



## MATERIAL FACT SHEET

### 297584 FR-A840-03610-E2-60

#### General Data

|                     |                                        |
|---------------------|----------------------------------------|
| Product Hierarchy   | IAK24103                               |
|                     | INVERTER                               |
|                     | FR-A840 from 2160                      |
| Ext. Material Group | 10 STANDARD ITEM                       |
| ABC Indicator       | C (Non-Stock Material / Make-to-Order) |

e-shop: [https://mitsubishi-electric-eshop.mee.com/mee/FA\\_1A/EUR/en/p/000000000000297584](https://mitsubishi-electric-eshop.mee.com/mee/FA_1A/EUR/en/p/000000000000297584)

#### Product Components

|                                            |               |
|--------------------------------------------|---------------|
| <a href="#">307189 / FR-AF840-03610-60</a> | 1 pc required |
| <a href="#">307203 / FR-CA80-02-E2-60</a>  | 1 pc required |

#### FA-Inverter: Inverter

|                               |                                |
|-------------------------------|--------------------------------|
| Series                        | FR-A SERIES                    |
| Type                          | FR-A800-E INVERTER             |
| Minimum Rated Voltage (V)     | 380                            |
| Min. Permissible Voltage (V)  | 323                            |
| Maximum Rated Voltage (V)     | 500                            |
| Max. Permissible Voltage (V)  | 550                            |
| Current Type                  | AC                             |
| Phases                        | 3                              |
| Rated Output Current SLD (A)  | 361                            |
| Rated Output Current LD (A)   | 325                            |
| Rated Output Current ND (A)   | 260                            |
| Rated Output Current HD (A)   | 216                            |
| Rated Motor Capacity SLD (kW) | 185                            |
| Rated Motor Capacity LD (kW)  | 160                            |
| Rated Motor Capacity ND (kW)  | 132                            |
| Rated Motor Capacity HD (kW)  | 110                            |
| Frequency Range (Hz)          | 0,2–590                        |
| Control Method                | MAGNETIC FLUX VECTOR CONTROL   |
| Control Method (2)            | PM SENSORLESS VECTOR CONTROL   |
| Control Method (3)            | REAL SENSORLESS VECTOR CONTROL |
| Control Method (4)            | SOFT-PWM/HIGH FREQUENCY PWM    |
| Control Method (5)            | V/F CONTROL                    |
| Control Method (6)            | VECTOR CONTROL (WITH FR-A8AP)  |
| Motor Type                    | INDUCTION MOTOR, PM MOTOR      |
| Integrated EMC Filter         | YES                            |
| Safe Torque Off (STO)         | YES                            |
| Regenerative (4Q)             | NO                             |
| Integrated DC Choke           | NO                             |
| Display                       | FR-DU08                        |
| Display Type                  | 5 DIGITS LED (12 SEGMENT)      |
| PLC Function                  | YES                            |
| Program Memory                | 6K                             |
| Program Memory Unit           | STEPS                          |
| Integrated Digital Inputs     | 12                             |
| Digital Outputs (Transistor)  | 5                              |
| Digital Outputs (Relay)       | 2                              |
| Integrated Analogue Inputs    | 3                              |
| Integrated Analogue Outputs   | 2                              |
| IO Type of Terminal Block     | SPRING CLAMP                   |
| Expandable                    | YES                            |
| RS-485                        | OPTIONAL                       |
| USB                           | 1+1 MINI                       |
| Ethernet Port                 | 1                              |
| Built-In Network              | CC-LINK IE FIELD NETWORK       |

|                               |                                |
|-------------------------------|--------------------------------|
| Built-In Network (2)          | CC-LINK IE FIELD NETWORK BASIC |
| Built-In Network (3)          | MODBUS/TCP                     |
| Leakage Current (mA)          | 35(DELTA) / 2(STAR)            |
| Power Loss SLD (W)            | 4050                           |
| Power Loss LD (W)             | 3600                           |
| Power Loss ND (W)             | 2800                           |
| Power Loss HD (W)             | 2250                           |
| Standby Power Consumption (W) | 78                             |
| Protection Class              | IP00                           |

#### Product Dimensions & Weight

|             |     |
|-------------|-----|
| Width (mm)  | 465 |
| Height (mm) | 740 |
| Depth (mm)  | 360 |
| Weight (kg) | 78  |

