AFE-II
Software Change Note
ARFIFF05

Application: ARFIFF05
Application Name: Standard AFE-II application
Manual: DPD01979

Update Note 1: This application parameters are not kept backwards compatible if new features or improvements would be difficult to implement by doing so. Read this change note and chapter "Compatibility issues in parameters between versions" from manual before updating the application.

Update Note 2: It's recommended to use compare function for parameter changes when updating application, especially in cases when version number change is considerably high.
Application is constantly developed; this includes changing parameter default values, and if parameters are directly downloaded to drive improved default values may be lost.

ARFIFF05V055

Replaced Application: ARFIFF05V052
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Added features for NXC cabinet fast commissioning.
- P2.7.1.6 FaultWarnIndicat parameter.
    - Fault and Warning indication to fieldbus and DO
        - Static signal, as long as warning or fault is active
        - New fault or warning toggles signal for one second.
        - Signal toggles in new fault or warning and status needs to be reset to get signal down.
- Added P2.8.20 FB Control Slot Selector
- Added P2.3.1.14 I/O Term Control
- Added P2.3.1.15 Keypad Control
- Added P2.3.1.16 Fieldbus Control

ARFIFF05V052

Replaced Application: ARFIFF05V050
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Added temperature sensor protections
  - Added sensor temperature faults F56 and F65
  - Added monitor values Meas Temps 1-6 (IDs 50, 51, 52, 69, 70, 71) and Sensor Max Temp. ID 42
  - Added 16 parameters (IDs 739-746, 764-773) to TempSensors parameter group
- Updates to Data Logger default signals.

ARFIFF05V050

Replaced Application: ARFIFF05V049
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- FB Status Word B8 At Reference was not showing DC Reference, fixed.

ARFIFF05V049

Replaced Application: ARFIFF05V048
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Added digital inputs
  - Insulation monitoring
  - Aux Voltage monitoring
  - Main Fuse monitoring
  - Safe stop relay monitoring
  - Arc relay monitoring
  - Earth switch monitoring
  - Ambient temp monitoring
  - Leakage monitoring
- Added warning to all new digital inputs
- Added cabin state word
  - B0 main fuse warning
  - B1 aux voltage warning
  - B2 Safe stop relay warning
  - B3 insulation warning
  - B4 earth switch warning
  - B5 arc relay warning
  - B6 high ambient temp warning
  - B7 leakage warning

ARFIFF05V048

Replaced Application: ARFIFF05V047
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Added P2.3.4.1 Start/Stop Logic.
  - 0 / Static
  - 1 / Rising Edge
  - 2 / Pulse

ARFIFF05V047

Replaced Application: ARFIFF05V044
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- If calculated minimum MCB closed level was below unit minimum close level MCB was not closed even if DC was high enough, fixed.
- External Fault was not connected to Fault Word 2 B6, fixed.
- Pulse MCB control was giving opening command in some power up situations, fixed.

ARFIFF05V044

Replaced Application: ARFIFF05V040
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- DIN Force MCB Open did not stop charging command, fixed.
- Added High MCB Close Limit parameter.
    - MCB Closing level can be increased from normal level.
- F8 System Fault will also open MCB immediately.
- DI: MCB Trip state inverted by default. Can be reverted by inversion control.
- Added MCB Control status to FB Status Word B11
- Added MCB Feedback status to FB Status Word B12
- DC Reference Offset was not included when reference was coming from master drive, fixed.

ARFIFF05V040

Replaced Application: ARFIFF05V039
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Active current limits and power limits separated.
  - Power limits are based on actual grid voltage.
  - 100 % power limit is at nominal current at nominal voltage.
- Added Input Active Current limit parameter.
- Added Output Active Current limit parameter.

ARFIFF05V039

Replaced Application: ARFIFF05V035
Used Firmware version: NXP4.80
System Software requirement: NXPV191
Released to field:
Used in production:
Changes in new application:

- Added Ready to Start signal.
- Minimum Grid Nominal voltage was handled incorrectly, fixed.

