# DATA SHEET
## Synchronous Alternator

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|---|---|---|---|
| Customer | : | Notes: | |
| Customer reference | : | | |
| Product line | : AG10-250MI00AI | Product code | : 14418694 |
| Area classification | : Safe | | 1010265932 |

**General data**

| | |
|---|---|
| Frame (IEC) | : 250 |
| Insulation Class | : 180°C (H) |
| THD (L-L, no load) | : ≤ 3% |
| Stator winding pitch | : 2/3 |
| Altitude | : up to 1000 m.a.s.l |
| Number of Leads | : 12 |
| Power factor | : 0.8 to 1.0 |
| Excitation system | : Brushless with Auxiliary Coil |
| Cooling | : IC01 |

| | |
|---|---|
| Degree of protection | : IP23 |
| Mounting style | : B15T |
| Number of poles | : 4 |
| Type of Pole | : Salient |
| Rated speed - 50 Hz | : 1500 rpm |
| Nominal rotation - 60 Hz | : 1800 rpm |
| Overspeed | : 2250 rpm |
| Approx. weight | : 786 kg |
| Overload | : 1.1x In per 1h each 6h |
| Momentary Overload | : 1.5x In per 30s |

| | Frequency and number of phases | 50 Hz | | | | 60 Hz | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 3ph | | | 1ph | 3ph | | | | 1ph |
| Voltages (V) | Y (series star) connection | **380** | **400** | **415** | **-** | **380** | **416** | **440** | **480** | **-** |
| | YY (parallel star) connection | 190 | 200 | 208 | - | 190 | 208 | 220 | 240 | - |
| | Δ (series delta) connection | 220 | 230 | 239 | - | 220 | 240 | 254 | 277 | - |
| | ΔΔ (parallel delta) connection | 110 | 115 | 120 | - | 110 | 120 | 127 | 138 | - |
| | Zig-zag or single phase delta | - | - | - | 190 - 200 | - | - | - | - | 220 - 240 |
| Output power (kVA) | Continuous 80/40 | 220 | 220 | 209 | 127.0 | 244 | 257 | 256 | 292 | 147.8 |
| | Continuous 105/40 | 252 | 252 | 239 | 145.5 | 288 | 294 | 293 | 335 | 169 |
| | **Continuous 125/40** | **275** | **275** | **261** | **159** | **305** | **321** | **325** | **365** | **188** |
| | Standby 150/40 | 291 | 291 | 276 | 168 | 330 | 344 | 347 | 400 | 200 |
| | Standby 163/27 | 300 | 300 | 285 | 173 | 360 | 376 | 380 | 417 | 219 |
| Electrical data (FP=0.8 / Continuous 125/40 (H)) Satured reactances values | Xd(%) Dir. axis synchronous reactance | 521.6 | 417.3 | 396.0 | 695.5 | 645.7 | 518.2 | 481.5 | 436.03 | 642.0 |
| | X'd(%) Dir. axis transient reactance | 19.9 | 15.9 | 15.1 | 26.5 | 24.6 | 19.8 | 18.4 | 16.64 | 24.5 |
| | X"d(%) Dir. axis subtrans. reactance | 14.3 | 11.5 | 10.9 | 19.1 | 17.7 | 14.2 | 13.2 | 11.97 | 17.6 |
| | Xq(%) Quad. axis sync. reactance | 144.2 | 115.4 | 109.5 | 192.3 | 178.6 | 143.3 | 133.1 | 120.57 | 177.5 |
| | X"q(%) Quad. axis subtrans. react. | 11.5 | 9.2 | 8.7 | 15.3 | 14.2 | 24.7 | 10.5 | 9.58 | 14.0 |
| | X2(%) Negative sequence reactance | 18.6 | 14.9 | 14.2 | 24.9 | 23.1 | 19.4 | 17.2 | 15.58 | 22.9 |
| | X0(%) Zero sequence reactance | 2.4 | 1.9 | 1.8 | 3.2 | 3.0 | 2.4 | 2.2 | 2.0 | 2.9 |
| | T'd(ms) Short Circ.Trans.time const. | 71.9 | 57.5 | 57.5 | 95.9 | 89.0 | 68.5 | 66.4 | 60.13 | 88.5 |
| | T"d(ms) Short Circ. Sub. time const. | 1.9 | 1.5 | 1.5 | 2.5 | 2.3 | 1.8 | 1.8 | 1.58 | 2.3 |
| | T'do(ms) Open Circ. time const Trans | 1434 | 1148 | 1148 | 1913 | 1776 | 1367 | 1324 | 1199.11 | 1765 |
| | T"do(ms) Open Circ. time const Subt | 2.6 | 2.1 | 2.1 | 3.5 | 3.2 | 2.5 | 2.4 | 2.17 | 3.2 |
| | Ta(ms) Armature time const. | 12 | 10 | 10 | 16 | 15 | 11 | 11 | 9.95 | 15 |
| | uc(V) Full load excitation voltage | 62.9 | 61.9 | 61.9 | 62.9 | 55.6 | 58.9 | 55.1 | 60.71 | 55.1 |
| | ic(A) Full load excitation current | 3.8 | 3.7 | 3.7 | 3.8 | 3.3 | 3.5 | 3.3 | 3.65 | 3.3 |
| | ic(A) No load excitation current | 0.7 | 0.9 | 0.9 | 1.0 | 0.6 | 0.7 | 0.7 | 0.89 | 1.0 |
| | Icc(A) Sustained Short-Circ. Current | 1253 | 1191 | 1089 | 1191 | 1390 | 1318 | 1279 | 1317.08 | 1173 |
| | Kcc Short-circuit ratio | 0.47 | 0.38 | 0.25 | 0.63 | 0.58 | 0.49 | 0.43 | 0.39 | 0.58 |

