

EATON 93PR 75KW FRAME TECHNICAL SPECIFICATION

| Model (Part Number): | 93PR25(75)-MBS / - MBSINTBAT | 93PR50(75)-MBS / - MBSINTBAT | 93PR75(75)-MBS / - MBSINTBAT |
|----------------------|---------------------------------|---------------------------------|---------------------------------|
|----------------------|---------------------------------|---------------------------------|---------------------------------|

| GENERAL | | | |
|--------------------------------|---|--------------------------------|--------------------------------|
| Rating | 25kVA/25kW | 50kVA/50kW (25 kVA / 25kW N+1) | 75kVA/75kW (50 kVA / 50kW N+1) |
| Upgradability | Yes, to 75kW (50kW N+1) | Yes, to 75kW (50kW N+1) | No |
| UPS Topology | IGBT PWM Double Conversion | | |
| UPS Performance Classification | VFI-SS-111 | | |
| External Paralleling | Yes, up to 4 units with HotSync® Technology | | |

| MECHANICAL | | | |
|------------------------------|--|--------|--------|
| Dimensions (W x D x H) | 600 x 1100 x 2020 mm | | |
| Gross Weight (w/o batteries) | 406 kg | 437 kg | 468 kg |
| UPS Cable Entry | Rear to (default) & rear bottom (optional) | | |
| Degree of Protection | IP20 | | |
| Colour | Black; RAL 9005 | | |
| Mean time to repair (MTTR) | <10 minutes | | |

| ENVIRONMENTAL | |
|--|---|
| Acoustic Noise: 1m, 25°C ambient temperature | <65 dBA in double conversion <55 dBA in ESS |
| Ambient storage temperature range | -25°C to 55°C without batteries 0°C to 25°C with batteries indoors in the protective package |
| Ambient service temperature range UPS | 0 °C to + 40 °C without output power derating |
| Ambient service temperature range Batteries | + 20 °C to + 25 °C recommended for optimized battery life time |
| Relative humidity range | 5 to 95%, no condensation allowed |
| Maximum service altitude | 1000 m (3300 ft) above sea level at 40 °C Maximum 2000 m (6600 ft) with 1 % derating per each add. 100 m |
| RoHS/WEEE compliancy | Yes |

| EFFICIENCY | | | |
|--|-------|-------|-------|
| Efficiency in double-conversion, rated linear load | | | |
| 100% load | 95.8% | 95.8% | 95.8% |
| 75% load | 96.1% | 96.1% | 96.1% |
| 50% load | 96.4% | 96.4% | 96.4% |
| 25% load | 96.0% | 96.0% | 96.0% |
| Heat dissipation (watt) in double conversion | | | |
| 100% load | 1096 | 2192 | 3288 |
| 75% load | 761 | 1522 | 2283 |
| 50% load | 467 | 934 | 1400 |
| 25% load | 260 | 521 | 781 |
| Efficiency in ESS, rated linear load | | | |
| 100% load | 99.0% | | |
| 75% load | 99.1% | | |

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| ELECTRICAL CHARACTERISTICS (INPUT) | | | |
| Rated input voltage | 220/380 V; 230/400 V; 240/415 V | | |
| Voltage tolerance Rectifier input | 187 to 276 V | | |
| Bypass input | rated voltage -15% / +10% | | |
| Rated input frequency | 50 or 60 Hz, user configurable | | |
| Frequency tolerance | 40 to 72 Hz | | |
| Rectifier input phases | 3 phases + neutral | | |
| Bypass input phases | 3 phases + neutral | | |
| Input power factor, double conversion 100% load | > 0.99 | | |
| Rated input r.m.s. current | | | |
| 380V | 40 A | 80 A | 120 A |
| 400V | 38 A | 76 A | 114 A |
| 415V | 37 A | 73 A | 110 A |
| Maximum input r.m.s. current | 45 A | 90 A | 135 A |
| Input current distortion at rated input current | < 3%, 100% load < 3%, 75% load <5%, 50% load <10%, 25% load | | |
| In-rush current | Input filter components only | | |
| AC power distribution system compatibility | TN-S, TN-C, TN-C-S, TT | | |
| Rectifier ramp-up, rectifier start and load step | 5 A/s (default), configurable. Minimum 1 A/s. | | |
| Back feed protection | Option, for rectifier and bypass lines | | |
| ELECTRICAL CHARACTERISTICS (OUTPUT) | | | |
| Number of output phases | 3 phases + neutral | | |
| Crest factor | 3:1 | | |
| Rated output voltage | 220/380 V; 230/400 V; 240/415 V, configurable | | |
| Output voltage variation, steady state | < 1% | | |
| Total voltage harmonic distortion | | | |
| 100% linear load | < 1% | | |
| 100% non-linear load | < 5% | | |
| Voltage unbalance at reference unbalanced load | < 0,1% | | |
| Voltage transient (r.m.s) at 100% step load | 4% | | |
| Recovery time to steady state at 100% step load | 100 ms | | |
| Rated output frequency | 50 or 60 Hz, configurable | | |
| Output frequency variation | ± 0,1 Hz | | |
| Slew rate | 0.8 - 1 Hz/s | | |
| Maximum frequency range for synchronization with bypass | ± 4 Hz as default. User settable 0,5 to 5 Hz. | | |
| Maximum synchronized phase error | < 1° with static balanced load | | |
| Maximum slew-rate when synchronizing | 1 Hz/s | | |

