Fuji Electric
Innovating Energy Technology

To All Customers

Rep No.B21039a

January 2022

Fuji Electric FA Components & Systems Co., Ltd.

# Notification regarding Addition of Design Features and Change in Panel Sheet Material and Paint for F-MPC60G Series Multifunctional Digital Relays for High-voltage Power Receiving Applications

We would like to thank you for your continued patronage of Fuji products.
We will be changing some products as described below.
Please review the following information and take appropriate actions.
Please also inform all related sections of your company of these changes.

| | |
|---|---|
| Product name | Multifunctional digital relays for high-voltage power receiving applications |
| Series name | F-MPC60G Series |
| Type | UM6☐ (Common to all models) |
| Parts subject to change | ・Software (additional features) ・・・ The software version will be changed from V.1.☐.☐ to V.2.☐.☐.<br>1. Addition of accident waveform recording function<br>2. Addition of notification capability in case of equipment failure (RS-485 communication)<br>3. Addition of notification capability for circuit breaker on/off/trip (RS-485 communication and T-Link communication)<br>4. Change of equipment failure output at reset of clock IC<br>・Hardware<br>5. Change of panel sheet material and paint |
| Details of the change | 1. The number of recording cycles can now be set from the operating point [protective action] when performing accident waveform recording.<br>2. In the event of equipment failure, the failure code indicating the details of the failure can now be read out via RS-485 communication.<br>3. Operating time measurement results during circuit breaker operation can now be read out via RS-485 and T-Link communication.<br>4. It is now possible to turn off the equipment failure output when the clock IC undergoes data reset.<br>5. Change of panel sheet material and paint manufacturer<br><br>For details, see the attachment. |
| Reason for changes | To add the features required by the market and to improve procurability and productivity. |
| Date of the production change | Scheduled for products to be produced from May 2022 |
| Attachment | Attachment: Addition of Features and Change in Panel Sheet Material and Paint for F-MPC60G Series Products |
| Notes concerning the changes | This change will not affect product performance, but the version of the software being used will be changed.<br>(We will not provide software changes for already delivered products.)<br>[Version change]<br>・Applicable to low-voltage 3-phase 4-wire types (Type UM63FN-E☐AK)<br>V0 => V0A (Only 3 items will be changed. Items 1, 2, and 4 have been reflected in the specifications since the product launch)<br>・Other than the above<br>V1☐ => V2 |

# Attachment

## Addition of Features and Change in Panel Sheet Material and Paint for F-MPC60G Series Products (Fin7570236)

Fuji Electric
Innovating Energy Technology

Rep No.B21039

October, 2021

Fuji Electric FA Components & Systems Co., Ltd.,

## [Details of the change]

(1) The number of effective recording cycles can now be set from the operating point [protective action] when performing accident waveform recording.
(2) In the event of equipment failure, the failure code indicating the details of the failure can now be read out via RS-485 communication.
(3) Operating time measurement results during circuit breaker operation can now be read out via RS-485 communication.
(4) It is now possible to turn off the equipment failure output when the clock IC undergoes data reset.
(5) Change of panel sheet material and paint.

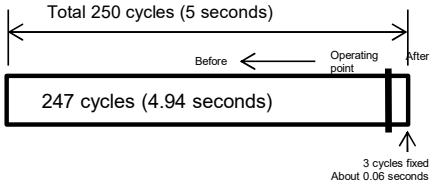
### Conventional product

**(1) The number of accident waveform recording cycles can now be set**

**Number of recording cycles after operating point = 3 cycles fixed**

**Sampling electrical angle setting 3.75° (96 times): 3 cycles**
**Sampling electrical angle setting 7.5° (48 times): 3 cycles**
**Sampling electrical angle setting 15° (24 times): 3 cycles**
**Sampling electrical angle setting 30° (12 times): 3 cycles**

Image of actual waveform recording
(E.g.: Rated frequency = 50 Hz, sampling electrical angle 15°)



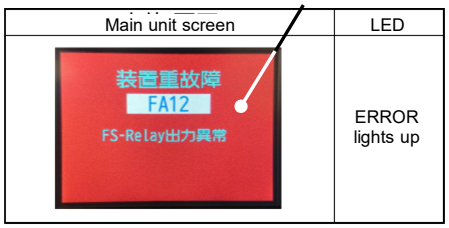

**(2) Addition of notification capability in case of equipment failure (RS-485 communication)**

**[Notification method]**

**(1) Main unit display**

**Failure display and ERROR LED lights up on main unit's scree**

E.g.) FS-Relay output error
Failure code




**(2) RS-485 communication**

**Failure code readability: No**

| Protocol | Readout | Address | Reply data (Failure code) |
|---|---|---|---|
| F-MPC-Net | Not supported | | |
| ModbusRTU | | | |

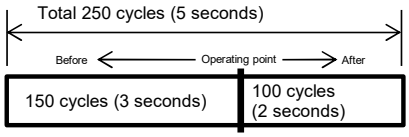
### Changed product (The blue text indicates the changes)

