OCS-260

180…220W DC/AC SINE WAVE INVERTER

GENERAL FEATURES:

Sine wave output voltage
Selectable output frequency: 50/60Hz
Adjustable output voltage
Output failure alarm
Remote inhibit
High input-output isolation 3000Vrms
Optional railway version EN50155
Fire and smoke: EN45545-2 approved

	12Vdc 9.5 … 15V(1)	24Vdc 16.8 … 30V	36Vdc 25.2 … 45V	48Vdc 33.6 … 60V	72Vdc 50.4 … 90V	110Vdc 77 … 138V
120Vac	**OCS-260-7041** 180W	**OCS-260-7043** 200W	**OCS-260-7044** 220W	**OCS-260-7045** 220W	**OCS-260-7046** 220W	**OCS-260-7047** 220W
230Vac	**OCS-260-7031** 180W	**OCS-260-7033** 200W	**OCS-260-7034** 220W	**OCS-260-7035** 220W	**OCS-260-7036** 220W	**OCS-260-7037** 220W

Note (1): Startup voltage ≤10.2V. Under-voltage shutdown ≤ 9.1V

Several references are subjected to special MOQs and lead times. Please consult Premium's Sales Dept. and web site.

INPUT	
Input voltage range	See table
Maximum input ripple	5% Vin nom (Vrms, 100Hz)
OUTPUT	
Nominal output voltage (Vonom)	See table
Adjust range	± 5% of Vonom
Load regulation	4%
Line regulation	0.4% @ ΔVin -20…+25% 10% @ ΔVin -30…+25% 1% @ ΔVin -10…+25% for 12V input models 10% @ ΔVin -20…+25% for 12V input models
Output frequency	50 / 60Hz ± 0.25Hz
Output wave distortion THD	< 2% (16 samples average)
Output voltage HF ripple (BW: 20Mhz)	< 20Vpp for 230Vac models < 10Vpp for 120Vac models
ENVIRONMENTAL	
Storage temperature	-40 ... 80°C
Operating temperature (full load)	-40 ... 55°C
Operating temperature (62.5% load)	-40 ... 70°C
Cooling	Natural convection
Shock and vibration	According to EN61373:2010
MTBF (MIL-HDBK-217-E; G_b, 25°C)	250.000 h
EMC	
Immunity according	EN61000-6-2 EN50121-3-2
Emissions according	EN61000-6-4 EN50121-3-2
SAFETY	
Safety according to	EN60950-1, EN62368-1 Class I OV category II, Pollution degree 2 Input / output isolation: reinforced
Dielectric strength: Input /output	3000 Vrms / 50Hz / 1min (routine test 2s)
Dielectric strength: Output / ground	1500 Vrms / 50Hz / 1min (routine test 2s)
Dielectric strength: Input / ground	1000 Vrms / 50Hz / 1min (routine test 2s)
Fire and smoke	EN45545-2
MECHANICAL	
Weight	900 g
Dimensions	100 x 220 x 40mm
PROTECTIONS	
Against input over-currents	Internal fuse
Against output overloads < Iompk	linear
Against output overloads > Iompk	Triggered
CONTROL	
Remote inhibit input	4 ... 24 Vdc
Output failure alarm	Solid state relay, open when alarm. Max: 60V, 0.3A

ORDERING CODES

Model	Input Voltage DC [V]	Input voltage range [V]	Max. Input Current [A]	Output voltage AC [V]	Output current [A]	Active output power [W]	Appar. output power [VA]	Output Peak curr. 10ms [A]	Efficiency [%] *	No load input current [A] *
OCS-260-7031	12	9.50 - 15	22.1	230	0.78	180	260	4.0	86	0.65
OCS-260-7033	24	16.8 - 30	13.7	230	0.87	200	260	4.0	87	0.37
OCS-260-7034	36	25.0 - 45	10.0	230	0.96	220	260	4.0	88	0.21
OCS-260-7035	48	33.6 - 60	7.36	230	0.96	220	260	4.0	89	0.17
OCS-260-7036	72	50.4 - 90	4.91	230	0.96	220	260	4.0	89	0.12
OCS-260-7037	110	77 - 138	3.17	230	0.96	220	260	4.0	90	0.08
OCS-260-7041	12	9.50 - 15	22.3	120	1.50	180	260	7.6	85	0.65
OCS-260-7043	24	16,8 - 30	13.7	120	1.67	200	260	7.6	87	0.35
OCS-260-7044	36	25.0 - 45	10.0	120	1,83	220	260	7.6	88	0.21
OCS-260-7045	48	33.6 - 60	7.45	120	1,83	220	260	7.6	88	0.15
OCS-260-7046	72	50.4 - 90	4.97	120	1,83	220	260	7.6	88	0.12
OCS-260-7047	110	77 - 138	3.22	120	1,83	220	260	7.6	89	0.08

