

# Tokamak™ DC-8/10/16/20 PDU RF / RS-485



## Product Overview:



Tokamak™ is an award-winning Plenum-rated Rack-Mount, Din-Rail-Mount, or Wall-Mount low-voltage Power Distribution Unit & agnostic 485 eight-port data hub with 8 to 24 motor ports and 2 non-powered BUS IN and BUS OUT ports for extending the 485 bus line to other PDUs, data hubs, or control system processors.

Tokamak™ is also used to harvest energy for up to 8 ESM PDU's such as Reaktors, Neutrons, or Colliders using one of the eight Combi-ports. These combi-ports can also be used to power up to eight 485 keypads, RF transceivers or RF receivers.

An optional Voltmeter can show the current voltage of the system which is especially useful in a mixed voltage shading system.




## Technical Specifications:

- Input: 90 ~ 264 VAC, 1.2A (IEC-C14)
- 8-12 Rear Motor Outputs; 12~35 VDC (8Nm)
- Front Combi-Ports: 8 PDU Harvest / 2Nm Motor / Device
- Material: Powder coated steel enclosure
- Dimensions: (1.75 in. H) x (8.51 in. W) x (10.5 in. D)  
(44.5mm H) x (215.9mm W) x (254mm D)
- Maximum Wiring Distance
  - Rear motor ports: Up to 100m per motor port.  
2, 4 or 5 position wire with 12AWG for power
  - Front PDU ports: Up to 50m per motor port.  
UTP with minimum 23AWG
  - Front device ports: Up to 50m per device port
- Operating Temperature Range: 0~70°C (> 40°C de-rating)
- Shipping Weight: 8.1 lbs. [3.67kg]
- Indoor use only



## PDU Options:

- Optional Rear-mounted semi-recessed On/Off Power Switch
- Optional Voltmeters enables display of real-time DC Voltage
- Optional Voltmeter gauge orientation 12, 3, 6 or 9 o'clock
- Optional Wall-Mounted 16"x12"x4" enclosure with Lid
- Optional 5.08pitch screw down removable Terminal blocks
- Optional PDU vertical and horizontal joining
- Optional Voltage Selection from 12VDC to 35VDC



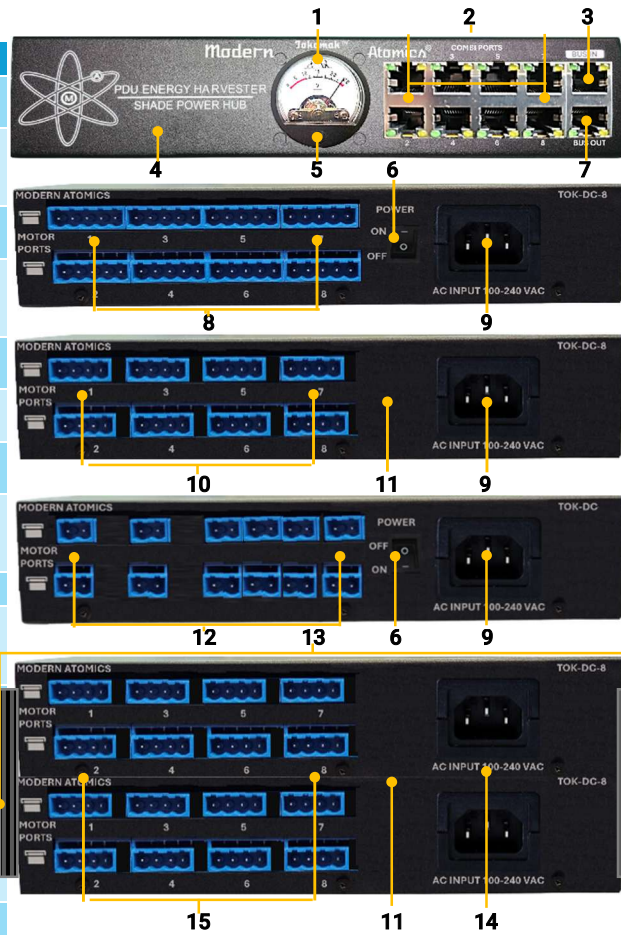
## Features summary:

- Enables power for up to 24 Low Voltage DC motors per unit (22A Max)
- Built-in 8-port 485 Data Hub
- Works with Many Popular Motors.
  - All Lutron® Low Voltage & RF Motors
  - All Somfy® 24v Low Voltage SDN®, RTS®, or Zigbee Motors
  - All Q-Motion® Low Voltage Motors
  - All Power Shades® Low Voltage Motors
  - All Crestron® Low Voltage Motors
- Certified IEC 62368-1 & CB 60950-1
- Meets USA EISA 2007
- Meets Energy Efficiency DOE Level VI
- Meets Code of Conduct Version 5 Tier 2
- Over Current Protection
- Over Temperature Protection
- Over Voltage Protection
- EMC Performance:
  - EN55032 Class B conducted, class B radiated
  - FCC Class B conducted, class B radiated
  - VCCI Class B conducted, class B radiated
- EN61000-3-2: Meet class D
- EN61000-3-3: Meet regulation
- EN61000-4-2: Air discharge: ±15KV, contact discharge: ±8KV meet criterion A
- EN61000-4-3: 80~1000MHz,3V.m,80%AM(1kHz),meet criterion A
- EN61000-4-4: Impulse: ± 1kV applied to L,N,meet criterion A
- EN61000-4-5: ± 1kV applied differential mode,meet criterion A
- EN61000-4-6: 0.15~80MHz,3Vrms,80%AM(1kHz),meet criterion A
- EN61000-4-8: 50 Hz or 60 Hz, 1A.m, meet criterion A

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## Connections & Indicators:

ELEMENT	DESCRIPTION
1	Optional Voltmeter Indicates current Voltage Output from [0~12~18~24~35] VDC
2	COMBI PORTS 8-Motors 2Nm max Q-Motion/ Somfy 8-485 Devices-Keypads/RF RCVERS 8-PDU Energy Harvesting Outputs
3	485 BUS IN PORT Non-powered / System expansion & 3rd Party Control Processor Port
4	NFPA Plenum Rated Enclosure Can be mounted inside Air-Return spaces when using Plenum rated motor and data cables (Not included)
5	Meter Calibration Voltage Meter Calibration Control adjust with flathead screwdriver
6	Optional Power Switch Optional Semi-Recessed Power Switch up=OFF and down=ON
7	485 BUS OUT PORT Non-powered / System expansion & 3rd Party Control Processor Port
8	5.08 PITCH TERMINAL BLOCKS 5 Pos 8 Removable screw-down Motor Port Terminal Blocks for up to 12AWG wire and up to 100m (8Nm max)
9	IEC C14 Port IEC C13 AC Power Cable Included
10	5.08 PITCH TERMINAL BLOCKS 4 Pos 8 Removable screw-down Motor Port Terminal Blocks for up to 12AWG wire and up to 100m (8Nm max)
11	Optional Power Switch Optional Semi-Recessed Switch not selected
12	5.08 PITCH TERMINAL BLOCKS 2 Pos 10 Removable screw-down Motor Port Terminal Blocks for up to 12AWG wire & up to 100m 8Nm max
13	Optional Vertical Kit Allows 2 PDU to be joined vertically Two units take up 3" of height
14	Dual IEC C14 2 IEC C13 AC Power Cables Included
15	5.08 PITCH TERMINAL BLOCKS 2 Pos 16 Removable screw-down Motor Port Terminal Blocks for up to 12AWG wire & up to 100m 8Nm max