| Efficiency (%) | Power factor | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25% of load | 91.5 | 93.4 | 91.7 | 93.5 | 91.9 | 93.7 | 84.2 | 85.9 | 92.1 | 93.7 | 92 | 93.6 | 91.9 | 93.5 | 91.8 | 93.5 | 84.6 | 86 |
| | 50% of load | 92.7 | 94.5 | 92.8 | 94.6 | 93 | 94.8 | 85.3 | 86.9 | 93.2 | 94.8 | 93.3 | 94.8 | 93.4 | 94.9 | 93.3 | 94.9 | 86 | 87.3 |
| | 75% of load | 92.1 | 94.1 | 92.4 | 94.4 | 92.6 | 94.6 | 84.8 | 86.6 | 92.6 | 94.4 | 92.8 | 94.6 | 93.2 | 94.8 | 93.1 | 94.8 | 85.7 | 87.2 |
| | 100% of load | 91.2 | 93.5 | 91.6 | 93.8 | 91.8 | 94 | 83.9 | 86 | 91.6 | 93.7 | 92 | 94 | 92.4 | 94.3 | 92.5 | 94.4 | 85.1 | 86.8 |
| | 125% of load | 90.2 | 92.6 | 90.7 | 93.2 | 90.9 | 93.3 | 80.8 | 83.4 | 90.4 | 92.8 | 91 | 93.2 | 91.6 | 93.7 | 91.8 | 93.9 | 84.2 | 86.2 |

**Other characteristics**

| | |
|---|---|
| Air flow | : 1.55 m³/s |
| Exciter stator winding resistance at 20ºC | : 12.17 ohm |
| Stator winding resistance at 20ºC | : 0.01616 ohm |
| Rotor winding resistance | : 1.28 ohm |
| Stator winding layers | : 2 |
| Inertia WR² | : 3.0 kgm² |
| NDE Bearing | : 6314 2RS |
| DE bearing | |
| Flange | : SAE 3 |
| Coupling disc | : SAE 11,5 |

**Automatic voltage regulator**

| | |
|---|---|
| Accuracy (stability) | : +/- 0.5% |
| Rated current | : 5 A |
| Analog input | : Yes |
| Digital input | : No |
| Peak current | : 7 A/10 s |
| Droop / TC | : Yes |
| Dynamic recovery | : 8 to 500 ms |
| U/F | : Yes |
| Internal voltage adjustment | : +/- 15% |
| External voltage adjustment | : +/- 10% |
| Transient recovery time for ΔU=20% | : 500 ms |

