Higher power industrial-grade DC in a compact package

- **Applications** – process control, communications, utilities
- **Compact dimensions** – offers high output power in a small package
- **Wide model range** – 24, 48 and 120 DC nominal, up to 200 amps
- **Accurate temperature compensated charging** – makes batteries last longer
- **Filtered DC output** – is ideal for electronic loads
- **Standard AC and DC breakers** – eliminate need for spare fuses
SENS F3 charger is widely specified and used, together with batteries, to supply non-stop DC power to critical applications. SENS F3 users include a wide variety of engineering and consulting firms, energy companies, utilities, power generation equipment manufacturers and government entities such as the Department of Energy and US Navy.

The F3 is a higher powered, three-phase input variant of SENS’ popular DCT series.

**F3 Filtered Charger specifications**

**AC input, three-phase**
- Standard 60 Hz inputs: Single input, 208 or 480 VAC, 60 Hz
- Optional 60 Hz inputs: 240, 208 or 480 VAC
- Optional 50 Hz inputs: 380 or 400 VAC, 50 Hz
- Voltage, frequency tolerance: Voltage ±10%, frequency ±5%
- Input protection: 2-pole circuit breaker, soft start, transient protection

**Charger Output**

<table>
<thead>
<tr>
<th>Nominal voltage ratings</th>
<th>24, 48 or 120 volts nominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line and load regulation</td>
<td>±1% of the correct temperature compensated value</td>
</tr>
<tr>
<td>Current limit</td>
<td>105% typical, adjustable from 50% to 110%</td>
</tr>
<tr>
<td>Charge characteristic</td>
<td>Constant voltage, current limited, 2-rate</td>
</tr>
<tr>
<td>Charge mode control</td>
<td>User selectable float, manual equalize or battery-interactive automatic equalize modes</td>
</tr>
<tr>
<td>Standard output filtering</td>
<td>24, 48V: 30 mV rms on battery 4 times AH of charger’s amp rating, 100 mV rms without battery</td>
</tr>
<tr>
<td></td>
<td>120V: 150 mV rms on battery</td>
</tr>
<tr>
<td>Temperature compensation</td>
<td>Standard local sensing, -0.2%/degree C slope. Remote sensor optional</td>
</tr>
<tr>
<td>Output protection</td>
<td>Current limit, 2-pole circuit breaker</td>
</tr>
<tr>
<td>Parallel operation</td>
<td>Load share standard</td>
</tr>
</tbody>
</table>

**User interface, indication, alarms and controls**

- **Output meters**: 3.5” scale 2% accuracy analog meters for output volts and amps
- **Status indication**: LED indicators for AC good, float mode, equalize mode
- **Alarm indications**: LED indicators plus Form C contacts for AC fail, low DC volts, high DC volts, charger fail, ground fault, overvoltage shutdown, summary alarm
- **Alarm contacts rating**: 2A at 26 VDC, 0.5A at 120 VAC, resistive
- **Equalize control**: Select float only, manual equalize or automatic equalize
- **Output voltage adjustments**: Separately adjustable float and equalize voltages
- **Alarm test**: Alarm LED test button activates all LEDs
### Environmental
- **Operating temperature**: -20°C to +50°C
- **Humidity**: 5% to 95%, non-condensing
- **Seismic compliance**: UBC Seismic Zone 4

### Mechanical/construction
- **Housing material**: Heavy gauge clear anodized aluminum with steel backbone.
- **Configurations**: Mounts on wall or in 23” relay rack. Optional free-standing configuration
- **Electrical connections**: Compression terminals
- **Cooling**: Convection cooled. Filter capacitors and circuit cards protected from internal heat sources.