#### Logistic Dimensions & Gross Weight

|                   |         |
|-------------------|---------|
| Length (cm)       | 88,0    |
| Width (cm)        | 62,0    |
| Height (cm)       | 50,5    |
| Gross Weight (kg) | 87,000  |
| Volume (cdm)      | 275,528 |

#### Stock Data

|                              |     |
|------------------------------|-----|
| Planned Delivery Time (Days) | 156 |
|------------------------------|-----|

#### Life Cycle

|             |                             |
|-------------|-----------------------------|
| Sales Start | 30.05.2016                  |
| Predecessor | 266759 / FR-A840-03610-2-60 |

#### Additional Product Information

|                            |                  |
|----------------------------|------------------|
| Binding Tariff Information | DEBTI-21865/22-1 |
| BTI validity date          | 01.01.2026       |
| Battery included           | NO               |

#### Export Data

|                                          |            |
|------------------------------------------|------------|
| Legal Control (Dual Use List)            | Not Listed |
| Country of Origin                        | China (CN) |
| Preference Status (Supplier Declaration) | Non EU     |

#### Environmental

|                            |           |
|----------------------------|-----------|
| REACH Limit Exceeded       | NO        |
| Dangerous Goods Class      | NO        |
| Dangerous Goods Identifier | NO        |
| RoHS Compliance            | COMPLIANT |
| WEEE                       | B2B       |

#### Conformity

|                    |                     |
|--------------------|---------------------|
| CE                 | COMPLIANT           |
| UL/cUL             | COMPLIANT           |
| EAC                | COMPLIANT           |
| Shipping Approvals | ABS,BV,DNV GL,LR,NK |
| UKCA               | COMPLIANT           |

#### Documentation & Media Data

|                                |                                                                                                                                                                                                                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manual URL Indicator           | <a href="https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=bltdae25c2bd5f2ff94&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=bltdae25c2bd5f2ff94&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en</a> |
| Certificates URL Indicator     | <a href="https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt8050dd1408c11cc2&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt8050dd1408c11cc2&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en</a> |
| CAD URL Indicator              | <a href="https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt26ecc97a31a841c1&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt26ecc97a31a841c1&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en</a> |
| Network configuration file URL | <a href="https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blte8cf990c7c524b4e&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blte8cf990c7c524b4e&amp;q=FR-A840-03610-E2-60&amp;doc-lang=en</a> |

#### Product Packaging

|                 |      |
|-----------------|------|
| Cardboard (g)   | 7666 |
| Other paper (g) | 0    |
| Aluminum (g)    | 0    |
| Steel (g)       | 0    |

|                   |     |
|-------------------|-----|
| Styrofoam (g)     | 0   |
| Other plastic (g) | 215 |
| Wood (g)          | 0   |
| Glass (g)         | 0   |
| Others (g)        | 0   |

#### Spare parts

| Material               | Description                              | Quantity | Unit |
|------------------------|------------------------------------------|----------|------|
| <a href="#">282891</a> | FR-A840-03250-03610-2-60 PCB MA          | 1        | PC   |
| <a href="#">282898</a> | FR-A840-03250-03610-2-60 PCB GA          | 1        | PC   |
| <a href="#">307203</a> | FR-CA80-02-E2-60                         | 1        | PC   |
| <a href="#">282926</a> | FR-A840-03250-2-60 PCB AUX               | 1        | PC   |
| <a href="#">282928</a> | FR-A840-03250-12120/CC2 DM               | 6        | PC   |
| <a href="#">282932</a> | FR-A840/842/846-ALL TERMINAL BLOCK A80TA | 1        | PC   |
| <a href="#">282940</a> | FR-A840/842/CC2-ALL CASE CPU             | 1        | PC   |
| <a href="#">282942</a> | FR-A840-03250-12120 BALANCE RESISTOR     | 8        | PC   |
| <a href="#">283444</a> | FR-A840-03250-12120-2-60 IGBT CM450DY207 | 6        | PC   |
| <a href="#">283449</a> | FR-A840-02160-03610-2-60 FAN             | 3        | PC   |
| <a href="#">283464</a> | FR-A840-03250-03610-2-60 INRUSH RES.     | 1        | PC   |
| <a href="#">283475</a> | FR-A840-03610-2-60 DCCT                  | 3        | PC   |
| <a href="#">283484</a> | FR-A840-00770-2-60 OR BIGGER CBL MA-CPU  | 1        | PC   |
| 283593                 | FR-A840-03610-2-60 CAPACITOR             | 4        | PC   |
| <a href="#">283707</a> | FR-A840-00930-12120-2-60 COVER           | 1        | PC   |
| <a href="#">283711</a> | FR-A840-02160-03610-2-60 CASE FAN        | 3        | PC   |
| <a href="#">283712</a> | FR-A840-02160-03610-2-60 COVER FAN       | 3        | PC   |