FRONT VIEW (All Versions) W/ Meter Option

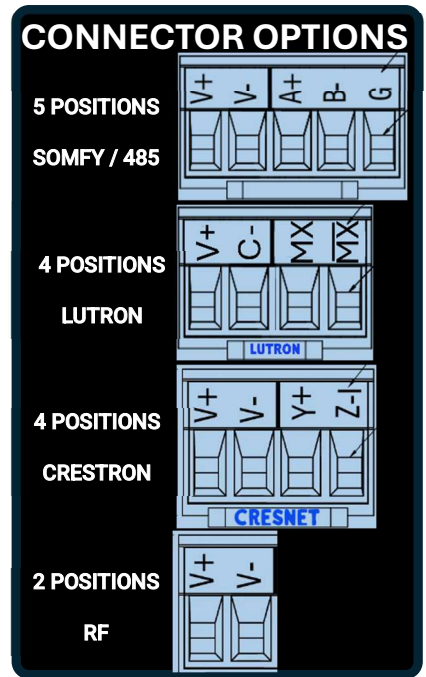
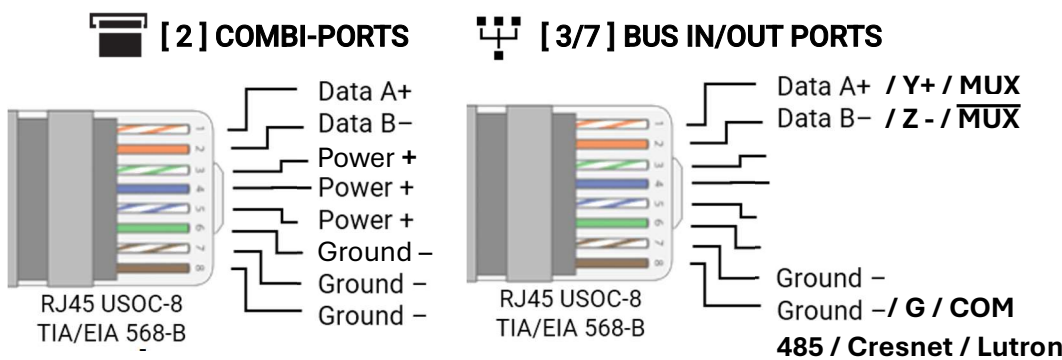
REAR VIEW (DC-8 Version) W/Power Switch Option

REAR VIEW (DC-8/L8 Version) W/O Power Switch Option

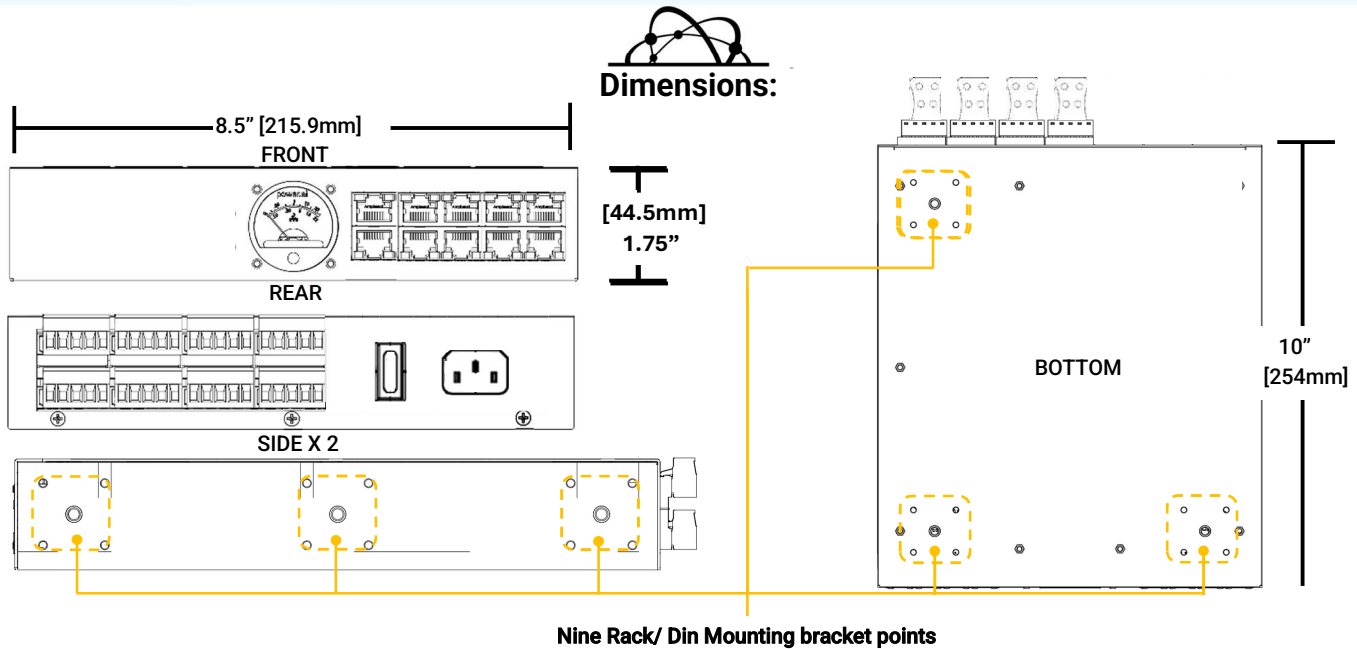
REAR VIEW (DC-12 Version) W/Power Switch Option