**(1) The number of accident waveform recording cycles can now be set** * UM63FN-E□AK is supported

**Number of recording cycles after operating point = Settable**

**Sampling electrical angle setting 3.75° (96 times): 3 to 31 cycles**
**Sampling electrical angle setting 7.5° (48 times): 3 to 62 cycles**
**Sampling electrical angle setting 15° (24 times): 3 to 125 cycles**
**Sampling electrical angle setting 30° (12 times): 3 to 250 cycles**
*** The factory default setting is 3 cycles.**

Image of actual waveform recording
(E.g.: Rated frequency = 50 Hz, sampling electrical angle 15°; cycles after operation = At 100 cycle setting)




The operating point indicates the moment when protective action is established (time up).

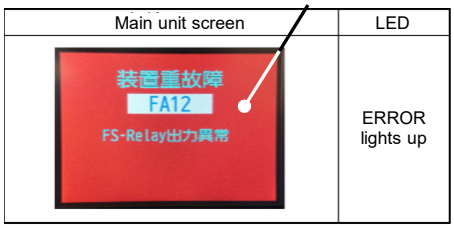
**(2) Addition of notification capability in case of equipment failure (RS-485 communication)** * UM63FN-E□AK is supported

**[Notification method]**

**(1) Main unit display (No change)**

**Failure display and ERROR LED lights up on main unit's screen**

E.g.) FS-Relay output error
Failure code




**(2) RS-485 communication**

**Failure code readability: Yes**

| Protocol | Readout | Address | Reply data (Failure code) |
|---|---|---|---|
| F-MPC-Net | Command 00 | Group 3, No. 8 | FA0001～FD0010 |
| ModbusRTU | FC = 04H | 0F08H | FA01～FD10 |

* Depending on the failure, the failure might not be readable.

# Attachment

## Addition of Features and Change in Panel Sheet Material and Paint for F-MPC60G Series Products (Fin7570236)

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### (3) Addition of operating time notification at circuit breaker operation (on/off/trip) (Communication: RS-485 and T-Link)

#### Conventional product

**[Notification method]**

**(1) Main unit screen display**

**Displayed on the following screen only in test mode.**

(E.g.)


**(2) Communication output (RS-485 and T-Link)**

**Operating time readability: No**

| Protocol | Readout | Address | Reply content (operating time) |
|---|---|---|---|
| RS-485 (F-MPC-Net) | Not supported | | |
| RS-485 (ModbusRTU) | | | |
| T-Link | | | |

#### Changed product (The blue text indicates the changes)

**[Notification method]**

**(1) Main unit screen display (No change)**

**Displayed on the following screen only in test mode.**

(E.g.)


**(2) Communication output (RS-485 and T-Link)**

**Operating time readability: Yes**

**•Outputs the circuit breaker operating time when the circuit breaker operates in normal mode or test mode.**

| Protocol | Readout | Address | Reply content (operating time) | |
|---|---|---|---|---|
| RS-485 (F-MPC-Net) | Command 16 | Lead point 06 | On | 0.001 to 9.000 (s) (0.000 is the initial value, and 9.999 is the error value) |
| | | Lead point 06 | Off | |
| | | Lead point 06 | Trip | |
| RS-485 (ModbusRTU) | FC = 04H | 01C0H | On | 0.001 to 9.000 (s) (0.000 is the initial value, and 9.999 is the error value) |
| | | 01C2H | Off | |
| | | 01C4H | Trip | |
| T-Link | Extension 2 | Setting station + 3, Group 10 | On | 0.001 to 9.000 (s) (0.000 is the initial value, and 9.999 is the error value) |
| | | Setting station + 3, Group 11 | Off | |
| | | Setting station + 3, Group 12 | Trip | |

* Supported communication protocols vary depending on the model.

### (4) Change of equipment failure output at reset of clock IC

*** UM63FN-E□AK is supported**

**When the backup capacitor is completely discharged, the clock IC resets the date/time information, but since this is not an equipment failure, the equipment failure contact output and LED lighting do not become activated.**

**Starting at 00:00 on January 1, 2000**
**Panel display: FD01**
**Equipment failure contact: Output**
**Equipment failure LED: ON**

**Starting at 00:00 on January 1, 2000**
**Panel display: FD01**
**Equipment failure contact: No output**
**Equipment failure LED: OFF**

* When this occurs, clear the error display and reset the clock by performing a reset.

### (5) Change of panel sheet material and paint

**(1) Sheet material**

**Toyobo: Cosmoshine A4300**

**(2) Printing paint manufacturer**

**Teikoku Ink**

**(1) Sheet material**

**Toyobo: Cosmoshine A4360**

**•There is no change in the physical properties of the film itself.**

**(2) Printing paint manufacturer**

**Jujo Chemical**

**・Matte finish is applied to the panel sheet to prevent scratches and reduce extraneous light reflection on the LCD.**
**The surface is relatively rougher than conventional products, but there is no change in function or performance.**