



CSM 30/31/32/33



## CSM 30/31/32/33 Modular DC to DC Converter Systems

Argus introduces a new generation of DC to DC converters designed for powering 130 VDC optical networking equipment.

**Power technology for tomorrow's optical network** The rapid deployment of high bandwidth fiber networks demands special powering solutions. The higher voltages, lower currents and inherent scalability of these networks requires extremely cost effective power equipment that doesn't compromise on features or efficiency. Argus' new CSM 30/31/32/33 converters are especially suited to meet these needs.

**Flexibility of choice** The CSM 30/32 provides 2 individual outputs per module for direct connection to the load; an excellent choice for high power optical networking units (ONU). Alternatively, the CSM 31/33 with parallel output offers a bulk system approach. Connection to the load is accomplished through CLM current limiter modules. This is a cost effective solution for a large number of low power ONUs. Choose the converter model which best suits your application.

**More power, less cost** The CSM 30/31/32/33 converters offer greater power densities than ever before, yet maintain an exceptionally low per unit cost. The 23" model houses up to 16 converter modules. System scalability is achieved with the CSM's modular architecture. Modules are easily added to the power system as the network capacity increases.

**Worry-free DC power service** The CSM 30/32 incorporates a manual bypass connector option, which allows power modules to be removed or inserted with ease, even while the load is online. Combine this with an N+1 automatic redundant switching option — which automatically transfers the power output from a failed module to another power module within milliseconds — and you can rest easy knowing your subscribers are virtually guaranteed uninterrupted service.

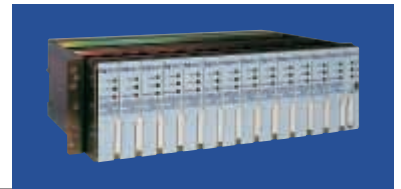
- 100W x 2 power outputs per module
- Up to 13 modules (19") or 16 modules (23")
- Two isolated outputs/module (CSM 30/32)
- Hot pluggable modules
- Current and power limiting protection
- Serial communications interface (optional)
- Automatic redundant switching (CSM 30/32)
- NEBS compliant models (CSM 32/33)

**Better power efficiency provides energy savings** Due to its extremely advanced switching techniques, the CSM 30/31/32/33 provides unparalleled power conversion efficiencies. This translates into dramatic reductions in power consumption. The minimum full load efficiencies are 88 and 87 percent for the CSM 30/32 and CSM 31/33 respectively.

**Low profile offers versatile installation options** At just three rack units high, the CSM cabinet is easily incorporated into existing outside plant installations such as roadside closets or pole-mounted enclosures.

**Durable, temperature-hardened design** These new converter systems will perform optimally even during the most severe environmental conditions, including extreme fluctuations in temperature and humidity. This makes them an ideal choice for outside plant applications. With the fan cooling option, the units will withstand temperatures up to 65°C and will also operate as low as -40°C.

**Expanded features equals better value** The CSM 30/31/32/33 comes with all the latest features and options, including power/current limiting, high/low voltage protection, over temperature protection, input/output fuses and an optional serial communications interface for remote monitoring.