**According to:**

IEC 60034
NBR 5117
NEMA MG1
VDE530
ISO 8528
CSA

| Rev. | Changes Summary | Performed | Checked | Date |
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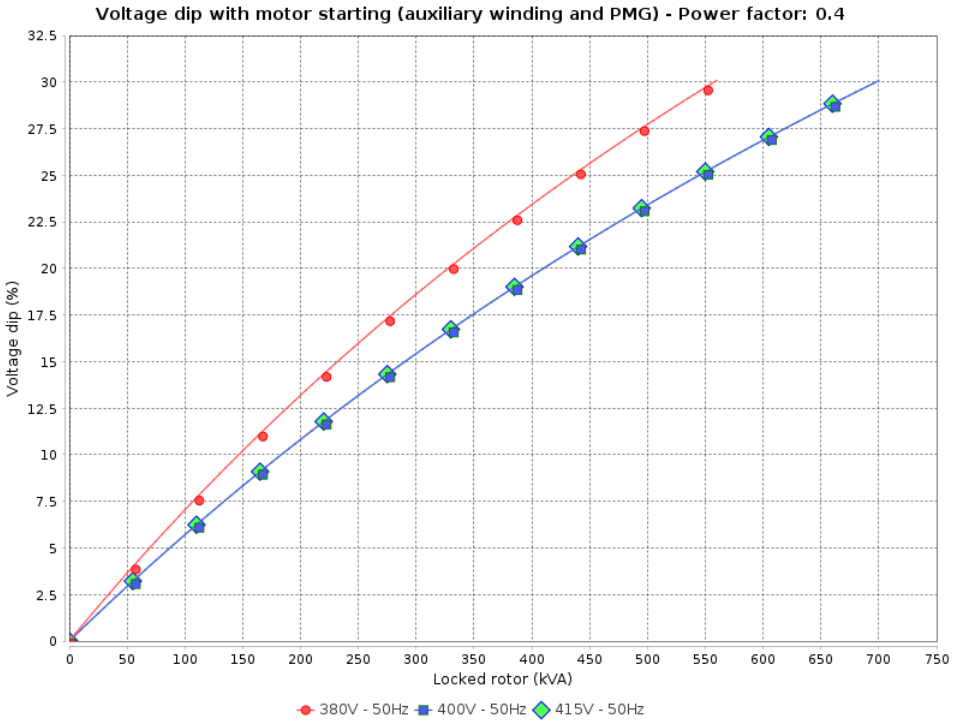


