

## Generator Application Software Change Note ARFIFF30

**Application:** ARFIFF30  
**Application Name:** Generator application  
**Manual:** DPD01916

**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.

There is ARFIQ142V001 Double Generator based on ARFIFF30V079, configured as a 1<sup>st</sup> application in drive memory.

There is ARFIQ142V002 Double Generator based on ARFIFF30V094, configured as a 1<sup>st</sup> application in drive memory.

There is ARFIQ142V003 Double Generator based on ARFIFF30V105, configured as a 1<sup>st</sup> application in drive memory.

## **ARFIFF30V116**

**Replaced Application:** ARFIFF30V114  
**Used Firmware version:** NXP 5.01  
**System Software requirement:** NXPV203  
**Released to field:** -  
**Used in production:** -  
**Changes in new application:**

- DC Reference filtering time by default to 30 ms.
- Added identification selection 8: AFE Current Measurement Offset identification.
- Added DC Link Measurement gain calibration.
- Added V1.2.15 Fault Word 10
- Added V1.2.16 Warning Word 10
- Added P2.5.8.1 Temp Lim Superv.
- Added P2.5.8.2 Temp Lim Value
- Added P2.5.1.24 Temp Lim Superv.

## **ARFIFF30V114**

<b>Replaced Application:</b>	ARFIFF30V112
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- When coming back to commissioning mode from any other mode Status Word bits (B13-B15) were not reset, fixed.
- OPT-BH was giving short circuit warning before reading from option board has stabilized on 24 Vdc power up, fixed.

## ARFIFF30V112

<b>Replaced Application:</b>	ARFIFF30V111
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- Added support for OPT-BH temperature measurement board.
- Unit over temperature W14 information added to Warning Word 1 B08.
- Added PT100 Max Temperature monitoring signal ID42.
- Added response parameter for second temperature measurement board.

## **ARFIFF30V111**

<b>Replaced Application:</b>	ARFIFF30V109
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- Fixed Active and Reactive signal monitoring in certain operation modes.

## **ARFIFF30V109**

**Replaced Application:** ARFIFF30V106  
**Used Firmware version:** NXP4.94  
**System Software requirement:** NXPV197  
**Released to field:** -  
**Used in production:** -  
**Changes in new application:**

- Added FlyStartPhaseTime parameter ID1718
- Monitoring signal Active Current internal signal changed
- Monitoring signal Reactive Current internal signal changed
- Changes to Datalogger default signals.

## **ARFIFF30V106**

<b>Replaced Application:</b>	ARFIFF30V105
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- In open loop commissioning mode with "low" voltage motor drive did not go ready state, fixed.

## ARFIF30V105

<b>Replaced Application:</b>	ARFIF30V103
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- Added parameter to disable Iq reset when drive is at over voltage controller. Default active.
  - This has been by default active previously but now its possible to disable in certain situations.
- Added parameter to reset Datalogger to factory settings.
- Identification selections and functions updated to Marine APFIF09 V214 level.
- SCTorqueChainSelect 96
  - Was not stored in identification run, fixed.
  - Was reset when other identification runs were made, fixed.
- Automatic parameter backup function disabled.
- Added Advanced Options 7 as parameter.
- Estimator Ki added as parameter.
- Ident Run Current Controller Kp added as parameter.
- Flux Saturation Ratio added as parameter.
- Enc ID Run Mode added as parameter.



## **ARFIF30V103**

<b>Replaced Application:</b>	ARFIF30V102
<b>Used Firmware version:</b>	NXP4.94
<b>System Software requirement:</b>	NXPV197
<b>Released to field:</b>	-
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- FB WD pulse monitoring is started after WD pulse has falling edge or FB CW B10 goes high after control board reset situations.
- If FB Control Slot is selected other FB board do not give warning anymore.

## ARFIF30V102

**Replaced Application:** ARFIF30V101

**Used Firmware version:** NXP4.94

**System Software requirement:** NXPV197

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- **Compatibility issue**
  - CL Over voltage controller is no longer disabled on PTI modes by default.
  - Disable\Enable is selected by P2.6.5.2.5 CL OV On PTI
- Added P2.6.5.2.5 CL OV Ref On PTI
- Added P2.6.5.2.6 CL OV Ren On PTI
- CL Over Voltage reference is changed to P2.6.5.2.5 when going to PTI from PTO after torque reference has ramped to zero, ramp rate defined by P2.2.4.6 TRefRampDownRate ID1935.

## ARFIF30V101

**Replaced Application:** ARFIF30V100  
**Used Firmware version:** NXP4.94  
**System Software requirement:** NXPV197  
**Released to field:** -  
**Used in production:** -  
**Changes in new application:**

- **Minor Compatibility issue**
  - P2.2.4.5 TorqueRefRampTime is removed and internally forced to zero.
  - New parameter for new ramp handling
    - P2.2.4.5 TRefRampUpRate ID1934
    - P2.2.4.6 TRefRampDownRate ID1935
  - P2.2.4.5 TorqueRefRampTime was ramping regardless of Run state. With long ramp time torque reference did not ramp to new reference fast enough e.g. when changing between PTO and PTI-Boost modes.
  - TRefRampUpRate is ramp rate when absolute value is increasing.
  - TRefRampDownRate is ramp rate when negative or positive value is going toward zero.