#### Compatible products

| Material               | Description / Price List Text / Classification                                                                                                  |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">70727</a>  | FR-A5 CBL 1<br>Cable for connecting Inverter and Programming panel; 1m<br>Class 100100405: FA-Inverter: Cable                                   |
| <a href="#">70728</a>  | FR-A5 CBL 2,5<br>Cable for connecting Inverter and Programming panel; 2,5m<br>Class 100100405: FA-Inverter: Cable                               |
| <a href="#">70729</a>  | FR-A5 CBL 5<br>Cable for connecting Inverter and Programming panel; 5m<br>Class 100100405: FA-Inverter: Cable                                   |
| <a href="#">104664</a> | FN 3359-400-99 f. A-110-132K/F-132-185K<br>Radio Noise Filter for FR-A&F-03250-04320; C2 100m; C4 100m<br>Class 100100404: FA-Inverter: Filter  |
| <a href="#">113659</a> | S-N220 AC100V<br>Magnetic contactor. 132kW; 2NO + 2NC; Us = AC 100V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                         |
| <a href="#">113660</a> | S-N220 AC200V<br>Magnetic contactor. 132kW; 2NO + 2NC; Us = AC 200V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                         |
| <a href="#">113661</a> | S-N220 AC400V<br>Magnetic contactor. 132kW; 2NO + 2NC; Us = AC 400V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                         |
| <a href="#">167612</a> | FR-RJ45-HUB10<br>Distribution Module for RJ45; 10 way<br>Class 100100403: FA-Inverter: External Option                                          |
| <a href="#">167613</a> | FR-RJ45-HUB4<br>Distribution Module for RJ45; 4 way<br>Class 100100403: FA-Inverter: External Option                                            |
| <a href="#">167614</a> | FR-RJ45-TR<br>Terminal Resistor Plug RJ45<br>Class 100100403: FA-Inverter: External Option                                                      |
| <a href="#">209746</a> | FFR-SI-260A-SS1<br>Sinusfilter for 200/400V Inverters; max. 260A; FT=2-16kHz; (W*H*D) 450*510*max.360mm<br>Class 100100404: FA-Inverter: Filter |
| <a href="#">209761</a> | FFR-DT-330A-SS1<br>du/dt Filter for 400V Inverters; max. 330A; FT=2-16kHz; (W*H*D) 240*220*240mm<br>Class 100100404: FA-Inverter: Filter        |
| <a href="#">221540</a> | USB-CAB-5M<br>USB 2.0 connection cabel, plug USB A to plug USB B (mini), 5m<br>Class 100100303: FA-HMI: Cable                                   |
| <a href="#">262948</a> | A8NDPV1<br>Profibus DPV1 with Dsub Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                     |