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| Overload Capability (On inverter) | | 10 min 105-110% load 60 sec 111-125% load 10 sec 126-150% load 300 ms >150% load | |
| Overload Capability (Stored energy mode) | | 10 min 105-110% load 60 sec 111-125% load 10 sec 126-150% load 300 ms >150% load | |
| Overload Capability (ESS mode) | | Continuous < 110% load 20 ms 1000% load | |
| Overload Capability (On bypass) | | Continuous < 125% load 20 ms 1000% load | |
| Output current limitation, short-circuit capability | | 2.0 * rated current | |
| Fault clearing capability | | Fast acting fuse | |
| Load power factor (Rated) | | 1 | |
| Load power factor (Permitted range) | | 0.8 lagging to 0.8 leading | |

ESS MODE CHARACTERISTICS

| | |
|------------------------------------|--|
| Transfer time to double-conversion | |
| Mains available | No break |
| Mains failure | Typically 2 ms |
| Output voltage variation setting | ± 10% of nominal voltage, default |
| Output frequency variation setting | ± 4 Hz, default |
| Storm detection | UPS locks into double-conversion mode when three power line disturbances have forced the unit to double-conversion three times (user adjustable) within a one-hour period (user adjustable). |
| High Alert mode | PS will stay on double-conversion for one hour (user adjustable), after which the unit will automatically return to operate on ESS. |

BYPASS

| | |
|----------------------------|---|
| Type of bypass | Static |
| Bypass rating | 75kW |
| Bypass voltage range | 220/380 V; 230/400 V; 240/415 V tolerance -15% / +10% of rated voltage |
| Transfer time break | |
| Mains available | No break |
| Mains failure | 2 ms typical |
| Maintenance bypass | Internal Standard |
| Bypass thyristor i2t value | 145000 A2s |
| Bypass Fuse | 180A |

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| BATTERY CHARACTERISTICS | |
|--------------------------------|--|
| Battery technology | 12 V, VRLA |
| Battery design life | 5 or 10 years |
| Battery quantity | 40 to 42 blocks, 240 to 252 cells per battery string 40 blocks default 400Vdc minimum DC cut-off voltage |
| Battery voltage | 480 to 504 V, default 480V |
| Nominal Ah capacity (C10) | See Eaton EBC declaration |
| Stored energy time | See separate declaration |
| Recharge profile | ABM or continuous floating |
| End of discharge voltage | 1.67 VPC to 1.75 VPC Configurable or automatic (load adaptive) |
| Charge current limit | Default 4A, configurable, maximum 25A per UPM |
| Battery start option | Yes |

| COMMUNICATION CIRCUITS | |
|--|---|
| Standard connectivity ports | 3 Mini-slot ports for optional cards, USB, RS-232 service port, relay output, 5 building alarm inputs and a dedicated EPO Web and SNMP card |
| Complete list of indications and interface devices | See User's and Installation Guide |

| COMPLIANCE WITH STANDARDS | |
|----------------------------------|---|
| Safety Access | Restricted access |
| Degree of protection | IP 20; protection against medium sized foreign matter (incl. finger), protection against vertically dripping water. |
| Electromagnetic Compatibility | |
| Immunity | EMC Category C3 |
| Emissions | EMC Category C3 |

| Model (Part Number): | 93PRBATMODULE | 93PRBATMODULE-10YR |
|-----------------------------|----------------------|---------------------------|
| Weight | 31kg | |
| Battery Rating | 12V 9Ah | |
| Design Life | 5 Years at 25°C | 10 Years at 20°C |
| Number of battery blocks | 10 | 10 |
| Hot-pluggable | Yes | |