* Typical values

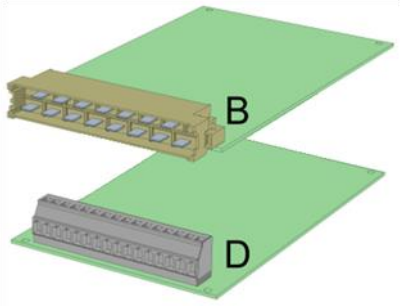
Several references are subjected to special MOQs and lead times. Please consult Premium's Sales Dept. and web site.

OCS–260–70_ _–_ _

T Railway (Optional)

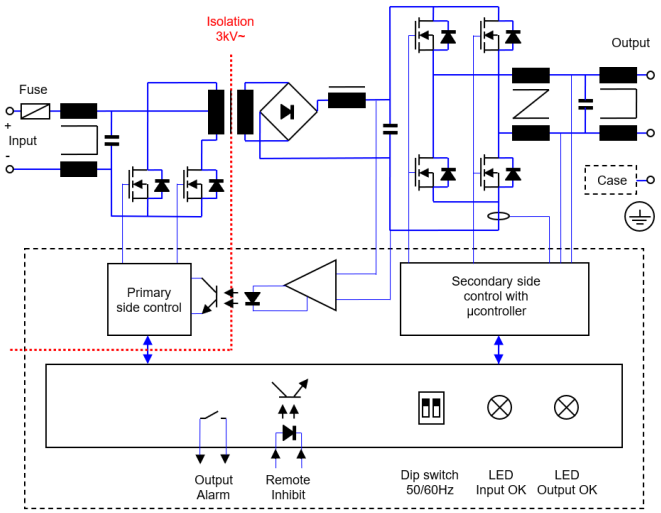
B Connector DIN41612H15
D Spring clamp terminals

Model number



Accessories must be ordered in a separated order line

BLOCKS DIAGRAM



DESCRIPTION

The OCS-260 consists of sine-wave 120Vac or 230Vac output voltage DC-AC converters. The frequency can be set to 50Hz or 60 Hz, and input and output are galvanically isolated.

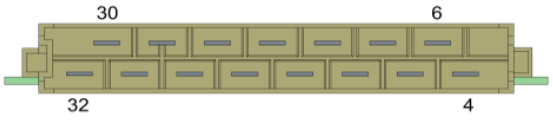
The OCS-260 inverters consist of two cascaded converters, one DC-DC generating an intermediate output voltage from the input voltage. That intermediate voltage is inverted to supply the output voltage and frequency by means of a second DC/AC converter.

The input is protected against reverse polarity by means of fuse and against under-voltage by unit shutdown.

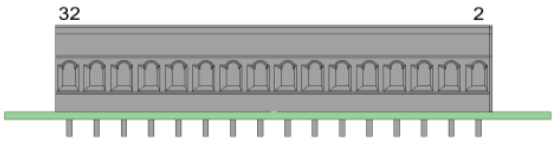
The output has protection of maximum average power and maximum peak current. The unit shutdowns when the operation curve limit is exceeded for more than one second. Every 2 seconds after shutdown, the unit tries to restart up to 3 times. If the overload persists, the unit remains shutdown until an input reconnection.

