



## MATERIAL FACT SHEET

### 412422 FR-A840-03250-E2-60LC

#### 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/000000000000412422](https://mitsubishi-electric-eshop.mee.com/mee/FA_1A/EUR/en/p/000000000000412422)

#### FA-Inverter: Inverter

|                              |                                |
|------------------------------|--------------------------------|
| Series                       | FR-A800 PLUS SERIES            |
| Type                         | FR-A800-LC (LIQUID COOLED)     |
| 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) | 325                            |
| Rated Output Current LD (A)  | 260                            |
| Rated Output Current ND (A)  | 216                            |
| Rated Motor Capacity ND (kW) | 110                            |
| Rated Motor Capacity HD (kW) | 90                             |
| 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      |
| Brake Chopper ED (%)         | 100                            |
| 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                            |
| 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)           | 3600                           |
| Power Loss LD (W)            | 2800                           |
| Power Loss ND (W)            | 2300                           |
| Power Loss HD (W)            | 1850                           |

|                               |      |
|-------------------------------|------|
| Standby Power Consumption (W) | 75   |
| Protection Class              | IP00 |

### Product Dimensions & Weight

|             |     |
|-------------|-----|
| Width (mm)  | 465 |
| Height (mm) | 795 |
| Depth (mm)  | 360 |
| Weight (kg) | 83  |

### Logistic Dimensions & Gross Weight

|                   |        |
|-------------------|--------|
| Length (cm)       | 0,0    |
| Width (cm)        | 0,0    |
| Height (cm)       | 0,0    |
| Gross Weight (kg) | 91,300 |
| Volume (cdm)      | 0,000  |

### Stock Data

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

### Life Cycle

|             |                |
|-------------|----------------|
| Sales Start | 07.01.2019     |
| Predecessor | No Predecessor |

### 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                        | Japan (JP) |
| Preference Status (Supplier Declaration) | Non EU     |

### Environmental

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

### Conformity

|        |           |
|--------|-----------|
| CE     | COMPLIANT |
| UL/cUL | COMPLIANT |
| EAC    | COMPLIANT |
| 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-A840-03250-E2-60LC&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=bltdae25c2bd5f2ff94&amp;q=FR-A840-03250-E2-60LC&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-A840-03250-E2-60LC&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt8050dd1408c11cc2&amp;q=FR-A840-03250-E2-60LC&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-A840-03250-E2-60LC&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt26ecc97a31a841c1&amp;q=FR-A840-03250-E2-60LC&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-A840-03250-E2-60LC&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blte8cf990c7c524b4e&amp;q=FR-A840-03250-E2-60LC&amp;doc-lang=en</a> |

### Product Packaging

|                   |      |
|-------------------|------|
| Cardboard (g)     | 8500 |
| Other paper (g)   | 0    |
| Aluminum (g)      | 0    |
| Steel (g)         | 15   |
| Styrofoam (g)     | 0    |
| Other plastic (g) | 80   |
| Wood (g)          | 0    |
| Glass (g)         | 0    |
| Others (g)        | 0    |

**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="#">113656</a> | S-N180 AC100V<br>Magnetic contactor. 90kW; 2NO + 2NC; Us = AC 100V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                           |
| <a href="#">113657</a> | S-N180 AC200V<br>Magnetic contactor. 90kW; 2NO + 2NC; Us = AC 200V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                           |
| <a href="#">113658</a> | S-N180 AC400V<br>Magnetic contactor. 90kW; 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="#">255081</a> | NF250-SV 3P 225A<br>Circuit breaker 3pole. In = 225A; Icu = Ics = 36kA at AC 440V<br>Class 100100901: FA-MCCB: Moulded-Case Circuit Breaker      |
| <a href="#">262948</a> | A8NDPV1<br>Profibus DPV1 with Dsub Interface for FR-A/F800<br>Class 100100402: FA-Inverter: Internal Option                                      |
| <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                                                      |

| Material               | Description / Price List Text / Classification                                                                                                                     |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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="#">273306</a> | FR-HEL-H110K<br>DC Link choke for 400V Inverter with 110kW 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 |
| <a href="#">277947</a> | 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="#">296228</a> | FR-BAL-B3-110K<br>Input reactor 3ph, 400V, In= 216A, Pn=110kW, L1=0,111mH<br>Class 100100406: FA-Inverter: Choke                                                   |
| <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="#">307188</a> | FR-AF840-03250-60<br>Inverter Body AC; Pn: 90-160kW; 3x380-500V;In max: 325A;(110kW; 216A); 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                                                                   |

| Material               | Description / Price List Text / Classification                                                                                                     |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">591583</a> | RHF-5P 110-400-50-20-C<br>High efficient double-stage passive harmonic filter for THDi <5%;400V;50Hz;110kW<br>Class 100100404: FA-Inverter: Filter |
| <a href="#">591604</a> | RHF-8P 110-400-50-20-C<br>High efficient double-stage passive harmonic filter for THDi <8%;400V;50Hz;110kW<br>Class 100100404: FA-Inverter: Filter |