

ORENSEN (AMETEK)

XPH Series - 175 to 420W

The Sorensen XPH Series by Ametek consists of compact, highly efficient benchtop DC power supplies offering 175W to 420W of output power. Designed with a hybrid mixed-mode regulation system that combines switch-mode pre-regulation with linear post-regulation, the XPH Series delivers performance comparable to pure linear designs, including excellent line and load regulation, low output noise, and fast transient response. Available in single, dual, and triple output configurations, these economical power supplies are highly suited for engineering benches, educational laboratories, and system integration.

SPECIFICATIONS

General

Display	Dual 3-digit LED displays per output (voltage and current)
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Physical

Power Supply	115V AC / 230V AC $\pm$ 10% (switchable), 50Hz / 60Hz
Operating Temperature	5°C to 40°C °C
Dimensions (W×H×D)	140 x 160 x 320 mm (175/180W models), 210 x 160 x 395 mm (420W model), 260 x 160 x 320 mm (Dual/Triple models) mm
Weight	4.4 - 10.2 kg (model dependent) kg
Output Terminals	4 mm safety binding posts on 19 mm (0.75 in) spacing

Output Ratings

XPH 35-5 Voltage Range	0 to 35 V
XPH 35-5 Current Range	0 to 5 A
XPH 35-5 Maximum Output Power	175 W
XPH 18-10 Voltage Range	0 to 18 V
XPH 18-10 Current Range	0 to 10 A
XPH 18-10 Maximum Output Power	180 W
XPH 35-4D Output 1 & 2 Voltage Range	0 to 35 V
XPH 35-4D Output 1 & 2 Current Range	0 to 4 A
XPH 35-4D Maximum Output Power	280 W
XPH 35-4T Output 1 & 2 Voltage Range	0 to 35 V
XPH 35-4T Output 1 & 2 Current Range	0 to 4 A
XPH 35-4T Auxiliary Output Voltage	3.3 V or 5.0 V switchable
XPH 35-4T Auxiliary Output Current	5 A max
XPH 35-4T Maximum Output Power	305 W
XPH 42-10 Voltage Range	0 to 42 V
XPH 42-10 Current Range	0 to 10 A
XPH 42-10 Maximum Output Power	420 W
XPH 75-2D Output 1 & 2 Voltage Range	0 to 75 V
XPH 75-2D Output 1 & 2 Current Range	0 to 2 A
XPH 75-2D Maximum Output Power	300 W
Number of Channels	Single (XPH 35-5, 18-10, 42-10), Dual (XPH 35-4D, 75-2D), Triple (XPH 35-4T)
Output Configuration Modes	Independent, Series, or Parallel (Dual/Triple models)

Line & Load Regulation

Load Regulation - Voltage	<0.01% + 2mV (using remote sense on applicable models)
Load Regulation - Current	<0.01% + 1mA
Line Regulation - Voltage	<0.01% + 2mV for a 10% line change
Line Regulation - Current	<0.01% + 1mA for a 10% line change

Ripple & Noise

Ripple & Noise - Voltage (RMS)	<1mV RMS
Ripple & Noise - Current (RMS)	<1mA RMS (<2mA RMS on 10A models)

Programming & Readback Resolution

Meter Resolution (XPH 35-5)	100mV, 10mA
Meter Resolution (XPH 18-10)	100mV, 100mA
Meter Resolution (XPH 35-4D)	100mV, 10mA
Meter Resolution (XPH 35-4T)	100mV, 10mA
Meter Resolution (XPH 42-10)	100mV, 100mA
Meter Resolution (XPH 75-2D)	100mV, 10mA

Programming & Readback Accuracy

Meter Accuracy - Voltage	$\pm(0.3\% \text{ of reading} + 1 \text{ digit})$
Meter Accuracy - Current	$\pm(0.6\% \text{ of reading} + 1 \text{ digit})$

Transient Response

Transient Recovery Time	<250 μ s to within 50mV of setting after a 50% to 100% load change
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User Interface & Controls

Operating Modes	Constant Voltage (CV) or Constant Current (CC) with automatic crossover
Mode Indication	Individual LED indicators for CV and CC modes
Voltage Control Panel Controls	Coarse and fine rotary analog controls
Current Control Panel Controls	Single rotary analog control
Output ON/OFF Switches	Individual switch per output (excluding auxiliary output on XPH 35-4T)
Remote Sense Terminals	Available on XPH 18-10 and XPH 42-10 (switchable on front panel)

Environmental Specifications

Relative Humidity (Operating)	20% to 80% RH (non-condensing)
Storage Temperature Range	-20°C to 60°C
Relative Humidity (Storage)	10% to 90% RH (non-condensing)
Cooling System (Power levels < 420W)	Silent convection cooling (fanless)
Cooling System (XPH 42-10)	Low-noise temperature-controlled fan cooling

Physical Characteristics

XPH 35-5 Weight	3.0 kg
XPH 18-10 Weight	3.0 kg
XPH 35-4D Weight	4.3 kg
XPH 35-4T Weight	4.3 kg
XPH 75-2D Weight	4.3 kg
XPH 42-10 Weight	5.0 kg
XPH 35-5 Dimensions (W x H x D)	140 x 160 x 320 mm
XPH 18-10 Dimensions (W x H x D)	140 x 160 x 320 mm
XPH 35-4D Dimensions (W x H x D)	260 x 160 x 320 mm
XPH 35-4T Dimensions (W x H x D)	260 x 160 x 320 mm
XPH 75-2D Dimensions (W x H x D)	260 x 160 x 320 mm
XPH 42-10 Dimensions (W x H x D)	210 x 160 x 395 mm

Power Requirements

AC Input Voltage	115 VAC or 230 VAC $\pm 10\%$ (switch selectable)
AC Input Frequency	47 Hz to 63 Hz
Power Consumption (XPH 35-5)	320 VA max
Power Consumption (XPH 18-10)	320 VA max
Power Consumption (XPH 35-4D)	640 VA max
Power Consumption (XPH 35-4T)	650 VA max
Power Consumption (XPH 42-10)	800 VA max
Power Consumption (XPH 75-2D)	640 VA max

Environmental

Operating Altitude	Up to 2000 m
Pollution Degree	2

Regulatory

Safety Compliance	IEC 61010-1
EMC Compliance	EN 61326

Output Specifications

Maximum Output Floating Voltage	300 VDC
XPH 35-4D & XPH 35-4T Series Mode Output	Up to 70 V at 4 A
XPH 35-4D & XPH 35-4T Parallel Mode Output	Up to 35 V at 8 A
XPH 75-2D Series Mode Output	Up to 150 V at 2 A
XPH 75-2D Parallel Mode Output	Up to 75 V at 4 A

Output Protection

Reverse Diode Protection	Diode clamped, maximum current 3A
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Performance

Voltage Temperature Coefficient	Typically < 100 ppm/°C
Current Temperature Coefficient	Typically < 150 ppm/°C
Output Impedance (CV Mode)	Typically < 5 mΩ at 1 kHz

TECHNOLOGY

Mixed-mode regulation (switch-mode pre-regulation and linear post-regulation)

APPLICATIONS

Benchtop testing, laboratory development, education, and system maintenance

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