

Sorensen XPH Series

175–420 W

Compact High Power Bench DC Power Supplies

18–75 V

- Low noise
- Excellent line/load regulation
- Coarse and fine voltage controls
- Constant voltage or constant current operation with automatic crossover and mode indication
- Individual On/Off switch per output (not including fixed output)
- Variable 1.5 -5V output on triple output model
- Switchable remote sense



2–20 A

~

115

230

The Sorensen XPH Series provides 175 to 420 watts of programmable DC power. The XPL is a compact, high performance, low cost power supply suited for benchtop applications.

The XPH Series uses combined switchmode pre-regulation with linear post-regulation to provide performance comparable with an all-linear design. The XPH features excellent line and load regulation with low noise and good transient response. The XPH Series is available in a single, dual and triple output for benchtop use.

The XPH dual output models have two independent and isolated outputs with its own On/Off switch. The outputs can be wired in either series or parallel to provide higher voltage or higher current output. All outputs are intrinsically short circuit proof, and are protected against external voltages and reverse currents. The XPH triple-output model has the same features as the dual-output model with an additional variable auxiliary output of 1.5 volts to 5 volts with a minimum of 5A current capabilities.

Output voltages up to 150 volts

The XPH75-2D is a dual-output 300-watt power supply with multi-mode capability. This enables it to operate as a dual power supply with two independent and isolated outputs, or as a single power supply of double the power. As a dual, each output provides 0 to 75 volts at 0 to 2 amps (mode A). As a single the output can be selected as either 0 to 75 volts at 0 to 4 amps (mode B) or 0 to 150 volts at 0 to 2 amps (mode C). In single modes, the unused half of the unit becomes completely inoperative and its displays are blanked.

Higher currents and remote sense

The XPH-R series are single-output power supplies similar in size and weight to the standard XPH series but offering higher output currents. To match their higher current capability, XPH-R models include switchable remote sensing and XPH extended voltmeter resolution.

Suitable for 42-volt automotive

The XPH 42-20 provides 420 watts of power within a highly compact and lightweight unit. It can provide current of up to 10 amps at voltages up to 42 volts in both constant voltage and constant current modes. The choice of 42 volts enables it to be used as a test source for the new generation of automotive electrical parts which will use 42 volts (18-cell batteries) instead of 14 volts (six-cell batteries), thus reducing currents and hence wiring losses. Switchable remote sense is provided to remove the effects of connection lead resistance at high current.

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AMETEK[®]
PROGRAMMABLE POWER

