| ESD immunity           | EN61000-4-2             | 4                        | A        | ±8kV contact / ±15kV air discharge |
| Radiated               | EN61000-4-3             | 10V/m                    | A        |                                    |
| EFT/burst              | EN61000-4-4             | ±2kV                     | A        |                                    |
| Surges                 | EN61000-4-5             | 2                        | A        | ±1kV line to line                  |
| Conducted              | EN61000-4-6             | 6V                       | A        |                                    |
| Magnetic field         | EN61000-4-8             | 30A/m                    | A        |                                    |
| Dips and interruptions | EN55035<br>(115VAC)     | Dip:100% (0VAC), 10ms    | A        |                                    |
|                        |                         | Dip:30% (80.5VAC), 500ms | A        |                                    |
|                        |                         | Dip:100% (0VAC), 5000ms  | B        |                                    |
|                        | EN55035<br>(230VAC)     | Dip:100% (0VAC), 10ms    | A        |                                    |
|                        |                         | Dip:30% (181VAC), 500ms  | A        |                                    |
|                        |                         | Dip:100% (0VAC), 5000ms  | B        |                                    |
|                        | EN60601-1-2<br>(100VAC) | Dip:100% (0VAC), 10ms    | A        |                                    |
|                        |                         | Dip:100% (0VAC), 20ms    | B        |                                    |
|                        |                         | Dip:30% (70VAC), 500ms   | B        |                                    |
|                        |                         | Dip:100% (0VAC), 5000ms  | B        |                                    |
|                        | EN60601-1-2<br>(240VAC) | Dip:100% (0VAC), 10ms    | A        |                                    |
|                        |                         | Dip:100% (0VAC), 20ms    | B        |                                    |
|                        |                         | Dip:30% (168VAC), 500ms  | A        |                                    |
|                        |                         | Dip:100% (0VAC), 5000ms  | B        |                                    |

Safety approvals

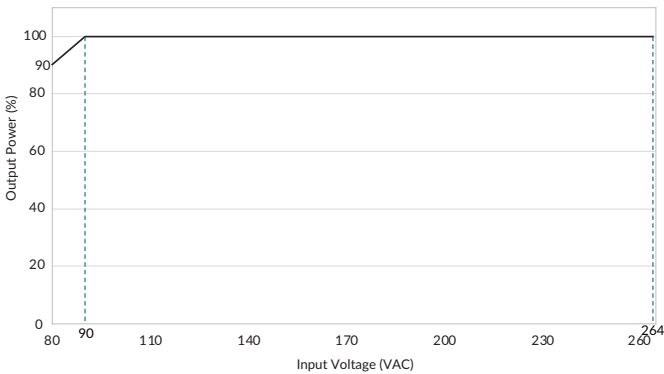
| Safety agency | Standard                                                     | Notes & conditions                                              |
|---------------|--------------------------------------------------------------|-----------------------------------------------------------------|
| UL            | UL 62368-1                                                   | Audio/video, information and communication technology equipment |
|               | ANSI/AAMI ES60601-1                                          | Medical                                                         |
| EN            | EN62368-1                                                    | Audio/video, information and communication technology equipment |
|               | EN60601-1, EN60601-1-11                                      | Medical                                                         |
| CB            | IEC62368-1                                                   | Audio/video, information and communication technology equipment |
|               | IEC60601-1, IEC60601-1-11                                    | Medical                                                         |
| CSA           | CAN/CSA C22.2 No. 62368-1-14                                 | Audio/video, information and communication technology equipment |
|               | CSA C22.2 No.60601-1                                         | Medical                                                         |
| CCC           | China Compulsory Certification GB17625.1, GB4943.1, GB/T9254 | Audio/video, information and communication technology equipment |
| AU/NZ         | AS/NZS 62368.1                                               | Audio/video, information and communication technology equipment |
| CE            | Meets all applicable directives                              |                                                                 |
| UKCA          | Meets all applicable directives                              |                                                                 |