REAR VIEW (DC-16 Version) W/O Power Switch Option & W/Vertical PDU JOINER KIT Option

## Motor/Device Cable pinouts:



# Tokamak™ DC-8/10/16/20 PDU RF / RS-485



## Compatible Devices:

### 485 DEVICES:

485 Decoflex® Keypads (V2)

485 RF Receivers/Transceivers from Somfy® (V2 only) and SILABS®

485 CODECS / DATA HUBS from Somfy® and SILABS

**RF DEVICES:** Via RF Receivers/Transceivers from Somfy® (V2 only) and SILABS®

### PDU HAVESTING:

Reaktor DC-22, and Bond Editions

Neutron DC-22, Collider, and Stellarator AC-24

**MOTORS:** All Somfy / All Crestron / All Lutron / All Q-Motion

Horizontal stack may require optional din rail kit

LONG and MID Rack Ears and 1RU JOINER KITS NOT INCLUDED & sold separately

Tokamak is not a Lutron® or Crestron® approved power supply. Tokamak does not qualify as a Somfy® Power Distribution Device for the Somfy® UL Listing as a Shade Operator.

Specifications are subject to change without notice

## Included in ALL Versions

(1~2) PDU

(8~20) 5.08 pitch Terminal Blocks

(8~16) 3" Wire ties (4 and 5 Pole only)

(1~2) 2m IEC AC Cable

## SAFETY STANDARD APPROVAL



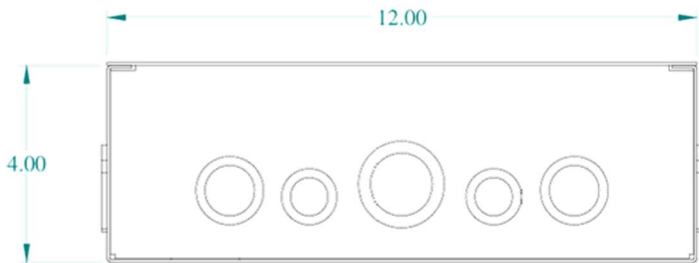
**FC** Tested to Comply  
With FCC Standards  
FOR HOME OR OFFICE USE



