

# PRO-T Series

## 10 kW Programmable Power Supplies

The PRO-T Series 10 kW programmable power supplies meet the sophisticated control and packaging requirements of high power test and measurement applications. These supplies have SCR preregulation. Optional internal IEEE-488/RS 232 capability for various programming and readback functions with 12-bit resolution and accuracy is available. Other features include outputs for remote voltage and current readings,



remote OVP programming and remote shutdown. The PRO-T Series yields 80% efficiencies at full power with good

regulation (<0.1%) and RMS ripple as low as 20 mV.

## Features

### ◆ Voltage

8 models from 0-16 to 0-600 VDC and 16 to 625 ADC,

### ◆ Input

480 VAC, 50/60 Hz, three phase input (optional inputs available)

### ◆ SCR Preregulator Topology

### ◆ Protection and Safety

- Unique circuit prevents load burn-out should remote programming lines open
- OVP shutdown standard
- SCR crowbar (Option M5)

### ◆ Remote Programming

- Remote control functions: voltage, current, OVP shutdown, external meter/indicator driver
- No programming resistors in contact with output, avoids high voltage problems with programming components
- Optional Internal IEEE-488/RS 232 Interface Card with voltage and current readback and adjustable OVP (Option M9C)

### ◆ Regulation

0.1% line and load regulation (max.)

### ◆ Programming

Fast programming speed (100 to 150 ms typical)

### ◆ Rear Panel Controls

Rear panel connector features: AC control, shutdown, voltage set, OVP set, local/remote current meter, remote voltage meter, OVP indication, thermal indication and remote sense.

### ◆ Software

LabVIEW® driver for M9C/M85 can be downloaded at no cost at [www.sorensen.com/support/downloads.cfm](http://www.sorensen.com/support/downloads.cfm)

### ◆ CE Mark

(Option M36)

### ◆ 5 Year Warranty



# PRO-T Series

## OUTPUT

**Voltage:** See table

**Current:** See table

## Constant Voltage Mode

**Noise and Ripple:** See table

### Regulation

**Line and Load Combined:** 0.1% of the voltage setting or specification in table, whichever is greater

**Transient Response:** Typically recovers in 40 ms to within 1% of steady-state output voltage for a 50% to 100% or 100% to 50% load change

**Stability:** 0.1% of maximum voltage over 8 hours after 30 minute warm up time at fixed line, load and temperature

**Temperature Coefficient:** 0.02%/°C of maximum output voltage

## Constant Current Mode

**Ripple:** See table

### Regulation

**Line and Load Combined:** 0.1%  $I_o$  max. of the output current setting or specification in table, whichever is greater

**Stability:** 0.1% of maximum current over 8 hours after 30 minute warm-up time at fixed line, load and temperature

**Temperature Coefficient:** 0.04%/°C of maximum output current

## INPUT

**Voltage and Frequency:** 480 VAC  $\pm$  10%, 50-60 Hz, three phase

**Voltage Options:** See Input Voltage Options

**Current:** See table

## GENERAL

**Operating Temperature:** 0° to 50°C (derated above 30°C)

**Storage Temperature:** -45°C to 85°C

**Cooling:** Forced air, fan cooled

**Humidity Range:** 0-90% RH, non condensing

**Efficiency:** 80% at full rated output (typical)

**Series Operation:** 200 VDC max.; consult Sorensen for series operation of more than 2 units

**Parallel Operation:** Master/slave operation up to 3 units. Consult factory for details.

**Overvoltage Protection:** Adjustable 5-110% of rated output. Selectable front panel or remotely programmable

**Meter Accuracy:** 1% of full scale + 1 count

**Voltage Programming:** 100 mV per 1% of rated output (0-10 V for 0-100% of rated output)

**Current Programming:** 100 mV per 1% of rated output. (0-10V for 0-100% of rated output)

**Resistive Programming:** 100 $\Omega$  per 1% of rated output (0-10 k $\Omega$  for 0-100% of rated output)

**Remote Sense:** 5V max. drop in (+) power lead or (-) power lead

**Software:** LabVIEW® driver for M9C/M85, programs can be downloaded at no cost at [www.sorensen.com/support/downloads.cfm](http://www.sorensen.com/support/downloads.cfm)