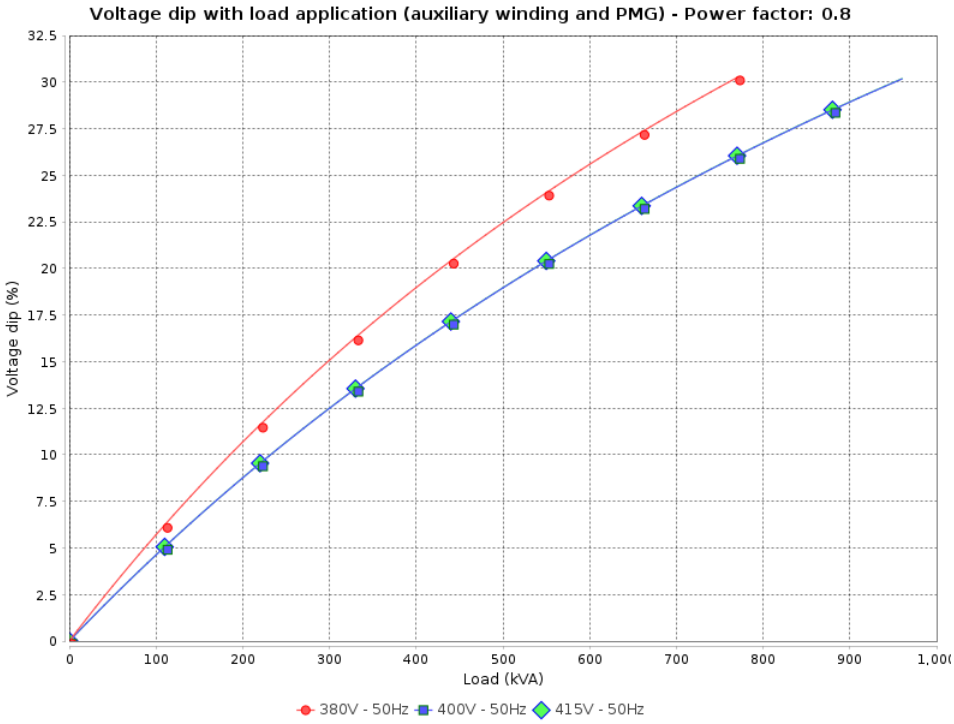


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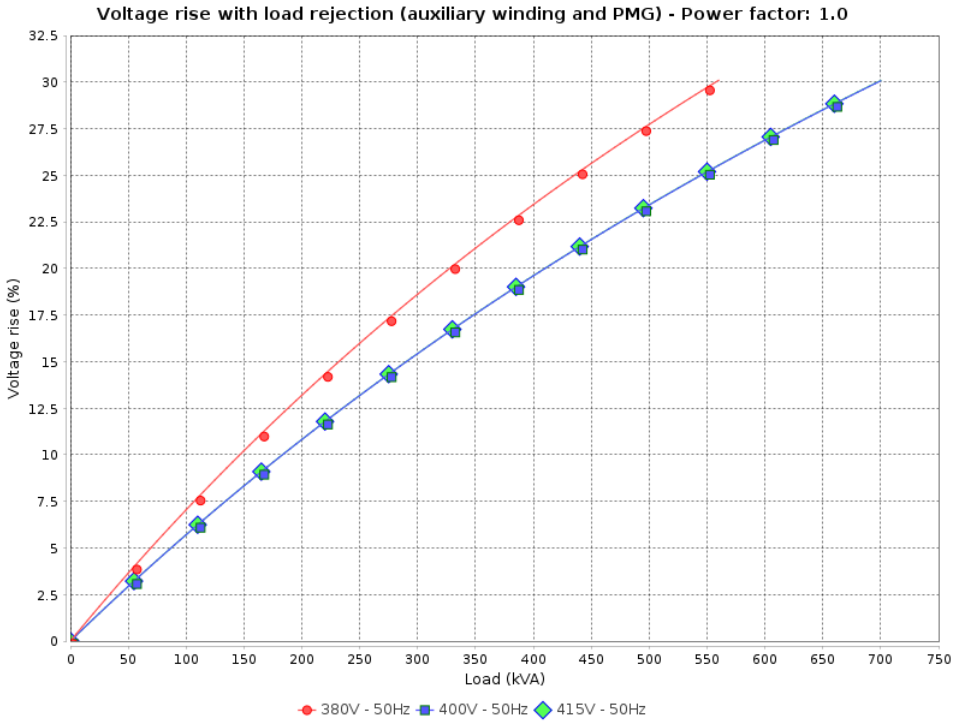