CONNECTIONS

Connector DIN41612H15 (Max. 12A / terminal)

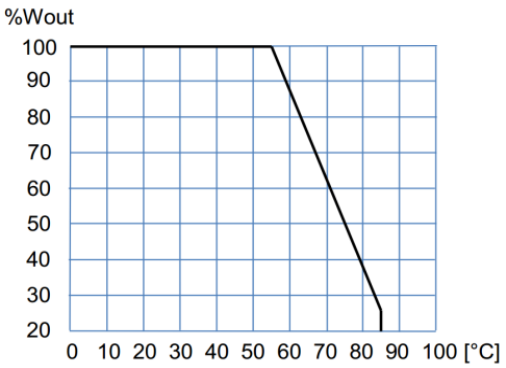


Spring clamp terminals (Max. 12A / terminal)

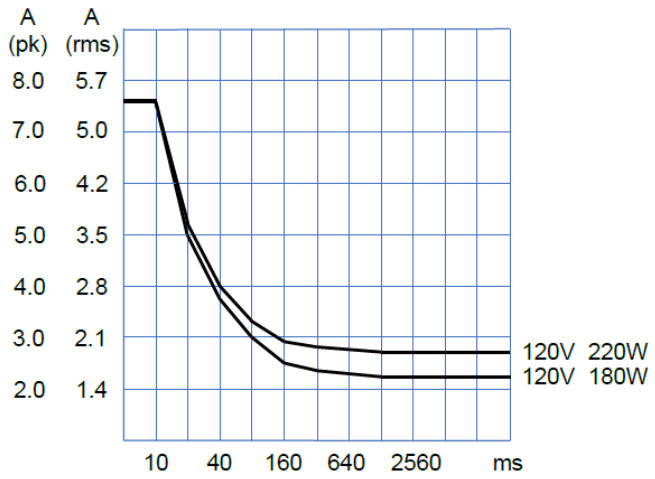


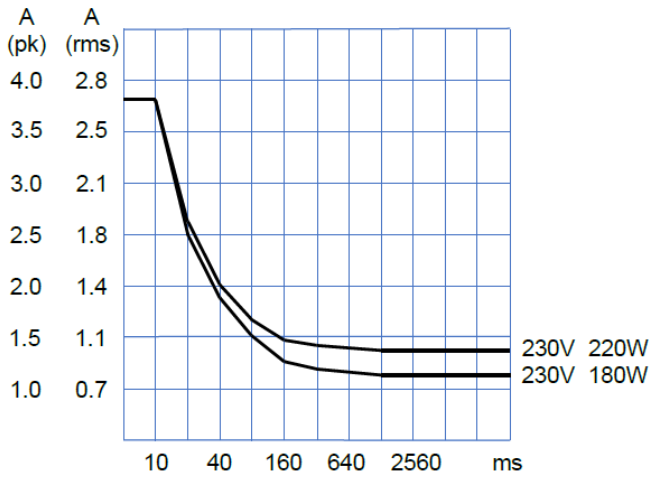
CONNECTION	Terminal
-Vin	2, 4, 6
+Vin	8, 10
-Inhibit	12
+Inhibit	14
-Alarm	16
+Alarm	18
N	22, 24
L	28, 30
PE	32

POWER DERATING vs AMBIENT TEMP.



OPERATION CURVE LIMITS





RECOMMENDED WIRING

	Input 12V	Input 24V	Input 36V	Input 48V	Input 72V	Input 110V	Output 120Vca	Output 230Vca
Max. Current [A]	23	14	10	7.4	5.0	3.2	2.2	1.2
Cable Section [mm²]	**2.5**	**1.5**	**1.5**	**1**	**0.75**	**0.75**	**0.75**	**0.75**

INSTALLATION

There are two connecting options: spring clamp terminal strip and DIN-41612-H15 connector.

The product can be mounted in several ways:

- On a chassis by means of the 4 corner holes.
- In EUROCARD racks. For this application there is a standard 10Te front plate accessory **NP-9289**
- With the mounting base **NP-9125.** This accessory can be mounted on a chassis or in DIN rail adding the clip accessory **NP-9135**.

Make connections as shown in the CONNECTIONS table.