### Housing dimensions table

<table>
<thead>
<tr>
<th>Housing</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC-3A</td>
<td>23.00” (584 mm)</td>
<td>15.33” (389 mm)</td>
<td>31.47” (799 mm)</td>
</tr>
</tbody>
</table>

### Optional features
- **Input**: Optional input voltages as listed under AC input
- **Remote temp comp sensor**: Recommended where battery and charger are in different temperatures
- **Equalize timer**: 0-24 or 0-72 hour equalize timer (60 Hz only)
- **Circuit board protection**: Tropicalization of circuit cards
- **Output filtering**: 30 mV filter (on battery) in 120 VDC units
- **Mounting**: Optional floor mounting
- **Drip shield**: Protects from dripping water to IP22
**F3 Ordering information**

<table>
<thead>
<tr>
<th>Output Volts</th>
<th>Output Amps</th>
<th>Model</th>
<th>AC Input</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>50</td>
<td>F324-50</td>
<td>208/60</td>
<td>230</td>
</tr>
<tr>
<td>24</td>
<td>75</td>
<td>F324-75</td>
<td>208/60</td>
<td>249</td>
</tr>
<tr>
<td>24</td>
<td>100</td>
<td>F324-100</td>
<td>208/60</td>
<td>256</td>
</tr>
<tr>
<td>24</td>
<td>150</td>
<td>F324-150</td>
<td>208/60</td>
<td>270</td>
</tr>
<tr>
<td>24</td>
<td>200</td>
<td>F324-200</td>
<td>208/60</td>
<td>285</td>
</tr>
<tr>
<td>48</td>
<td>50</td>
<td>F348-50</td>
<td>208/60</td>
<td>249</td>
</tr>
<tr>
<td>48</td>
<td>75</td>
<td>F348-75</td>
<td>208/60</td>
<td>265</td>
</tr>
<tr>
<td>48</td>
<td>100</td>
<td>F348-100</td>
<td>208/60</td>
<td>280</td>
</tr>
<tr>
<td>48</td>
<td>200</td>
<td>F348-200</td>
<td>208/60</td>
<td>330</td>
</tr>
<tr>
<td>120</td>
<td>25</td>
<td>F3120-25</td>
<td>480/60</td>
<td>263</td>
</tr>
<tr>
<td>120</td>
<td>35</td>
<td>F3120-35</td>
<td>480/60</td>
<td>260</td>
</tr>
<tr>
<td>120</td>
<td>50</td>
<td>F3120-50</td>
<td>480/60</td>
<td>385</td>
</tr>
<tr>
<td>120</td>
<td>75</td>
<td>F3120-75</td>
<td>480/60</td>
<td>461</td>
</tr>
<tr>
<td>120</td>
<td>100</td>
<td>F3120-100</td>
<td>480/60</td>
<td>535</td>
</tr>
</tbody>
</table>

**Note:** Not all configurations are available on all models. Contact the factory for confirmation.

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**Additional Information**

Contact SENS or your local sales representative for additional specification, engineering and installation information. Check the SENS web site for latest available data. Specification is subject to change without notice.

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**Contact Information**

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www.sens-usa.com • info@sens-usa.com

1840 Industrial Circle, Longmont, CO 80501 USA

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**F3 number breakout**

- **Output voltage**
  - 24: 24 volts
  - 48: 48 volts
  - 120: 120 volts

- **Output current**
  - 25: 25 amps
  - 35: 35 amps
  - 50: 50 amps
  - 75: 75 amps
  - 100: 100 amps
  - 150: 150 amps
  - 200: 200 amps

- **AC input:** 3-phase
  - C: 208 VAC, 60 Hz
  - D: 240 VAC, 60 Hz
  - E: 380 VAC, 50/60 Hz
  - F: 480 VAC, 60 Hz
  - K: 400 VAC, 50/60 Hz

- **Float/equalize control**
  - 3: Automatic equalize with manual over-ride
  - 6: 0-24 hour equalize timer
  - 7: 0-72 hour equalize timer

- **DC protection configuration**
  - Factory specified only

- **Alarm system code**
  - 6: Standard F3 alarm package with remote contacts

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