



## Product Information Packet

# EM4102T

20HP,1180RPM,3PH,60HZ,286T,1054M,TEFC,F1

| Part Detail |        |             |            |             |        |               |            |
|-------------|--------|-------------|------------|-------------|--------|---------------|------------|
| Revision:   | X      | Status:     | PRD/A      | Change #:   |        | Proprietary:  | No         |
| Type:       | AC     | Elec. Spec: | 10WGY730   | CD Diagram: | CD0180 | Mfg Plant:    |            |
| Mech. Spec: | 10C151 | Layout:     | 10LYC151   | Poles:      | 06     | Created Date: | 05-06-2010 |
| Base:       | RG     | Eff. Date:  | 02-21-2022 | Leads:      | 9#10   |               |            |

| Specs                           |                         |                                |                       |
|---------------------------------|-------------------------|--------------------------------|-----------------------|
| Catalog Number:                 | EM4102T                 | Heater Indicator:              | No Heater             |
| Enclosure:                      | TEFC                    | Insulation Class:              | F                     |
| Frame:                          | 286T                    | Inverter Code:                 | Inverter Ready        |
| Frame Material:                 | Iron                    | KVA Code:                      | H                     |
| Motor Letter Type:              | Three Phase             | Lifting Lugs:                  | Standard Lifting Lugs |
| Output @ Frequency:             | 20.000 HP @ 60 HZ       | Locked Bearing Indicator:      | Locked Bearing        |
| Synchronous Speed @ Frequency:  | 1200 RPM @ 60 HZ        | Motor Lead Quantity/Wire Size: | 9 @ 10 AWG            |
| Voltage @ Frequency:            | 230.0 V @ 60 HZ         | Motor Lead Exit:               | Ko Box                |
|                                 | 460.0 V @ 60 HZ         | Motor Lead Termination:        | Flying Leads          |
| XP Class and Group:             | None                    | Motor Type:                    | 1054M                 |
| XP Division:                    | Not Applicable          | Mounting Arrangement:          | F1                    |
| Agency Approvals:               | UR                      | Power Factor:                  | 77                    |
|                                 | CSA EEV                 | Product Family:                | General Purpose       |
|                                 | CSA                     | Pulley End Bearing Type:       | Ball                  |
| Auxillary Box:                  | No Auxillary Box        | Pulley Face Code:              | Standard              |
| Auxillary Box Lead Termination: | None                    | Pulley Shaft Indicator:        | Standard              |
| Base Indicator:                 | Rigid                   | Rodent Screen:                 | None                  |
| Bearing Grease Type:            | Polyrex EM (-20F +300F) | Shaft Extension Location:      | Pulley End            |

|                                       |                           |                                    |                     |
|---------------------------------------|---------------------------|------------------------------------|---------------------|
| <b>Blower:</b>                        | None                      | <b>Shaft Ground Indicator:</b>     | No Shaft Grounding  |
| <b>Current @ Voltage:</b>             | 27.000 A @ 460.0 V        | <b>Shaft Rotation:</b>             | Reversible          |
|                                       | 54.000 A @ 230.0 V        | <b>Shaft Slinger Indicator:</b>    | Shaft Slinger       |
|                                       | 56.000 A @ 208.0 V        | <b>Speed Code:</b>                 | Single Speed        |
| <b>Design Code:</b>                   | A                         | <b>Motor Standards:</b>            | NEMA                |
| <b>Drip Cover:</b>                    | No Drip Cover             | <b>Starting Method:</b>            | Direct on line      |
| <b>Duty Rating:</b>                   | CONT                      | <b>Thermal Device - Bearing:</b>   | None                |
| <b>Electrically Isolated Bearing:</b> | Not Electrically Isolated | <b>Thermal Device - Winding:</b>   | None                |
| <b>Feedback Device:</b>               | NO FEEDBACK               | <b>Vibration Sensor Indicator:</b> | No Vibration Sensor |
| <b>Front Face Code:</b>               | Standard                  | <b>Winding Thermal 1:</b>          | None                |
| <b>Front Shaft Indicator:</b>         | None                      | <b>Winding Thermal 2:</b>          | None                |

