



## MATERIAL FACT SHEET

### 297625 FR-A820-01870-E1-60

#### General Data

|                     |                                     |
|---------------------|-------------------------------------|
| Product Hierarchy   | IAK24104                            |
|                     | INVERTER                            |
|                     | FR-A820 from 00046 to 04750         |
| Ext. Material Group | 10 STANDARD ITEM                    |
| ABC Indicator       | B (Limited Availability from Stock) |

e-shop: [https://mitsubishi-electric-eshop.mee.com/mee/FA\\_IA/EUR/en/p/000000000000297625](https://mitsubishi-electric-eshop.mee.com/mee/FA_IA/EUR/en/p/000000000000297625)

#### FA-Inverter: Inverter

|                               |                                |
|-------------------------------|--------------------------------|
| Series                        | FR-A SERIES                    |
| Type                          | FR-A800-E INVERTER             |
| Minimum Rated Voltage (V)     | 200                            |
| Min. Permissible Voltage (V)  | 170                            |
| Maximum Rated Voltage (V)     | 240                            |
| Max. Permissible Voltage (V)  | 264                            |
| Current Type                  | AC                             |
| Phases                        | 3                              |
| Rated Output Current SLD (A)  | 187                            |
| Rated Output Current LD (A)   | 170                            |
| Rated Output Current ND (A)   | 145                            |
| Rated Output Current HD (A)   | 115                            |
| Rated Motor Capacity SLD (kW) | 45                             |
| Rated Motor Capacity LD (kW)  | 45                             |
| Rated Motor Capacity ND (kW)  | 37                             |
| Rated Motor Capacity HD (kW)  | 30                             |
| 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 (%)          | -                              |
| Integrated EMC Filter         | YES (OFF ON INITIAL SETTINGS)  |
| 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)          | 22                             |
| Power Loss SLD (W)            | 1650                           |

|                               |      |
|-------------------------------|------|
| Power Loss LD (W)             | 1480 |
| Power Loss ND (W)             | 1270 |
| Power Loss HD (W)             | 1050 |
| Standby Power Consumption (W) | -    |
| Protection Class              | IP00 |

### Product Dimensions & Weight

|             |     |
|-------------|-----|
| Width (mm)  | 435 |
| Height (mm) | 550 |
| Depth (mm)  | 250 |
| Weight (kg) | 42  |

### Logistic Dimensions & Gross Weight

|                   |         |
|-------------------|---------|
| Length (cm)       | 58,0    |
| Width (cm)        | 62,0    |
| Height (cm)       | 40,0    |
| Gross Weight (kg) | 45,500  |
| Volume (cdm)      | 143,840 |

### Stock Data

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

### Life Cycle

|             |                             |
|-------------|-----------------------------|
| Sales Start | 30.05.2016                  |
| Predecessor | 284761 / FR-A820-01870-1-60 |

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

### Environmental

|                                 |                            |
|---------------------------------|----------------------------|
| REACH Limit Exceeded            | YES                        |
| REACH Substance CAS Number      | <a href="#">10141-05-6</a> |
| REACH Substance CAS Number (2)  | <a href="#">12626-81-2</a> |
| REACH Substance CAS Number (3)  | <a href="#">127-19-5</a>   |
| REACH Substance CAS Number (4)  | <a href="#">1317-36-8</a>  |
| REACH Substance CAS Number (5)  | <a href="#">13560-89-9</a> |
| REACH Substance CAS Number (6)  | <a href="#">15571-58-1</a> |
| REACH Substance CAS Number (7)  | <a href="#">25155-23-1</a> |
| REACH Substance CAS Number (8)  | <a href="#">7439-92-1</a>  |
| REACH Substance CAS Number (9)  | <a href="#">80-05-7</a>    |
| REACH Substance CAS Number (10) | <a href="#">84-61-7</a>    |
| REACH Substance CAS Number (11) | <a href="#">872-50-4</a>   |
| Dangerous Goods Class           | NO                         |
| Dangerous Goods Identifier      | NO                         |
| 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-A820-01870-E1-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=bltdae25c2bd5f2ff94&amp;q=FR-A820-01870-E1-60&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-A820-01870-E1-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt8050dd1408c11cc2&amp;q=FR-A820-01870-E1-60&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-A820-01870-E1-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blt26ecc97a31a841c1&amp;q=FR-A820-01870-E1-60&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-A820-01870-E1-60&amp;doc-lang=en">https://emea.mitsubishielectric.com/fa/advanced-search?ct=document&amp;doc-cats=blte8cf990c7c524b4e&amp;q=FR-A820-01870-E1-60&amp;doc-lang=en</a> |