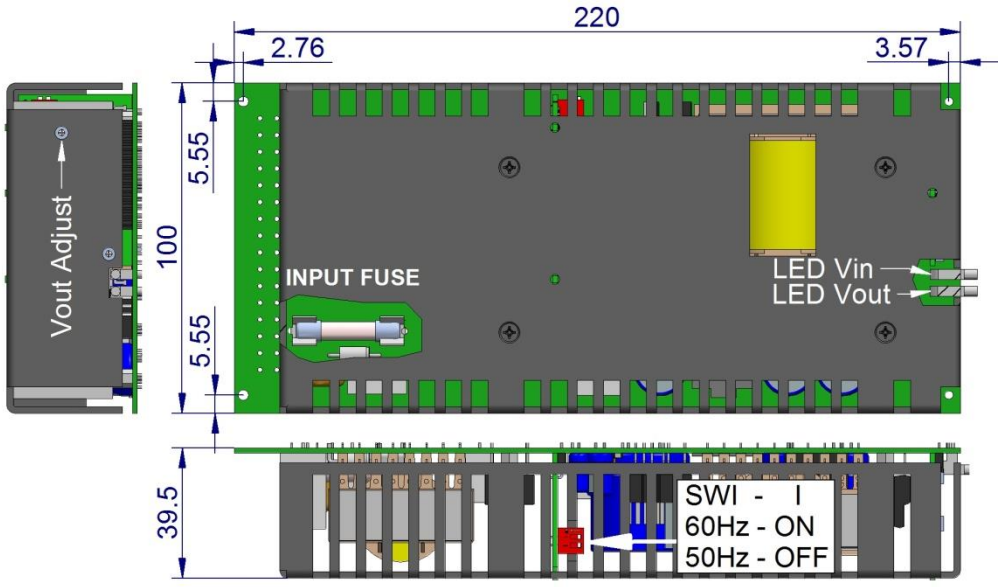
The default output frequency is 50Hz. For 60Hz simply actuate the dip-switch as indicated in the figure.

The inverter includes active overload protection but does not provide protection against prolonged reactive overload conditions. Therefore, the maximum power output (VA) should not be exceeded.

For safety reasons, the following requirements must be met:

- Provide the equipment with some kind of protective enclosure that complies with the electrical safety directives in effect within the country where the equipment is installed.
- Use cables of adequate cross-section to connect inputs and outputs. The following table lists the maximum currents and the minimum cross-sections for the cables used for each power connection.

DIMENSIONS

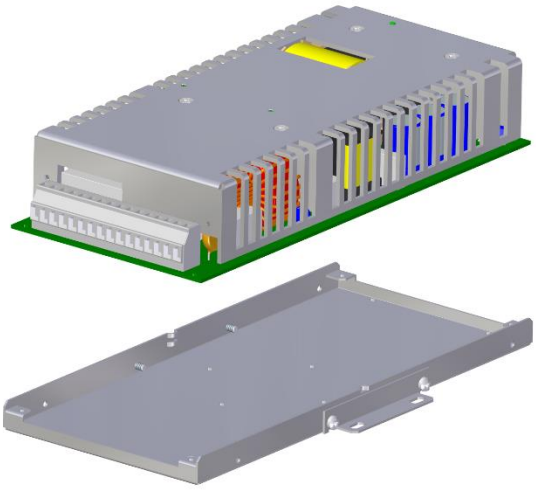


INPUT FUSE Size 6.3x32mm			
Models		Input	Rating
7031	7041	12V	T 30A
7033	7043	24V	T 15A
7034	7044	36V	T 12A
7035	7045	48V	T 8.0A
7036	7046	72V	T 6.3A
7037	7047	110V	T 4.0A

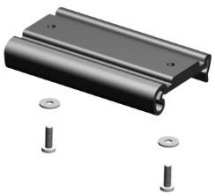
ACCESSORIES

ACCESSORIES	NOTES	CODE
Mounting base	Screws included	**NP-9125**
DIN RAIL CLIP for mounting base	Screws included	**NP-9135**
Front plate 19'' subrack (3U 10TE)	Screws and LED light guides included	**NP-9289**
FR4 PCB solder side cover protection	Screws included	**NP-9647**

NP-9125



NP-9135



NP-9647

NP-9289

EU DECLARATION OF CONFORMITY

The undersigned, representing the following:

Manufacturer: PREMIUM, S. A.,

Address: C/. Dolors Aleu 19-21, 08908 L'Hospitalet de Llobregat, SPAIN

herewith declares that the products:

Type: **DC/AC Inverter**

Brand: **Premium**

Models: **OCS-260-7041, OCS-260-7043, OCS-260-7044, OCS-260-7045, OCS-260-7046, OCS-260-7047, OCS-260-7031, OCS-260-7033, OCS-260-7034, OCS-260-7035, OCS-260-7036, OCS-260-7037**
with any of the suffixes **B**, **T** or **D**

is in conformity with the provisions of the following EU directive(s):

2014/35/EU	Low voltage / The electrical equipment (safety) regulations
2014/30/EU	EMC / Electromagnetic compatibility regulations
2011/65/EU Annex II and its amendment 2015/863/EU	RoHS / Restriction of the use of certain hazardous substances in electrical and electronic equipment

This declaration applies to all specimens manufactured identical to the samples submitted for testing/evaluation.

Assessment of compliance of the product with the requirements relating to aforementioned directives, was performed by Premium S.A. and is based on the following standards:

EN IEC62368-1:2020 A11:2020	Safety. Audio/video information and communication technology equipment
EN IEC61000-6-4:2019	Generic emission standard
EN IEC61000-6-2:2019	Generic Immunity standard
EN IEC63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
EN50155: 2021*	Railway applications. Electronic equipment used on rolling stock material
EN50121-3-2: 2019*	Railway applications. EMC Rolling stock equipment

* Optional, see annexe

CE marking year: **2014**

Notes:
For the fulfilment of this declaration the product must be used only for the aim that has been conceived, considering the limitations established in the instruction manual or datasheet.

L'Hospitalet de Llobregat, 06-08-2024

Albert Sole
Technical Director

PREMIUM S.A. is an ISO9001 and ISO14001 certified company by **Bureau Veritas**

UKCA DECLARATION OF CONFORMITY

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Address: C/. Dolors Aleu 19-21, 08908 L'Hospitalet de Llobregat, SPAIN

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with any of the suffixes **B**, **T**, or **D**

Complies with the essential protection requirements of the following regulations:

SI 2016 No 1101	Low voltage / The electrical equipment (safety) regulations
SI 2016 No 1091	EMC / Electromagnetic compatibility regulations
SI 2012 No. 3032	RoHS / Restriction of the use of certain hazardous substances in electrical and electronic equipment

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EN50121-3-2: 2019*	Railway applications. EMC Rolling stock equipment

* Optional, see annexe

UKCA marking year: **2021**

Notes:
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L'Hospitalet de Llobregat, 06-08-2024

Albert Sole
Technical Director

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ANNEXE

<table>
<tr><th colspan="4">Applicable values for the different sections of the norm EN50155: 2021</th></tr>
<tr><td>4.4.1</td><td>Working altitude</td><td colspan="2">Up to 1800m</td></tr>
<tr><td>4.4.2</td><td>Ambient temperature</td><td colspan="2">Class OT1 (-25 to 55°C): load < 100%
Class OT2 (-40 to 55°C): load < 100%
Class OT3 (-25 to 70°C): load <50%
Class OT4 (-40 to 70°C): load <50%</td></tr>
<tr><td>4.4.3</td><td>Switch-on extended operating temp.</td><td colspan="2">ST1</td></tr>
<tr><td>4.4.4</td><td>Rapid temperature variations</td><td colspan="2">H1</td></tr>
<tr><td>4.4.5</td><td>Shocks and vibrations</td><td colspan="2">According EN61373:2010 Category 1 class B</td></tr>
<tr><td>4.4.6</td><td>EMC Electromagnetic Compatibility