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Power Module(s)	Standards																										
<p><b>Electrical</b></p> <p>Input voltage: -40 to -60 VDC</p> <p>Output voltage: -137 x 2 or ±137 VDC</p> <p>Output:</p> <p>Current: 0.7A x 2 @ 137 VDC</p> <p>Power: 100W x 2</p> <p>Efficiency: &gt;88% at full load (CSM 30/32) &gt;87% at full load (CSM 31/33)</p> <p>Regulation:</p> <p>Static: &lt;-0.5% load (CSM 30/32) 3% load (CSM 31/33) &lt;+/- 0.05% line</p> <p>Dynamic: &lt;3% for 0 to 100% load step</p> <p>Response time: &lt;2msec to 0.1% of output</p> <p>Noise:</p> <p>Wide band: &lt;100mV RMS (10kHz to 10MHz) &lt;1V pk to pk (10kHz to 100MHz)</p> <p>Acoustic: &lt;45 dBa at 1m (3 ft)</p> <p>EMI: meets GR-1089-CORE</p>	<p>Protection: N+1 redundancy (CSM 30/32) High/Low voltage shutdown Power and current limiting Paralleling diodes (CSM 31/33) Input/output fuses Over temperature protection</p>																										
	Redundancy Control/Alarm Module																										
	<p><b>Features:</b></p> <p>Indicators: Power on LED Minor alarm LED Major alarm LED</p> <p>Controls: Manual bypass connector (CSM 30/32 only) RS-485 SC I (future option)</p> <p>Protection: Automatic redundant switching (CSM 30/32 only) Low/high voltage protection Input transient Input fuse</p>																										
	Cabinets																										
<p><b>Environmental</b></p> <p>Temperature: -40° to 40°C (-40° to 104°F) (natural convection) -40° to 65°C (-40° to 149°F) (with fan cooling)</p> <p>Humidity: 5 to 95% R.H. non-condensing</p> <p>Elevation: -500 to 2800m (-1640 to 9186 ft)</p>	<p>Dimensions: 132H x 483/533W x 305D mm (inches) (5.2" H x 19" /21" W x 12" D)</p> <p>Weight:</p> <p>19" cabinet: 11.5 kg (25 lb.)</p> <p>23" cabinet: 13.8 kg (30 lb.)</p> <p>Mounting:</p> <p>19" cabinet: Fits all 19" racks, center or flush mount (13 modules)</p> <p>23" only cabinet: Fits 23" racks only center or flush mount (16 modules)</p> <p>Connections:</p> <p>Input: Box type terminal block 2.5 to 10mm<sup>2</sup> (#14 to 8 AWG)</p> <p>Output: 0.34mm<sup>2</sup> (#22 AWG) ribbon cable (CSM 30/32) 10mm<sup>2</sup> (#8 AWG) terminal block (CSM 31/33)</p> <p>Alarms/control: Terminal block 0.55 to 1.5mm<sup>2</sup> (#20 to 16 AWG)</p>																										
<p><b>Features</b></p> <p>Indicators: Power on LED Module fail LED Redundant on LED (CSM 30/32)</p> <p>Alarms: Converter fail</p> <p>Cabinet Alarms: Major fail† Minor fail†</p> <p>† Form C contacts</p>	<p><b>Ordering Information</b> Please consult the factory for detailed ordering information.</p> <p><b>Power modules</b></p> <table border="1"> <thead> <tr> <th>Part #</th> <th>Model #</th> </tr> </thead> <tbody> <tr> <td>012-544-20</td> <td>CSM 30</td> </tr> <tr> <td>012-520-20</td> <td>CSM 31</td> </tr> <tr> <td>012-545-20</td> <td>CSM 32*</td> </tr> <tr> <td>012-546-20</td> <td>CSM 33*</td> </tr> </tbody> </table> <p><b>Other modules</b></p> <table border="1"> <tbody> <tr> <td>018-535-20</td> <td>Alarm module*</td> </tr> <tr> <td>747-101-20</td> <td>Blank module*</td> </tr> </tbody> </table> <p><b>Cabinets</b></p> <table border="1"> <tbody> <tr> <td>030-579-20</td> <td>23" cabinet (CSM 30)</td> </tr> <tr> <td>030-588-20</td> <td>19" cabinet (CSM 30)</td> </tr> <tr> <td>030-597-20</td> <td>19" cabinet (CSM 31)</td> </tr> <tr> <td>030-600-20</td> <td>23" cabinet (CSM 31)</td> </tr> <tr> <td>030-609-20</td> <td>23" cabinet (CSM 32)*</td> </tr> <tr> <td>030-610-20</td> <td>23" cabinet (CSM 33)*</td> </tr> </tbody> </table> <p><small>Due to continuing product improvements, Argus reserves the right to change specifications without notice.</small></p>	Part #	Model #	012-544-20	CSM 30	012-520-20	CSM 31	012-545-20	CSM 32*	012-546-20	CSM 33*	018-535-20	Alarm module*	747-101-20	Blank module*	030-579-20	23" cabinet (CSM 30)	030-588-20	19" cabinet (CSM 30)	030-597-20	19" cabinet (CSM 31)	030-600-20	23" cabinet (CSM 31)	030-609-20	23" cabinet (CSM 32)*	030-610-20	23" cabinet (CSM 33)*
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