## Product Packaging

|                   |      |
|-------------------|------|
| Cardboard (g)     | 4400 |
| Other paper (g)   | 0    |
| Aluminum (g)      | 0    |
| Steel (g)         | 0    |
| Styrofoam (g)     | 0    |
| Other plastic (g) | 50   |
| Wood (g)          | 0    |
| Glass (g)         | 0    |
| Others (g)        | 0    |

## Spare parts

| Material               | Description                              | Quantity | Unit |
|------------------------|------------------------------------------|----------|------|
| <a href="#">282932</a> | FR-A840/842/846-ALL TERMINAL BLOCK A80TA | 1        | PC   |
| 282941                 | FR-A840-77A-116A BALANCE RESISTOR        | 6        | PC   |
| <a href="#">283450</a> | FR-A840-00470-01800-2-60 FAN             | 3        | PC   |
| <a href="#">283484</a> | FR-A840-00770-2-60 OR BIGGER CBL MA-CPU  | 1        | PC   |
| <a href="#">283709</a> | FR-A840-00930-01800-2-60 COVER FAN       | 3        | PC   |
| <a href="#">283710</a> | FR-A840-00930-01800-2-60 COVER TERMINAL  | 1        | PC   |
| 487554                 | FR-A820-01870-02330 PCB MA               | 1        | PC   |
| 487564                 | FR-A820-01540-03160-30K-55K PCB AUX      | 1        | PC   |

## Compatible products

| Material               | Description / Price List Text / Classification                                                                                              |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">113647</a> | S-N125 AC100V<br>Magnetic contactor. 60kW; 2NO + 2NC; Us = AC 100V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113648</a> | S-N125 AC200V<br>Magnetic contactor. 60kW; 2NO + 2NC; Us = AC 200V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113649</a> | S-N125 AC400V<br>Magnetic contactor. 60kW; 2NO + 2NC; Us = AC 400V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113650</a> | S-N125 AC24V<br>Magnetic contactor. 60kW; 2NO + 2NC; Us = AC 24V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                        |
| <a href="#">113651</a> | S-N150 AC100V<br>Magnetic contactor. 75kW; 2NO + 2NC; Us = AC 100V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113652</a> | S-N150 AC200V<br>Magnetic contactor. 75kW; 2NO + 2NC; Us = AC 200V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113653</a> | S-N150 AC400V<br>Magnetic contactor. 75kW; 2NO + 2NC; Us = AC 400V, 50Hz<br>Class 100101001: FA-MC: Magnetic Contactor                      |
| <a href="#">113654</a> | S-N150 AC24V<br>Magnetic contactor. 75kW; 2NO + 2NC; Us = AC 24V, 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="#">209745</a> | FFR-SI-180A-SS1<br>Sinusfilter;200/400V Inverters;max.180A;FT=2-16kHz;(W*H*D) 450*200/400*max.360mm<br>Class 100100404: FA-Inverter: Filter |
| <a href="#">209760</a> | FFR-DT-182A-SS1<br>du/dt Filter for 400V Inverters; max. 182A; FT=2-16kHz; (W*H*D) 210*185*160mm<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="#">238369</a> | FFR-HEL-37K-E<br>DC Link choke for 200V Inverter; 37kW; 0,2mH; 158A<br>Class 100100406: FA-Inverter: Choke                                  |

| Material               | Description / Price List Text / Classification                                                                                                                     |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">255080</a> | NF250-SV 3P 200A<br>Circuit breaker 3pole. In = 200A; Icu = Ics = 36kA at AC 440V<br>Class 100100901: FA-MCCB: Moulded-Case Circuit Breaker                        |
| <a href="#">255082</a> | NF250-SV 3P 250A<br>Circuit breaker 3pole. In = 250A; 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                                                                        |
| <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="#">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="#">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="#">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="#">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="#">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                                                                         |

| Material               | Description / Price List Text / Classification                                                                              |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <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="#">403614</a> | FR-A8APA<br>SinCos Encoder Feedback for FR-A800<br>Class 100100402: FA-Inverter: Internal Option                            |