EN50121-3-2:2019</td><td colspan="2">
<table>
<tr><th>Test</th><th>Norm</th><th>Port</th><th>Frequency</th><th>Limits</th></tr>
<tr><td rowspan="4">Radiated emissions</td><td rowspan="4">IEC55016-2-1</td><td rowspan="4">Case</td><td>30MHz…230MHz</td><td>40dB(µV/m) Qpk at 10m</td></tr>
<tr><td>230MHz…1GHz</td><td>47dB(µV/m) Qpk at 10m</td></tr>
<tr><td>1…3GHz</td><td rowspan="2">Do not apply
Internal freq. < 108MHz</td></tr>
<tr><td>3…6GHz</td></tr>
<tr><td>Conducted emissions</td><td>IEC55016-2-1</td><td>Input</td><td>150kHz…500kHz</td><td>99dB(µV) Qpk</td></tr>
<tr><td></td><td></td><td></td><td>500kHz…30MHz</td><td>93dB(µV) Qpk</td></tr>
</table>
<table>
<tr><th>Test</th><th>Norm</th><th>Port</th><th>Severity</th><th>Conditions</th><th>P</th></tr>
<tr><td rowspan="2">Electrostatic discharge</td><td rowspan="2">IEC61000-4-2</td><td rowspan="2">Case</td><td>±8kV</td><td>Air (isolated parts)</td><td rowspan="2">B</td></tr>
<tr><td>±8kV</td><td>Contact (conductive parts)</td></tr>
<tr><td rowspan="4">Radiated high-frequency</td><td rowspan="4">IEC61000-4-3</td><td rowspan="4">X/Y/Z Axis</td><td>20V/m</td><td>0.08…1.0GHz M. 80% 1kHz</td><td rowspan="4">A</td></tr>
<tr><td>10V/m</td><td>1.4…2.1GHz M. 80% 1kHz</td></tr>
<tr><td>5V/m</td><td>2.1…2.5GHz M. 80% 1kHz</td></tr>
<tr><td>3V/m</td><td>5.1…6Ghz M. 80% 1kHz</td></tr>
<tr><td rowspan="4">Fast transients</td><td rowspan="4">IEC61000-4-4</td><td>Input</td><td>±2kV</td><td rowspan="4">Tr/Th: 5/50 ns</td><td rowspan="4">A</td></tr>
<tr><td>Output</td><td>±2kV</td></tr>
<tr><td>Signal</td><td>±2kV</td></tr>
<tr><td>PE</td><td>±1kV</td></tr>
<tr><td rowspan="2">Surge</td><td rowspan="2">IEC61000-4-5</td><td>Input L to L</td><td>±1kV</td><td rowspan="2">Tr/Th: 1.2/50µs</td><td rowspan="2">B</td></tr>
<tr><td>Input L to PE</td><td>±2kV</td></tr>
<tr><td rowspan="4">Conducted RF</td><td rowspan="4">IEC61000-4-6</td><td>Input</td><td>10V</td><td rowspan="4">0.15...80MHz M. 80% 1kHz</td><td rowspan="4">A</td></tr>
<tr><td>Output</td><td>10V</td></tr>
<tr><td>Signal</td><td>10V</td></tr>
<tr><td>PE</td><td>10V</td></tr>
</table>
P= Performance criteria, L= Line, PE= Protective Earth
</td></tr>
<tr><td>4.4.7</td><td>Relative humidity</td><td colspan="2">Up to 95%</td></tr>
<tr><td>5.2.2</td><td>DC power supply range</td><td colspan="2">From 0.70 to 1.25 Un continuous</td></tr>
<tr><td>5.2.3</td><td>Temporary DC power supply fluctuation</td><td colspan="2">From 0.60 to 1.40 Un 0.1s
From 1.25 to 1.40 Un 1s without damage</td></tr>
<tr><td>5.2.4</td><td>Interruptions of voltage supply</td><td colspan="2">Class S1 (without interruptions)</td></tr>
<tr><td>5.2.5</td><td>Supply change-over</td><td colspan="2">0,6 Un duration 100 ms (without interruptions). Performance criterion A</td></tr>
<tr><td>5.2.7</td><td>Input ripple factor</td><td colspan="2">10% peak to peak with a DC Ripple Factor of 5 %</td></tr>
<tr><td>7.2.7</td><td>Input reverse polarity protection</td><td colspan="2">By fuse</td></tr>
<tr><td>10.7</td><td>Protective coating for PCB assemblies</td><td colspan="2">Class PC2</td></tr>
<tr><td>13.3</td><td>Tests list</td><td>1 Visual Inspection
2 Performance test
3 DC Power supply test
4 Low temperature test
5 Dry heat test
6 Low temperature storage test
7 Insulation test
8 Cyclic damp heat test
9 Electromagnetic compatibility test
10 Shock and vibration test
11 Enclosure protection test (IP code)
12 Stress screening test
13 Rapid Temperature variation test
14 Salt mist test</td><td>Routine
Routine
Type
Type
Type
-
Routine
Type
Type
Type
-
Routine: 40C and load 100%
-
-</td></tr>
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