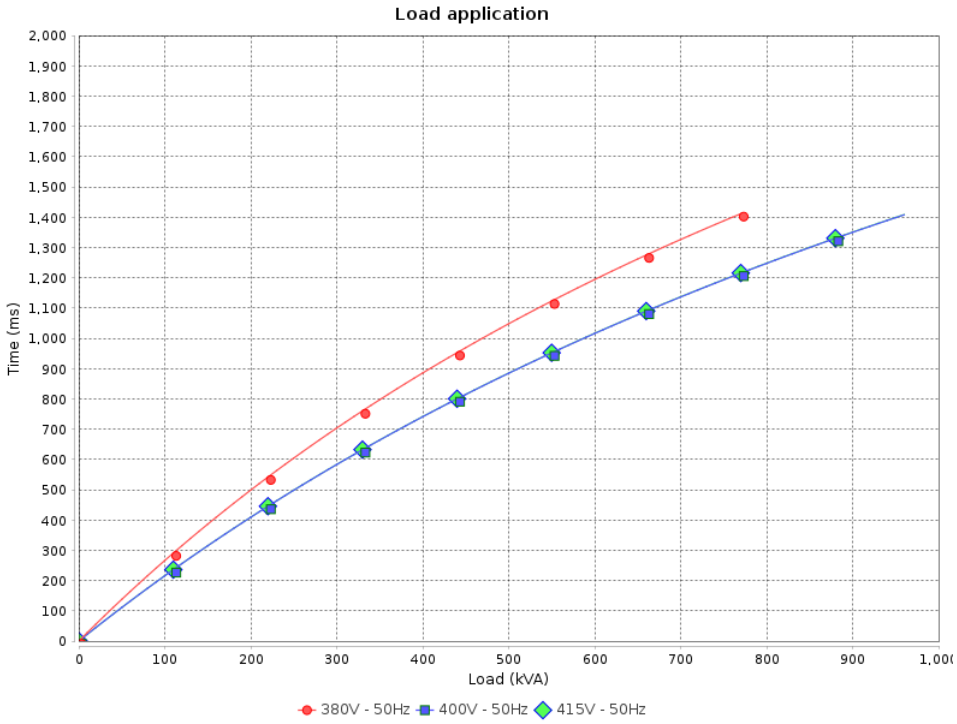


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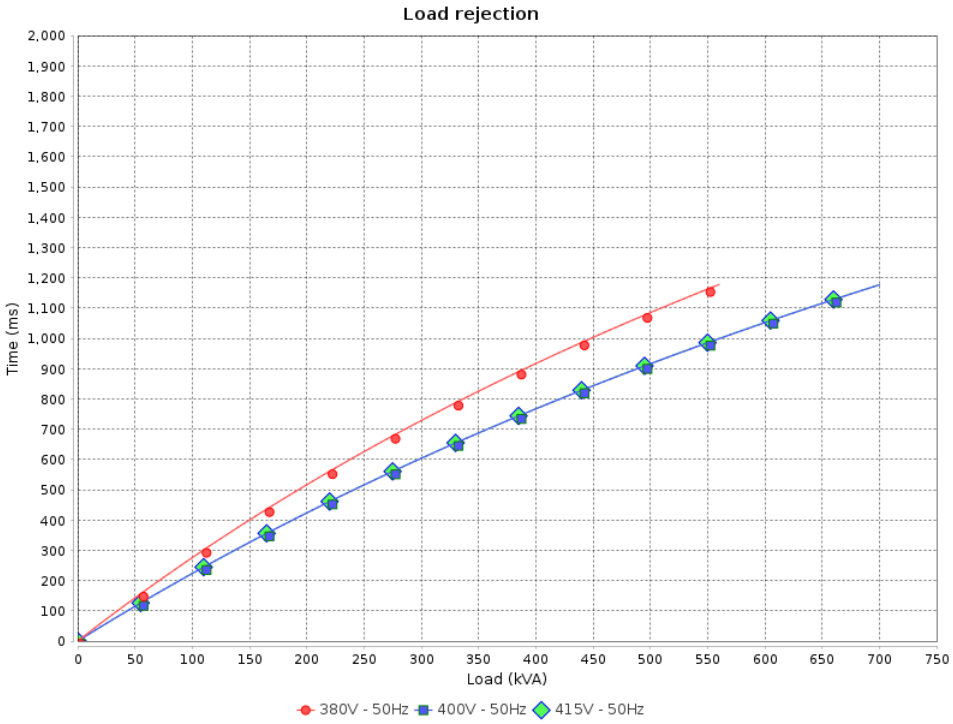