**Regulatory Compliance:** CE Mark (<300V models only)

**Dimensions:** 7U or 12.25" (311 mm) H x 19" (482 mm) W x 24" (609 mm) D

**Weight:** 310 lbs. (141 kg)

**Shipping Weight:** 380 lbs. (172 kg)

## OPTIONS & ACCESSORIES

**M5:** SCR crowbar

**M9C:** Internal IEEE-488/RS 232 Interface

**M36:** CE Mark (<300V models only)

**M85:** Multichannel slave interface

**M86:** Parallel cable

## Input Voltage Options

*Specifying Note: Select AC input voltage option below and add as a part number suffix to specify power supplies (listed as 50-60 Hz, three phase)*

**T1:** 208 VAC

**T5:** 480 VAC

**T2:** 380 VAC

**T8:** 220 VAC

**T3:** 415 VAC

**T10:** 230 VAC

**T4:** 440 VAC

**T11:** 400 VAC

## PRO-T Accessories

**Caster Cart Kit:** Part No. 1064395-1

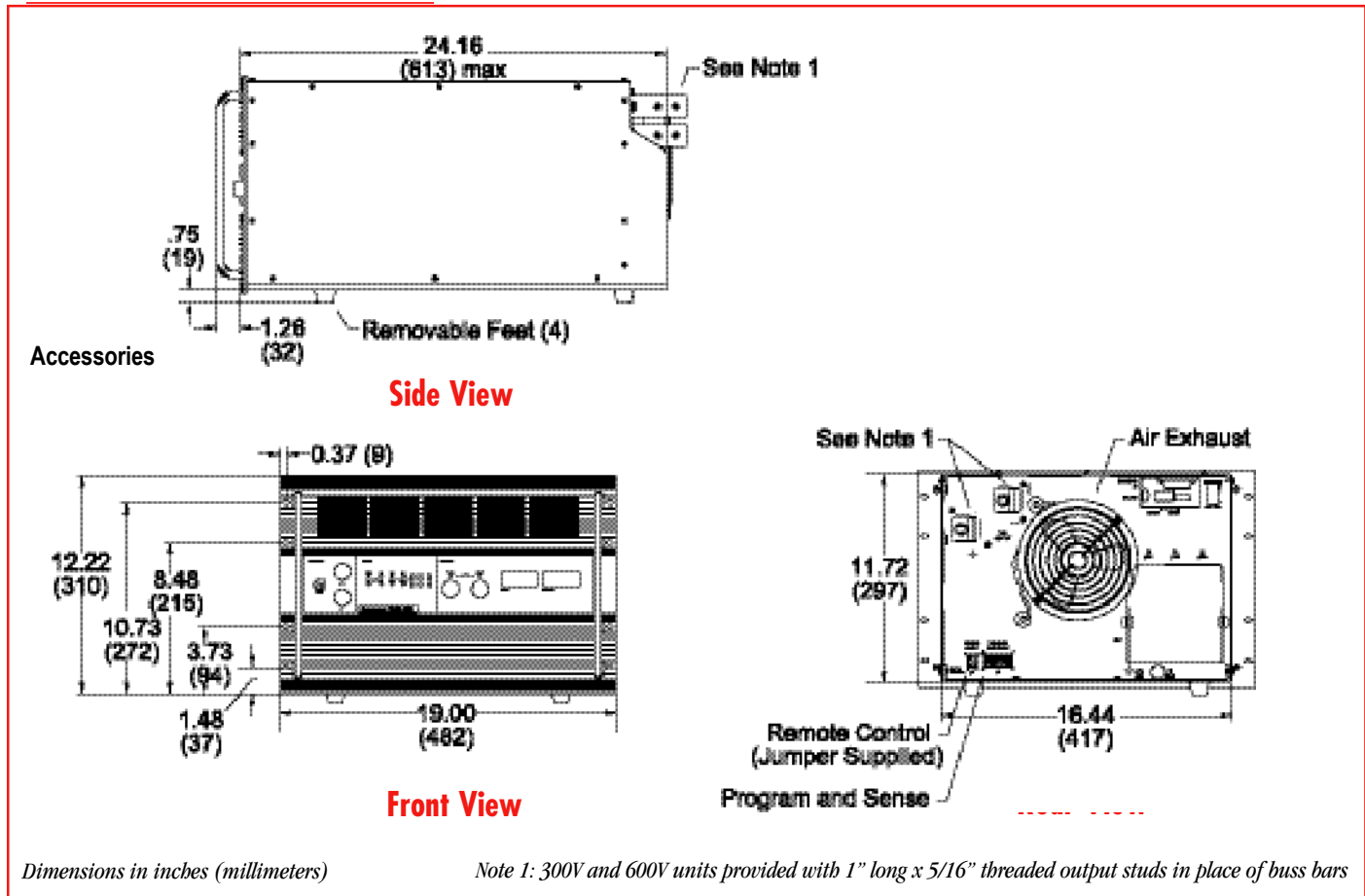
# PRO-T Series

Model	Output Power				Constant Voltage Mode					Temp. Coeff., Voltage mV/°C	Voltage Drift %V <sub>o</sub> Max. (Typ.)	Programming Constant Voltage Mode	
	Voltage (VDC)	Current (ADC)			Regulation Line and Load mV <sup>1</sup>	Ripple (RMS)** mV	Noise (P-P) mV	Resolution %	Transient Response Time ms (Typ.)			Ohms/V	V/V
		30°C	40°C	50°C									
PRO 16-625T5*	0-16	625	562	500	8-16	30	100	.025%	40	3.2	0.1	625	1.6
PRO 32-310T5*	0-32	310	279	248	16-32	20	120	.025%	40	6.4	0.1	313	3.2
PRO 55-180T5*	0-55	180	162	144	28-55	20	120	.025%	40	11.0	0.1	182	5.5
PRO 80-125T5	0-80	125	112.5	100	40-80	30	120	.025%	40	16.0	0.1	125	8.0
PRO 110-90T5*	0-110	90	81	72	55-110	40	140	.025%	40	22.0	0.1	91	11.0
PRO 160-62T5*	0-160	62	55.8	49.6	80-160	60	180	.025%	40	32.0	0.1	63	16
PRO 300-33T5*	0-300	33	29.7	26.4	150-300	100	300	.025%	40	60.0	0.1	33	30
PRO 600-16T5*	0-600	16	14.4	12.8	300-600	150	600	.025%	40	120.0	0.1	17	60

Model	Constant Current Mode			Temp Coeff., Current mA/°C	Current Drift % <sub>o</sub> Max. (Typ.)	Programming Constant Current Mode		Power Factor (Typ.)	Efficiency <sup>2</sup>	Output Power kW