| Material               | Description / Price List Text / Classification                                                                                                                     |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">262949</a> | A8NPRT_2P<br>Profinet 2port Interface for FR-A/F800 with Drive Profile<br>Class 100100402: FA-Inverter: Internal Option                                            |
| <a href="#">262950</a> | A8NEIP_2P<br>EtherNet/IP 2port Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                            |
| <a href="#">269426</a> | FR-A8AX<br>16-Bit-Digital-Input; BCD/Binary-Code; 24V DC; 5mA for FR-F/A800<br>Class 100100402: FA-Inverter: Internal Option                                       |
| <a href="#">269427</a> | FR-A8AY<br>Digital-/Analog Output; Output load: 24V DC; 0,1A for FR-F/A800<br>Class 100100402: FA-Inverter: Internal Option                                        |
| <a href="#">269428</a> | FR-A8AR<br>Relay output; 3 additional output relays for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                 |
| <a href="#">269429</a> | FR-A8AP<br>Incremental Encoder Feedback for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                               |
| <a href="#">269430</a> | FR-A8AL<br>Incremental encoder feedback terminal block for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                |
| <a href="#">269431</a> | FR-A8NC<br>CC-Link Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                                        |
| <a href="#">269432</a> | FR-A8ND<br>DeviceNet Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                                      |
| <a href="#">273102</a> | FR-A8NCE<br>CC-Link IE Field Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                              |
| <a href="#">273307</a> | FR-HEL-H132K<br>DC Link choke for 400V Inverter with 132kW Motor<br>Class 100100406: FA-Inverter: Choke                                                            |
| <a href="#">274514</a> | FR-A8NP<br>ProfibusDP Interface for FR-A/F800 with FR-A/F700 PPO types<br>Class 100100402: FA-Inverter: Internal Option                                            |
| <a href="#">274525</a> | FR-LU08<br>Clear text LCD Parameter unit for all units of 800 Series<br>Class 100100403: FA-Inverter: External Option                                              |
| <a href="#">274526</a> | FR-A8TAT<br>Adapter for control terminal of A/F700 to A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                      |
| <a href="#">275503</a> | FR Configurator-M+FR-Configurator2<br>FR-Configurator for 700 series; multi I + FR-Configurator2 for 800 series<br>Class 100101203: FA-Software: Software Inverter |
| 277947                 | FR-A8CN08<br>Heatsink Protrusion Attachment for FR-F/A840-03250/03610;für FRA820-03800/04750<br>Class 100100403: FA-Inverter: External Option                      |
| <a href="#">283939</a> | FR-A8APR<br>Resolver interface/orientation control/Resolver feedback control/vector control<br>Class 100100402: FA-Inverter: Internal Option                       |
| <a href="#">283940</a> | FR-A8AZ<br>Analog Input/ output, Thermistor interface<br>Class 100100402: FA-Inverter: Internal Option                                                             |
| <a href="#">284809</a> | A8NECT_2P<br>Ethercat 2port Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                                               |
| <a href="#">285244</a> | FR-A8TP<br>Incremental Encoder Feedback Terminal Block for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                |
| <a href="#">289335</a> | FR-A8NS<br>SSCNet Interface for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                                           |
| <a href="#">294939</a> | FR-D-Sub9-A8NP-01<br>D-Sub9 Connection Adapter for FR-A8NP + Cover<br>Class 100100402: FA-Inverter: Internal Option                                                |
| <a href="#">296229</a> | FR-BAL-B3-132K<br>Input reactor 3ph, 400V, In= 260A, Pn=132kW, L1=0,088mH<br>Class 100100406: FA-Inverter: Choke                                                   |

| Material               | Description / Price List Text / Classification                                                                                                     |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">296613</a> | FR-LU08-01<br>Clear text LCD Parameter unit for all units of 800 Series (IP55)<br>Class 100100403: FA-Inverter: External Option                    |
| <a href="#">297422</a> | FR-A8APS<br>Absolute Encoder Feedback for FR-A800 (EnDat)<br>Class 100100402: FA-Inverter: Internal Option                                         |
| <a href="#">298153</a> | FR-A8NCA<br>CANopen Interface for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                         |
| <a href="#">307170</a> | FR-A8ERS-60<br>Optioncard to change Ethernet board to serial communication<br>Class 100100402: FA-Inverter: Internal Option                        |
| <a href="#">307170</a> | FR-A8ERS-60<br>Optioncard to change Ethernet board to serial communication<br>Class 100100402: FA-Inverter: Internal Option                        |
| <a href="#">307189</a> | FR-AF840-03610-60<br>Inverter Body AC; Pn: 110-185kW; 3x380-500V;In max: 361A;(132kW; 260A); IP00<br>Class 100100401: FA-Inverter: Inverter        |
| <a href="#">307203</a> | FR-CA80-02-E2-60<br>Control Card for FR-A840-02160 up to 12120 Ethernet Version<br>Class 100100402: FA-Inverter: Internal Option                   |
| <a href="#">403614</a> | FR-A8APA<br>SinCos Encoder Feedback for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                                                   |
| <a href="#">591584</a> | RHF-5P 132-400-50-20-C<br>High efficient double-stage passive harmonic filter for THDi <5%;400V;50Hz;132kW<br>Class 100100404: FA-Inverter: Filter |
| <a href="#">591605</a> | RHF-8P 132-400-50-20-C<br>High efficient double-stage passive harmonic filter for THDi <8%;400V;50Hz;132kW<br>Class 100100404: FA-Inverter: Filter |