## Nameplate NP3443LUA

|           |                           |      |        |                         |       |                            |         |            |        |      |
|-----------|---------------------------|------|--------|-------------------------|-------|----------------------------|---------|------------|--------|------|
| CAT.NO.   | EM4102T                   |      |        | CUST. P/N               |       |                            |         | ENCL       | TEFC   |      |
| SPEC.     | 10C151Y730G1              |      | CC     | 010A                    | FRAME | 286T                       |         | SER.NO.    |        |      |
| HP        | 20                        |      | CLASS  | F                       | HZ    | 60                         |         |            |        |      |
| R.P.M.    | 1180                      |      | PH.    | 3                       | DES.  | A                          |         |            |        |      |
| VOLTS     | 230/460                   |      |        | CODE                    | H     |                            | ODE BRG | 6309       | DE BRG | 6311 |
| AMPS      | 54/27                     |      |        | USABLE AT 208V          | 56    |                            |         |            |        |      |
| RATING    | 40C AMB-CONT              |      |        | NEMA NOM. EFF.          | 91.7  |                            | GREASE  | POLYREX EM |        |      |
| P.F.      | 77                        |      | SER.F. | 1.15                    |       | CT6-60H(10:1)VT3-60H(20:1) |         |            |        |      |
| USABLE AT | 50Hz 20HP 190/380V 62/31A |      |        |                         | SF1.0 |                            |         |            |        |      |
| VOLTS     |                           | AMPS |        | MAX. SPACE HEATER TEMP. |       |                            |         |            |        |      |

**AC Induction Motor Performance Data**

Record # 53029

Typical performance - not guaranteed values

| Winding: 10WGY730-R006 |    |         |              | Type: 1054M                              |   | Enclosure: TEFC           |                  |             |
|------------------------|----|---------|--------------|------------------------------------------|---|---------------------------|------------------|-------------|
| Nameplate Data         |    |         |              | 460 V, 60 Hz:<br>High Voltage Connection |   |                           |                  |             |
| Rated Output (HP)      |    | 20      |              | Full Load Torque                         |   | 90.1 LB-FT                |                  |             |
| Volts                  |    | 230/460 |              | Start Configuration                      |   | direct on line            |                  |             |
| Full Load Amps         |    | 54/27   |              | Breakdown Torque                         |   | 276 LB-FT                 |                  |             |
| R.P.M.                 |    | 1180    |              | Pull-up Torque                           |   | 115 LB-FT                 |                  |             |
| Hz                     | 60 | Phase   | 3            | Locked-rotor Torque                      |   | 166 LB-FT                 |                  |             |
| NEMA Design Code       |    | A       |              | KVA Code                                 | H |                           | Starting Current | 165 A       |
| Service Factor (S.F.)  |    | 1.15    |              | No-load Current                          |   | 13.1 A                    |                  |             |
| NEMA Nom. Eff.         |    | 91.7    | Power Factor | 77                                       |   | Line-line Res. @ 25°C     |                  | 0.425 Ω     |
| Rating - Duty          |    | 40C     |              | AMB-CONT                                 |   | Temp. Rise @ Rated Load   |                  | 65°C        |
| S.F. Amps              |    |         |              |                                          |   | Temp. Rise @ S.F. Load    |                  | 79°C        |
|                        |    |         |              |                                          |   | Locked-rotor Power Factor |                  | 32          |
|                        |    |         |              |                                          |   | Rotor inertia             |                  | 6.61 LB-FT2 |

**Load Characteristics 460 V, 60 Hz, 20 HP**

| % of Rated Load | 25     | 50     | 75     | 100    | 125    | 150    | S.F. |
|-----------------|--------|--------|--------|--------|--------|--------|------|
| Power Factor    | 39     | 60     | 71     | 77     | 79     | 80     | 78   |
| Efficiency      | 86.6   | 91.1   | 91.9   | 91.7   | 90.9   | 89.8   | 91.2 |
| Speed           | 1194.6 | 1189.5 | 1184.1 | 1178.3 | 1171.4 | 1163.8 | 1174 |
| Line amperes    | 14.3   | 17.5   | 21.9   | 26.9   | 32.7   | 39.3   | 30.4 |

Performance Graph at 460V, 60Hz, 20.0HP Typical performance - Not guaranteed values





