



# ET20F

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## 3-PH. 2POLE IP23

**BRUSH + AVR**

### CHARACTERISTICS

| POWER 230/400V<br>AT 3000 RPM - 50 Hz |                  |                 |                                 |              |      |      |                  |                 |                                |                 |                                  |                                        |        |
|---------------------------------------|------------------|-----------------|---------------------------------|--------------|------|------|------------------|-----------------|--------------------------------|-----------------|----------------------------------|----------------------------------------|--------|
| Type                                  | CL. H (ΔT=125°C) |                 |                                 |              |      |      | CL. F (ΔT=105°C) |                 | STAND BY (ΔT=163°C)            |                 | CL. H (ΔT=125°C)                 |                                        | T.H.D. |
|                                       | THREE-PHASE      |                 | MOTOR<br>STARTING<br>CAPABILITY | EFFICIENCY % |      |      | THREE-PHASE      |                 | AMBIENT<br>TEMPERATURE<br>27°C |                 | SINGLE-PHASE<br>DELTA CONNECTION |                                        |        |
|                                       | KVA              | KW<br>COS φ 0,8 |                                 | 2/4          | 3/4  | 4/4  | kVA              | kW<br>COS φ 0,8 | kVA                            | kW<br>COS φ 0,8 | kVA<br>COS φ 1                   | MOTOR<br>STARTING<br>CAPABILITY<br>KVA |        |
| ET20FS-130                            | 9                | 7,2             | 15                              | 78,6         | 82,6 | 81,9 | 8,2              | 6,6             | 9,7                            | 7,8             | 6                                | 12                                     | < 5    |
| ET20FS-160                            | 11,5             | 9,2             | 19                              | 78,9         | 82,8 | 82,4 | 10,5             | 8,4             | 12,5                           | 10              | 7,6                              | 15                                     | < 5    |
| ET20F -200                            | 13,5             | 10,8            | 21                              | 79,4         | 83,5 | 82,9 | 12,2             | 9,8             | 14,2                           | 11,4            | 9                                | 18                                     | < 5    |

| POWER 277/480V<br>AT 3600 RPM - 60 Hz |                  |                 |                                 |              |      |      |                  |      |                                |      |                                  |                |        |
|---------------------------------------|------------------|-----------------|---------------------------------|--------------|------|------|------------------|------|--------------------------------|------|----------------------------------|----------------|--------|
| Type                                  | CL. H (ΔT=125°C) |                 |                                 |              |      |      | CL. F (ΔT=105°C) |      | STAND BY (ΔT=163°C)            |      | CL. H (ΔT=125°C)                 |                | T.H.D. |
|                                       | THREE-PHASE      |                 | MOTOR<br>STARTING<br>CAPABILITY | EFFICIENCY % |      |      | THREE-PHASE      |      | AMBIENT<br>TEMPERATURE<br>27°C |      | SINGLE-PHASE<br>DELTA CONNECTION |                |        |
|                                       | KVA              | KW<br>COS φ 0,8 |                                 | kVA          | 2/4  | 3/4  | 4/4              | kVA  | kW<br>COS φ 0,8                | kVA  | kW<br>COS φ 0,8                  | kVA<br>COS φ 1 |        |
| ET20FS-130                            | 11               | 8,8             | 18                              | 79,8         | 83,9 | 83,6 | 10               | 8    | 11,6                           | 9,3  | 7,2                              | 14,5           | < 5    |
| ET20FS-160                            | 14               | 11,2            | 22,5                            | 79,8         | 84,5 | 83,9 | 12,5             | 10   | 15                             | 12   | 9,1                              | 18             | < 5    |
| ET20F -200                            | 16,5             | 13,2            | 25                              | 80,5         | 84,6 | 84,1 | 14,5             | 11,6 | 17                             | 13,6 | 10,8                             | 21,5           | < 5    |

| Type       | J<br>(Kgm <sup>2</sup> ) |        | Weight<br>(Kg) |       |      | Air Volume<br>(m <sup>3</sup> /min) |       | Noise dB(A) |    |       |    |
|------------|--------------------------|--------|----------------|-------|------|-------------------------------------|-------|-------------|----|-------|----|
|            |                          |        |                |       |      |                                     |       | 50 Hz       |    | 60 Hz |    |
|            | B3/B14                   | B3/B9  | B3/B14         | B3/B9 | MD35 | 50 Hz                               | 60 Hz | 7m          | 1m | 7m    | 1m |
| ET20FS-130 | 0,0241                   | 0,0231 | 45,2           | 44,2  | 48,2 | 4,7                                 | 5,7   | 81          | 63 | 83    | 65 |
| ET20FS-160 | 0,0288                   | 0,0277 | 52,2           | 51,2  | 55,2 | 4,7                                 | 5,7   | 81          | 63 | 83    | 65 |
| ET20F -200 | 0,0335                   | 0,0323 | 60             | 59    | 63   | 4,7                                 | 5,7   | 81          | 63 | 83    | 65 |

### TYPICAL ELECTRICAL DATA

| Type                                    |                       | ET20FS-130 | ET20FS-160 | ET20F-200 |
|-----------------------------------------|-----------------------|------------|------------|-----------|
| Rating "H" class                        | kVA 50 Hz             | 9          | 11,5       | 13,5      |
| Direct - axis synchronous reactance     | X <sub>d</sub> %      | 353        | 334        | 270       |
| Direct - axis transient reactance       | X' <sub>d</sub> %     | 39,2       | 37,4       | 31,9      |
| Direct - axis subtransient reactance    | X'' <sub>d</sub> %    | 22,4       | 21,2       | 18,6      |
| Quadrature - axis synchronous reactance | X <sub>q</sub> %      | 109,3      | 100,9      | 88        |
| Quadrature - axis transient reactance   | X' <sub>q</sub> %     | 109,3      | 100,9      | 88        |
| Quadrature-axis subtransient reactance  | X'' <sub>q</sub> %    | 44,3       | 42,6       | 39        |
| Negative - sequence reactance           | X <sub>2</sub> %      | 24         | 22,4       | 18        |
| Zero sequence reactance                 | X <sub>0</sub> %      | 8,8        | 8,4        | 6,9       |
| Transient time constant                 | T' <sub>d</sub> (ms)  | 54         | 51         | 43        |
| Subtransient time constant              | T'' <sub>d</sub> (ms) | 11         | 10         | 9         |
| Armature time constant                  | T <sub>α</sub> (ms)   | 6          | 7,5        | 9         |
| Open circuit time constant              | T' <sub>do</sub> (s)  | 0,65       | 0,58       | 0,5       |
| Short - circuit ratio                   | K <sub>cc</sub>       | 0,58       | 0,51       | 0,56      |
| Stator winding resistance               | Ω                     | 0,712      | 0,569      | 0,425     |

| ELECTRONIC REGULATOR | PARALLEL<br>DEVICE | THERMAL PROTECTION       |                          |                          | HEATERS                  | MECHANICAL PROTECTION |      |                          |
|----------------------|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------|------|--------------------------|
| ASR                  |                    | PTC                      | BIMET DEVICE.            | PT100                    |                          | IP21                  | IP23 | IP45                     |
| ●                    |                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                       | ●    | <input type="checkbox"/> |

● = Standard

☐ = Optional