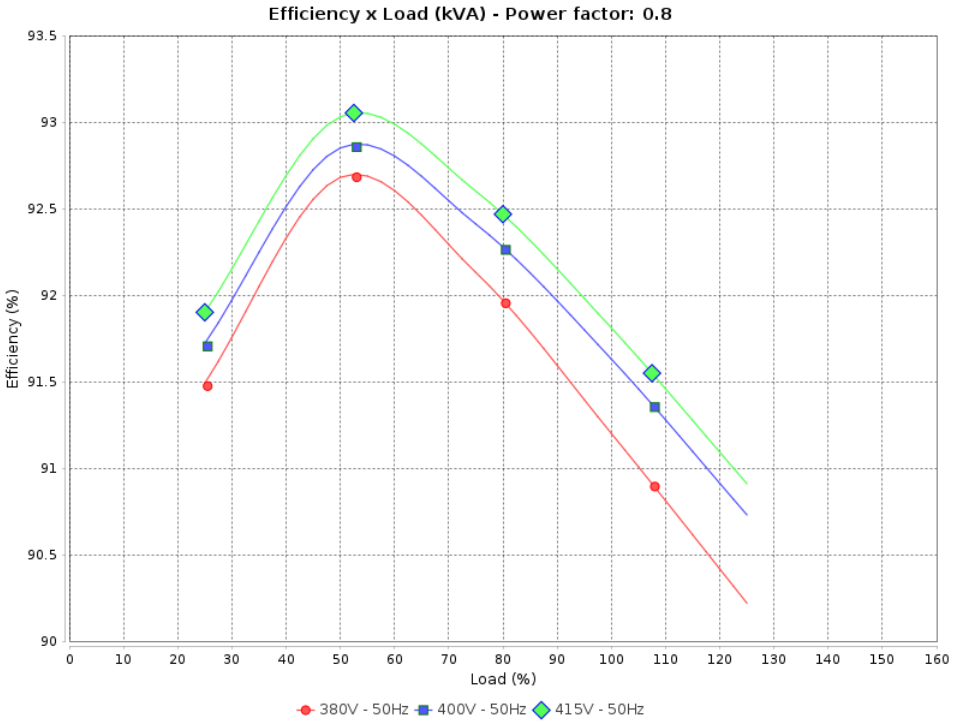


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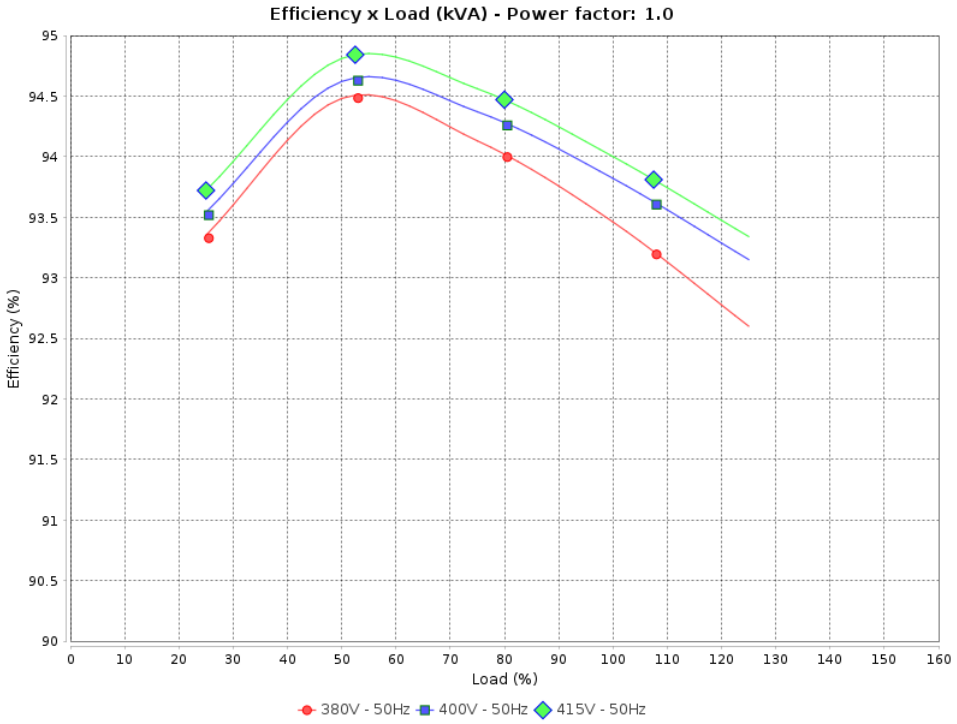