Application notes

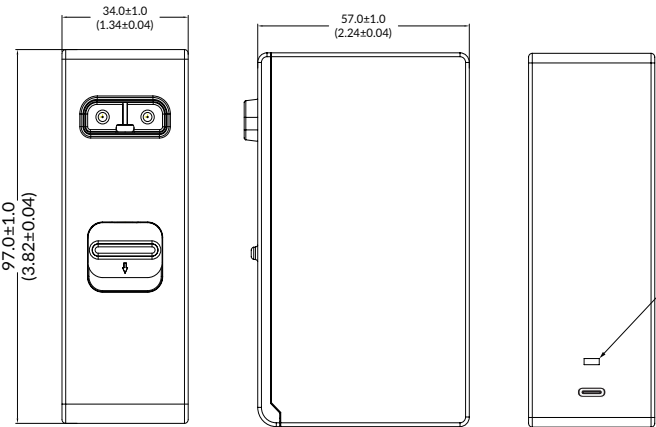
Ambient derating



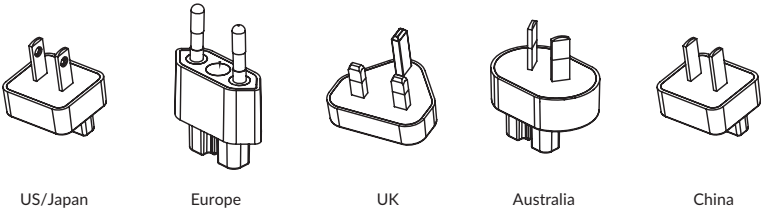
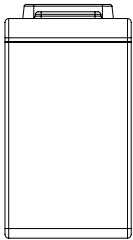
Input derating



Mechanical details

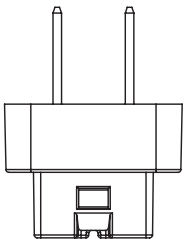
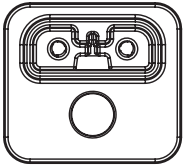
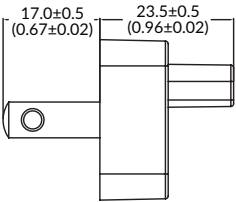
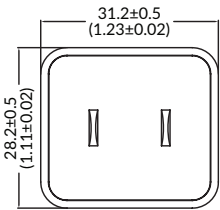


| Case LED indicator | Description                                                             |
|--------------------|-------------------------------------------------------------------------|
| Amber              | Charger is connected to AC but not connected to load                    |
| Green              | Charger is connected to AC and connected to load                        |
| Flashing amber     | Charger is connected to AC and there is a charging fault or load faulty |

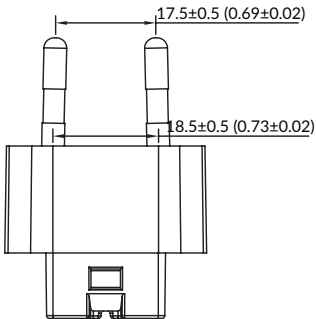
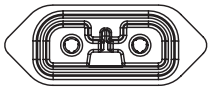
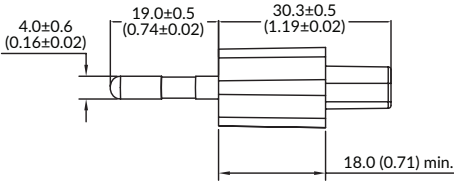
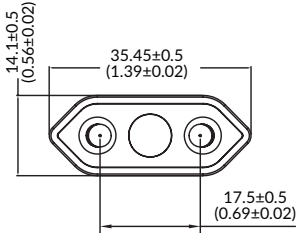


AC input plugs

AC plug for US, to order use part number **PGW PLUG US**



AC plug for Europe, to order use part number **PGW PLUG EU**



Notes:

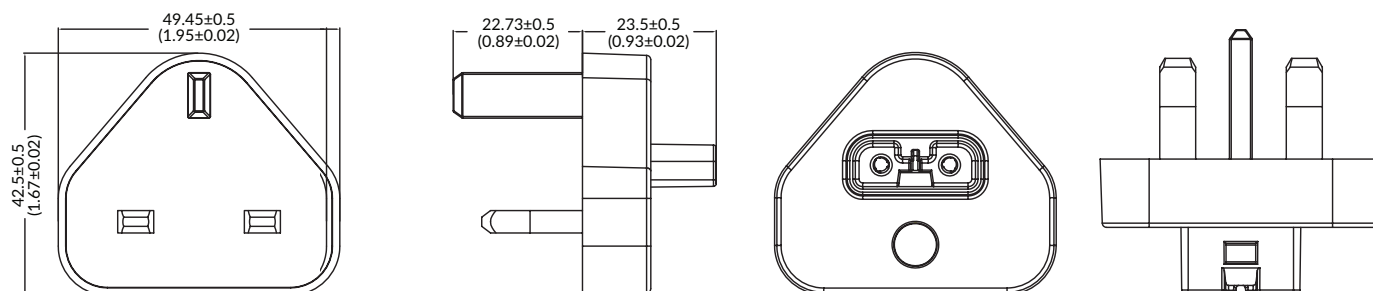
- 1. All dimensions shown in mm (inches).
- 2. Weight: 290g (0.64lb) approx.

3. Output connector: USB Type-C

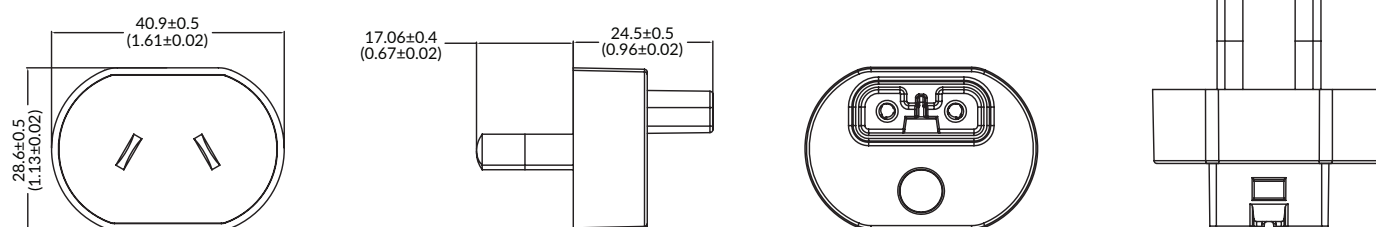
## Mechanical details

### AC input plugs

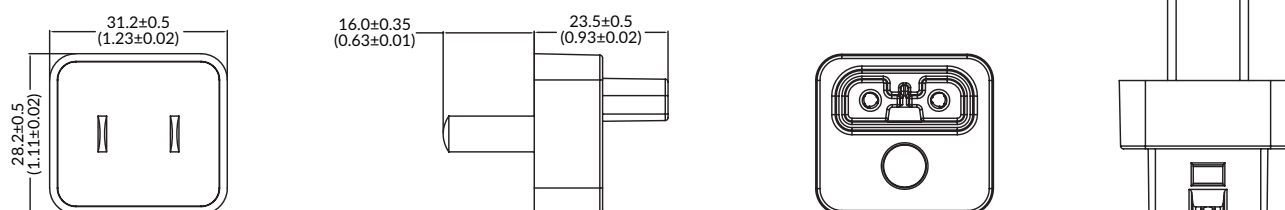
AC plug for UK, to order use part number **PGW PLUG UK**



AC plug for Australia, to order use part number **PGW PLUG AU**



AC plug for China, to order use part number **PGW PLUG CN**



### Notes:

1. All dimensions shown in mm (inches).

Specifications subject to change without notice.