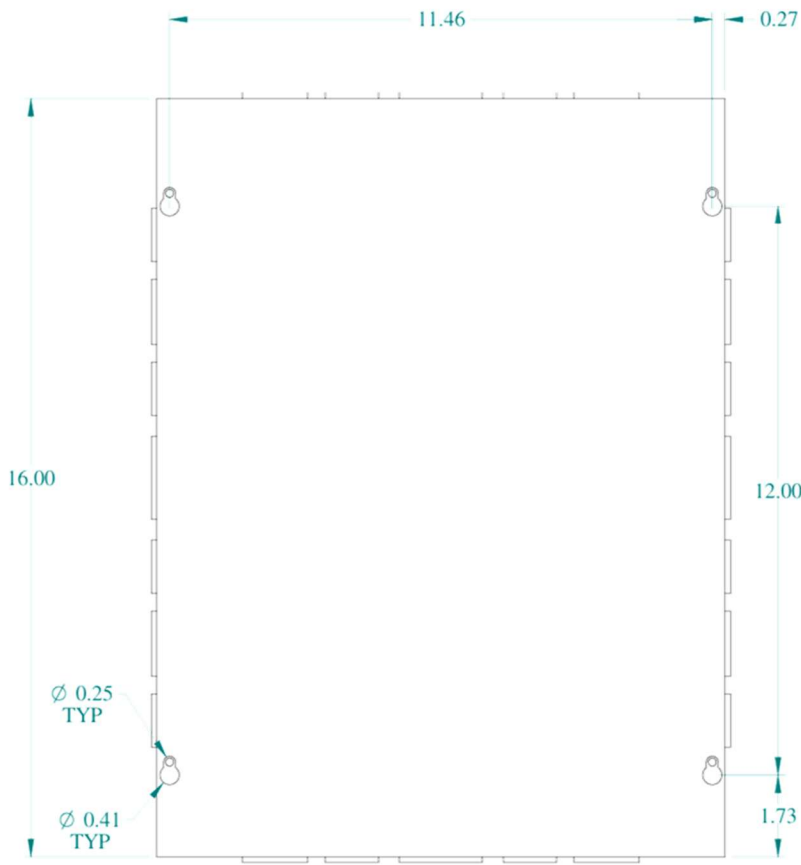
Tokamak™

TOK-DC-###

**Optional Enclosure Dimensions:**

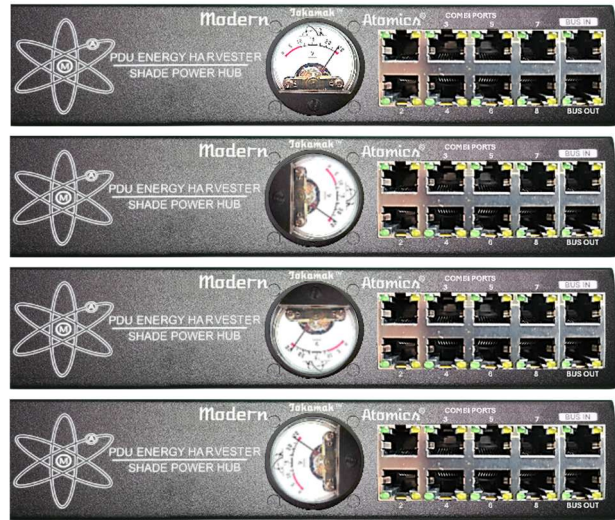


FRONT VIEW



TOP VIEW

**OPTIONAL GAUGE ORIENTATION:**



**12 O'clock  
DEFAULT**

**3 O'clock  
OPTION**

**6 O'clock  
OPTION**

**9 O'clock  
OPTION**

**MODEL SKU OPTIONS:**

PART NUMBER	MOTOR PORTS	TYPICAL MOTOR TYPE	TYPICAL BRANDS	VOLTAGE OPTIONS
TOK-DC-8+	8	485	SOMFY® SDN® / Q-Motion®	24
TOK-DC-C8	8	485	CRESTRON®	24
TOK-DC-L8	8	485	LUTRON®	24 / 35
TOK-DC-10	10	RF	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades®	12/18/24
TOK-DC-12	12	RF	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades®	12/18/24
TOK-DC-16	16	485	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades® / Lutron® / Crestron® / Q-Motion®	12/18/24/35
TOK-DC-18	18	485 / RF	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades® / Lutron® / Crestron® / Q-Motion®	12/18/24/35
TOK-DC-20	20	RF	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades®	12/18/24
TOK-DC-24	24	RF	Somfy® RTS® / Zigbee / Hunter Douglas® / BTX® / Power Shades®	12/18/24



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