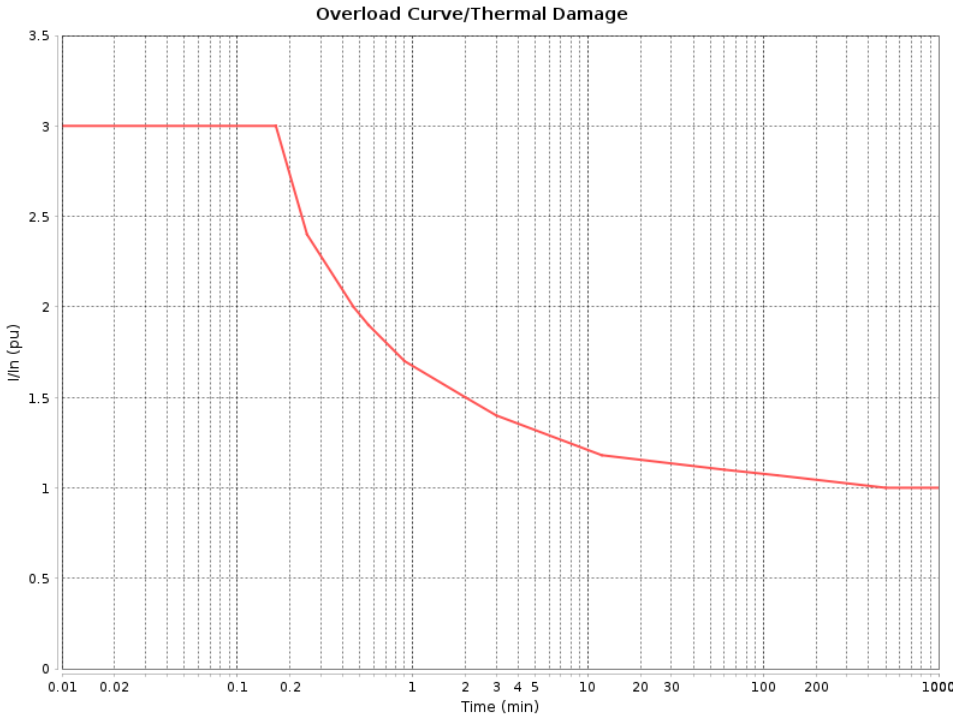


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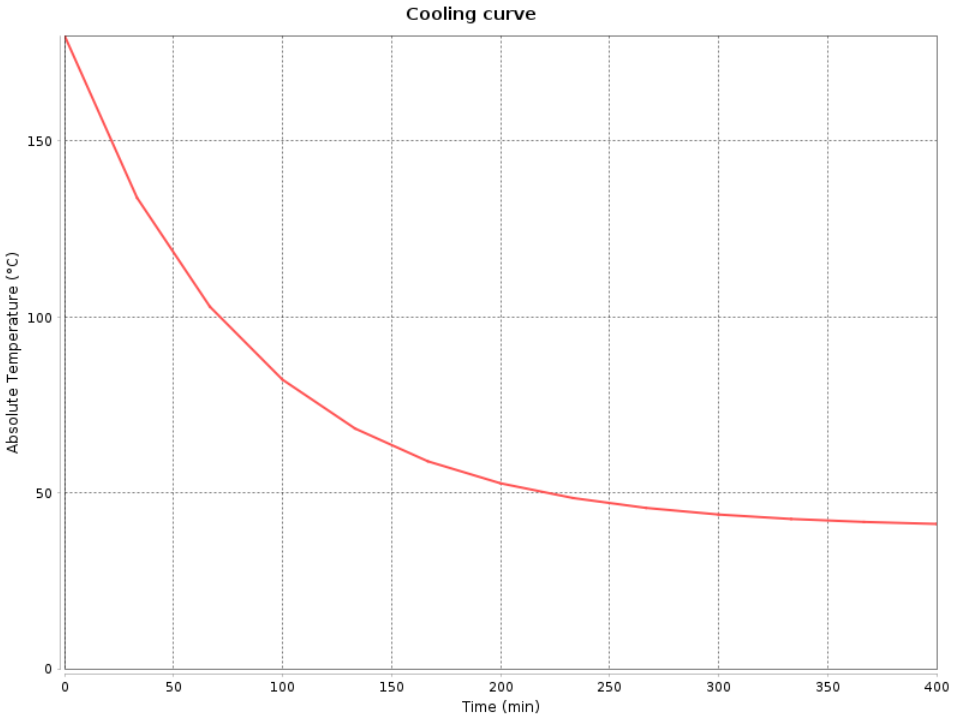


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