

NetSure™ 4015

30kW 400V DC Power and Control Sub-Rack

PRELIMINARY

Key Features

- Up to 30kW capacity (15kW N+1)
- Hot-pluggable rectifiers
- AC input: 380V, 400V or 480V AC, 3 phase
- Connections for up to:
 - (2) 400V distribution sub-racks, and
 - (5) 400V battery trays
- 6U high, 19" mounting
- CE Marked, UL Recognized (EN/UL 60950) (pending)

A pre-wired, self-contained assembly that can be deployed in a customer-provided rack or factory installed as part of a complete system.

Description

The 400V DC Power and Control Sub-Rack is the foundation of the NetSure™ 4015 DC power system. A single 3-phase AC input terminal feeds two rectifier slots, and each phase includes a class II surge protection device (SPD). The sub-rack contains up to (2) 15kW 400V DC rectifiers with output connected to a common bus, and includes main system control elements for safe and reliable system operation. Two versions of the sub-rack are available depending on the grounding topology selected: a standard high resistance mid-point ground (+/- 200V DC, HRMG) or optional negative pole ground (+400V DC, NPG) arrangement.

The main ACU+ controller provides power system control, local/remote alarm management, data acquisition and advanced battery and energy management. Low voltage disconnect (LVD) functionality is provided to remotely trip battery circuit breakers and protect batteries against over-discharge. If equipped with optional temperature probe(s), the controller can support battery charge temperature compensation. Temperature probe(s) may also be designated to monitor ambient air temperature and/or battery temperature.

The controller has a local LCD display, keypad and Ethernet port for access to the comprehensive web page with SNMP capability for remote system management. If specified for HRMG, the controller section also contains the ground fault monitoring hardware and algorithms to alert users to ground faults in the system.

DC output connections are available for up to two NetSure™ 4000 Series 400V DC Distribution Sub-Racks or for customer use. Up to five NetSure™ 4000 Series 400V DC Battery Trays can be connected for backup. Customer provided batteries can also be accommodated. A front-access system shutdown button is provided to quickly isolate the critical bus from all power sources. The Power and Control Sub-Rack takes up only 6U of rack space and fits into a standard 19" rack.

Additional Information

Additional specification, engineering and installation information may be obtained by requesting SAG584000300 for the system and UM1M820NNA-1 for the controller user manual.



PRELIMINARY

Technical Specifications

System Input	
Nominal Voltage	380V, 400V, 480V AC; 3 phase, 4 wire
Voltage Range	Operating range 260-530VAC Full power: 341VAC to 530VAC; Derated: 260VAC to 341VAC
Frequency	45Hz to 65Hz
Power Factor	.99 @ 100% load
Inrush Current	Peak value < 1.5 times peak value of maximum steady state input current
Surge Protection	SPD Class II
Rectifier Circuit Breaker	40A each
Upstream Breaker (recommended)	60A @ 400VAC, 45A @ 480VAC; at 30kW full power

System Output	
Voltage Range	290 - 400VDC adjustable 336 - 400VDC full power
Power	30kW maximum @ Vout > 336VDC
Voltage Regulation	0.5% for full operating range
Grounding Configurations	Std: High resistance mid-point grounding (HRMG) with ground fault detection Opt: Negative-pole ground (NPG) available
Efficiency	Peak: 97%

Communication	
Interfaces	RS232, RS485, CAN, Ethernet, USB
Protocols	HTTP, TCP/IP, SNMP
Digital Inputs	4
Digital Outputs	4
Temperature Probes	2 (analog input)

Environmental	
Operating Temperature	Range: -5° to +45° C; Full rating: 10°C to +35° C
Storage Temperature	-40°C to +70° C
Cooling Method	Front to back forced air
Heat Rejection	3070 BTU/hr (900W) maximum
Relative Humidity	0-95% non condensing
Elevation	Up to 10,000' (3000 m) at full power
Audible Noise	< 55 dB(A)
EMI	EN 300 386, class A and FCC part 15 class A (pending)
RoHS	RoHS 5 compliant

Mechanical	
Dimensions (H x W x D)	6U x 19" x 28.5"; 6U x 483 x 724 mm
Weight	65 lbs (30kg), no rectifiers
Cabling Details	Top input AC and output DC; top or bottom battery cable; rear access required

Safety	
Safety Agencies	CE marking per low voltage directive (EN 60950) and the EMC directive / UL recognized per UL 60950 (cUR for Canada) (pending)

Note: Specifications subject to change without notice.

Ordering Information

Part Number	Description
584000300	NetSure™ 4015 DC power system
58400030011	Power and control sub-rack - HRMG
58400030012	Power and control sub-rack - NPG

Note: HRMG = High Resistance Mid-point Ground and NPG = Negative Pole Ground.

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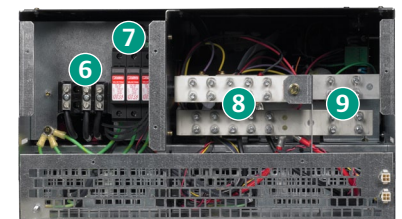
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Standard System Overview



Power and Control Sub Rack – Front View



Power and Control Sub Rack – Rear View

- 1 Ethernet port
- 2 ACU+ controller
- 3 System shutdown button
- 4 (2) Rectifier slots
- 5 (2) Rectifier AC breakers
- 6 Input AC terminal block
- 7 SPD, class II
- 8 (5) Battery termination points
- 9 (2) DC output termination points

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