XPH Series : Product Specifications

| Output : Voltage and Current | | | | |
|--|--|--|--------------|---------|
| Models | Output Voltage | Output Current | Output Power | Outputs |
| XPH 18-10 | 0-18 V | 0-10 A | 180 W | 1 |
| XPH 20-20 | 0-20 V | 0-20 A | 400 W | 1 |
| XPH 35-5 | 0-35 V | 0-5 A | 175 W | 1 |
| XPH 35-4D | 0-35 V | 0-4 A | 280 W | 2 |
| XPH 35-4T | 0-35 V | 0-4 A | 305 W | 2 + Aux |
| XPH 42-10 | 0-42 V | 0-10 A | 420 W | 1 |
| XPH 75-2D | 0-75 V | 0-2 A | 300 W | 2 |
| Output Terminals | | | | |
| Standard | 4mm "touch proof" binding posts/terminals on 0.75"/19mm pitch. Suitable for bare wire, hook terminals or plugs. | | | |
| Remote Sense | Switch selectable as Local or Remote (main outputs only) | | | |
| Input | | | | |
| AC Input | 110-240 V \pm 10%, 50/60 Hz (XPH 35-5, XPH 35-4D, XPH 35-4T, XPH 75-2D) Factory set: 110-120 Vac \pm 10% or 220-240 Vac \pm 10%, 50/60 Hz (XPH 18-10, XPH 20-20, XPH 42-10),... Installation Category II | | | |
| Consumption | 400 VA (XPH 35-5, XPH 18-10) 500 VA (XPH 35-4D, XPH 35-4T, XPH 75-2D) 800 VA (XPH 20-20), (XPH 42-10) | | | |
| General Specifications | | | | |
| Operating Mode | Constant voltage or constant current with automatic cross-over and indication | | | |
| Voltage Setting | By coarse and fine controls (auxiliary third output on XPH35-4T course only) | | | |
| Current Setting | By single logarithmic control | | | |
| Output Impedance | Typically < 5 m Ω in constant voltage mode. Typically > 50 k Ω (XPH35-4, XPH75-2D), > 20 k Ω (XPH35-5, XPH42-10), > 10 k Ω (XPH18-10) in constant current mode. | | | |
| Line regulation | < 0.01% of max. output for a 10% line voltage change | | | |
| Load regulation | < 0.01% of max. output for a 90% load change, < 0.1% (XPH75-2D in Mode C) | | | |
| Ripple & Noise Typically | < 2 mVrms, < 10 mVpk-pk, < 15 mV (XPH75- 2D), <20mVpk-pk for XPH 20-20 & XPH 42-10 CV mode (20 MHz bandwidth) | | | |
| Transient Response | < 200 μ s to within 50 mV of set level for 90% load change (mode A only XPH75-2D) | | | |
| Temperature Coefficient | Typically < 100 ppm / $^{\circ}$ C | | | |
| Output Protection | Outputs will withstand forward voltages up to 40 V (XPH 35-5. XPH 35-4D, XPH 35-4T) or 85V/170V (XPH 75-2D) or 22V (XPH 18-10) or 48V (XPH 42-10) | | | |
| Status Indication | Output ON lamps. Constant current mode lamps | | | |
| Output Switch | Electronic. Preset voltage/current displayed with output off. | | | |
| Regulatory | CE-marked to: EN61010-1 and EN61326 | | | |
| Auxiliary Logic Output (XPL30-2T only) | Voltage | Variable <1.5V to >5V by front panel control. | | |
| | Meter Voltage Accuracy | 0.3% \pm 4 digits | | |
| | Current Limit | 5A minimum | | |
| | Output Protection | Output will withstand up to 7V forward voltage. Diode clamp reverse protection for currents up to 3A | | |
| | Ripple & Noise (20MHz Bandwidth) | Typically <2mVrms, <10mVpk-pk (20MHz bandwidth) | | |
| | Load Regulation | <0.5% for 90% load change | | |
| | Line Regulation | <0.1% for 10% line voltage change. | | |
| Status Indication | UNREG lamp. | | | |
| Meters (main outputs) | | | | |
| Meter Types | Separate four-digit meters for voltage and three-digit meter current with 14 mm (0.56") LED displays. Reading rate 4/sec | | | |
| Meter Resolutions | 10 mV, 1 mA (25V output), 10mA (18V, 20V, 42V, 75V Outputs) | | | |
| Meter Accuracy | | | | |
| Voltage | 0.3% \pm 3 digits | | | |
| Current | 0.6% \pm 3 digits | | | |

| Environmental | |
|---|---|
| Operating Temperature | 5 to 40°C |
| Storage Temperature | - 40 to 70°C |
| Humidity Range | 20% to 80% RH |
| Cooling | Convection (Fan assisted for XPH 42-10 and XPH 20-20) |
| Environmental | Indoor use at altitudes to 2000 m, Pollution Degree 2 |
| Physical | |
| Dimensions (H x W x D) | 6.3 x 5.5 x 12.6" (160 x 140 x 320 mm) (XPH 35-5, XPH 18-10, XPH 20-20, XPH 42-10) 6.3 x 10.2 x 12.6" (160 x 260 x 320 mm) (XPH 35-4D, XPH 35-4T, XPH 75-2D) |
| Weight | 6.2 lb (2.8 kg) (XPH 35-5, XPH 18-10) 7.9 lb (3.6 kg) (XPH 20-20, XPH 42-10) 9.5 lb (4.3 kg) (XPH 35-4D, XPH 35-4T) 9.7 lb (4.4 kg) (XPH 75-2D) |
| Model Number Description | |
| <p style="text-align: center;"> XPH 18 - 10 (XXX) </p> <p> Series — XPH Voltage — 18 Current — 10 Options — (XXX) Options: Blank - Single Output D - Dual Output T - Triple Output </p> | |
| Options and Accessories | |
| MHV | 220-240 Vac input factory set |

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