	Regulation <sup>1</sup> mA	Ripple (RMS)** mA	Resolution %			Ohms/A	V/A			
PRO 16-625T5*	312-625	2000	.025%	250	0.1	16.0	62.5	0.75	80	10
PRO 32-310T5*	155-310	1500	.025%	124	0.1	32.0	31	0.75	80	10
PRO 55-180T5*	90-180	900	.025%	72	0.1	56.0	18	0.75	80	10
PRO 80-125T5*	62-125	900	.025%	50	0.1	80.0	12.5	0.75	80	10
PRO 110-90T5*	45-90	800	.025%	36	0.1	111.0	9.0	0.75	80	10
PRO 160-62T5*	31-62	480	.025%	25	0.1	161.0	6.2	0.75	85	10
PRO 300-33T5*	16-33	240	.025%	13	0.1	303.0	3.3	0.75	85	10
PRO 600-16T5*	8-16	120	.025%	6	0.1	625.0	1.6	0.75	85	10

1. Regulation range as stated 0.1% of voltage or current, or stated range, whichever is greater. 2. Efficiency at max. power out and nominal AC input voltage (typical).  
 \* See voltage options for other available inputs. \*\*RMS ripple typical from 20 Hz to 300 kHz

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## Options & Accessories

Remote Interface Options	
M9C	Internal IEEE-488/RS 232 Interface
M85	Multichannel Slave Interface
Input Voltage Options*	
T1	208 VAC
T2	380 VAC
T3	415 VAC
T4	440 VAC
T5	480 VAC
T8	220 VAC
T10	230 VAC
T11	400 VAC
Regulatory Compliance	
M36	CE Mark
Accessories	
M5	SCR Crowbar
M86	Parallel Cable

M5A: J-305 Pin Assignments			
1	Overvoltage Protection Flag	14	Not Used
2	TTL Shutdown Return	15	TTL Shutdown
3	Not Used	16	Current Limit Program
4	Program Return	17	Voltage Program
5	Program Return	18	Current Readback
6	Auxiliary Ground	19	Voltage Readback
7	Remote Voltage Program Select*	20	+10V Reference Out (10 mA max.)
8	Remote Current Program Select*	21	Output Fail Flag*
9	Voltage Current Limit Mode Indicator	22	+ Sense
10	+ Out	23	+ Out
11	+ Out	24	- Return
12	- Return	25	- Return Sense
13	- Return		

\* Specifying Note: Select AC input voltage option and add as a part number suffix to specify power supplies (listed as 50-60 Hz, three phase)