ARFIFF05V035

Replaced Application: ARFIFF05V033
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 27.4.2016
Used in production:
Changes in new application:

- MCB open command will be given if F64 is happening.

ARFIFF05V033

Replaced Application: ARFIFF05V032
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 27.4.2016
Used in production:
Changes in new application:

- Changes to soft synch behavior, few cases first start was made without hardware synchronization, fixed.

ARFIFF05V032

Replaced Application: ARFIFF05V031
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 9.3.2016
Used in production:
Changes in new application:

- Added RegenSyncKpStart parameter ID1300

ARFIFF05V031

Replaced Application: ARFIFF05V030
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 9.2.2016
Used in production:
Changes in new application:

- On keypad control, pressing stop button for 2 second will open the main circuit breaker.
- On PC Control, pressing Coast Stop on Operating Window will open the main circuit breaker.

ARFIFF05V030

Replaced Application: ARFIFF05V028
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 9.2.2016
Used in production:
Changes in new application:

- Monitoring reference Vdc and % values are taken in same point of reference chain.
- Added Final DC Ref monitoring signal, offset included.
- Updates to Data Logger default signals.
- Added Reset parameter for datalogger signals.
- Changes to soft synch behavior, hardware detection is active only in first synchronization attempt.

ARFIFF05V028

Replaced Application: ARFIFF05V025
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 28.12.2015
Used in production: 29.12.2015
Changes in new application:

- Warning text for W67 was wrong, fixed.
- Fieldbus fault indications improvements.
- Last Active fault added for monitoring, see fault history to see first fault, if several fault are active at the same time.
- FB Fixed DC Reference needed to FBSpeedReference to be above 5000, changed that fixed references are working always in FB Control.
- Vacon AFE 2 profile implemented.

ARFIFF05V025

Replaced Application: ARFIFF05V024
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 10.7.2015
Used in production: 9.9.2015
Changes in new application:

- DC Voltage reference shown also as Vdc
- Added ID Control functions for DIN and Value Control
- **Compatibility Issue:** MCB Force Open inverted. This to follow NXC cabinet default signals.

ARFIFF05V024

Replaced Application: ARFIFF05V021
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field: 12.3.2015
Used in production:
Changes in new application:

- Added G2.6.7 Control Group
  - Capacitor and Inductor Size
  - Dynamic Support Kp
  - Synch Kp and Ti
  - Active Current Kp and Ti
- Selection how MCB is closed.
  - DC Link Voltage
  - DC Link Voltage Or Start Command
  - Start Command

ARFIFF05V021

Replaced Application: ARFIFF05V020
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field:
Used in production:
Changes in new application:

- MCB Close control required too high DC Voltage on low voltage grids, fixed.
- Added DC Reference Offset parameter, used to compensate DC-Link measurement offset.

ARFIFF05V020

Replaced Application: ARFIFF05V019
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field:
Used in production: 4.2.2015
Changes in new application:

- Added several OPT-D7 related monitoring signals
- Logic for THD protection based on OPT-D7 measurements.
- Logic for High Frequency Voltage protection based on OPT-D7 measurements.

ARFIFF05V019

Replaced Application: ARFIFF05V018
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field:
Used in production:
Changes in new application:

- ID44 DC Voltage had two decimals, fixed.
- PC Control only possible when P3.1 Control Place is Keypad.

ARFIFF05V018

Replaced Application: ARFIFF05V017
Used Firmware version: NXP4.78
System Software requirement: NXPV189
Released to field:
Used in production:
Changes in new application:

- DC-Link Voltage ID44 -> ID1108.
- Added DC Voltage ID44, Unfiltered.
- Current -> Total Current ID3
- Added Current ID1113
- AFE Options 2 B9 disabled internally if running, with a delay of 500 ms, to get F10 fault.
    - F10 did not triggered if AFE Options 2 B9 is active when supply was lost. Bug in APFIFF02.
    - Operation in ARFIFF05 will make voltage F92 Supply Voltage fault.
- Now charging fault disabled if command to open MCB is active.