## ARFIF30V100

**Replaced Application:** ARFIF30V98

**Used Firmware version:** NXP4.94

**System Software requirement:** NXPV197

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Datalogger setting were changed directly from Motor Control Mode, changed so that signal will not change if change is just Torque <> Speed.
  - Datalogger file was started again if active fault and Datalogger set was changed.
- Datalogger settings had non-existing signal. fixed.
- Added MCB Close function 3, closes from FB Control Word B0.

## **ARFIFF30V098**

**Replaced Application:** ARFIFF30V97

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Added FB Analogue Output was not in monitoring variable but was in AO selections.
- Added Phase current monitoring signals.

## **ARFIF30V097**

**Replaced Application:** ARFIF30V93

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Added Load Drooping parameter for speed control.
- Negative Speed reference possible for fieldbus.

## ARFIFF30V095

**Replaced Application:** ARFIFF30V93

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Identification warning will give sub code to indicate where identification failed.
- Added Shaft Frequency and Encoder Frequency
  - Shaft Frequency is the value that motor control is using.
  - Encoder Frequency is directly from encoder.
- Possible to select how Fault and Warning indication to fieldbus and DO behaves. P2.12.1.13 FaultWarnindicat
  - 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 P2.8.7.3 DeadTimeComp.
- Added P2.8.7.4 DeadTieContCurl
- **Compatibility issue**
  - FreqRef "FreqReference" ID changed from 1752 to 25

## **ARFIF30V093**

**Replaced Application:** ARFIF30V91

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Identification for FWP was not stored to parameters, fixed.
- Added identification modes 6 and 7
- Data Logger setting changed automatically depending on selected modes.



## **ARFIFF30V091**

**Replaced Application:** ARFIFF30V88

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Added Voltage Drop parameter
- Added Current Control Kp D parameter

## **ARFIF30V088**

**Replaced Application:** ARFIF30V87

**Used Firmware version:** NXP4.90

**System Software requirement:** NXPV196

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Extended support for Fieldbus Process Data In and Out variables from 8 to 16.
  - PD 9-16 parameters are visible if a fieldbus board with 16 PD support is inserted to option board slot D or E.
  - The use of PD variables 9-16 is enabled with the Fieldbus parameter P2.13.36 Control Slot Selector.

## **ARFIFF30V087**

**Replaced Application:** ARFIFF30V83

**Used Firmware version:** NXP4.83

**System Software requirement:** NXPV192

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- Status Word (Application) was missing PTI, PTO and Regen status information, added.
- Added more extensive status word for limit controllers.
- INU modes looks now frequency direction for Input and Output Active Current limits.
- F43 Encoder fault was not in fault word, added.
- Added fault simulation bit for F43 Encoder.

## **ARFIFF30V083**

**Replaced Application:** ARFIFF30V82

**Used Firmware version:** NXP4.83

**System Software requirement:** NXPV192

**Released to field:** -

**Used in production:** -

**Changes in new application:**

- F14 Unit Temperature warning and fault did not come from fault block, fault simulation did not give DO signal or FB Fault Word signal, fixed.
- Control Options 2 B1 has option to give pulse in case new fault or working comes while previous one is still active.

## ARFIFF30V082

<b>Replaced Application:</b>	ARFIFF30V78
<b>Used Firmware version:</b>	NXP4.83
<b>System Software requirement:</b>	NXPV192
<b>Released to field:</b>	2017.03.15
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- When setting change over change time to zero there was possibility that drive could not be started again, fixed.
- Fault F82 had two triggering, Over Load and Start Failed, start failed function removed.
- MCB was closed before close level was updated to correct value, added secondary monitoring level for MCB close in application level.

## **ARFIF30V078**

<b>Replaced Application:</b>	ARFIF30V77
<b>Used Firmware version:</b>	NXP4.83
<b>System Software requirement:</b>	NXPV192
<b>Released to field:</b>	2017.03.10
<b>Used in production:</b>	-
<b>Changes in new application:</b>	

- Soft synch is active only in first synchronization attempt.

## **ARFIF30V077**

**Replaced Application:** ARFIF30V73

**Used Firmware version:** NXP4.83

**System Software requirement:** NXPV192

**Released to field:** 2017.02.15

**Used in production:**

**Changes in new application:**

- Emergency Stop changed to Quick Stop.
- IM RegenMotor operation license moved to correct place.
- Power Limit parameter was controlling Active Current in AFE mode, fixed.
- Added parameters for Active Current Limits.
- Added two U/f "middle points" activated by U/f Ratio select selection 4 / Prog; Multi
- Added second field weakening point parameters.
- Firmware interface updated to 4.83
- I/f control has second point for current reference.

## **ARFIFF30V073**

**Replaced Application:** ARFIFF30V71

**Used Firmware version:** NXP4.80

**System Software requirement:** NXPV192

**Released to field:** 2016.8.23

**Used in production:**

**Changes in new application:**

- Internal MCB status is now with a three second delay as standard AFE operation.
- Charging was not reset in certain rare cases, fixed.
- Compatibility issue: MCB is opened in case of MCB fault.
- Identification functions updated to Marine V164 level.
- Added brake chopper functions.
- Possibility to change encoder input in OPT-A7 board that is used for closed loop control.
- Added parameter set function.



## **ARFIFF30V071**

**Replaced Application:** ARFIFF30V68

**Used Firmware version:** NXP4.80

**System Software requirement:** NXPV191

**Released to field:** 2016.3.9

**Used in production:**

**Changes in new application:**

- Second curve had same value used in two different points, fixed.
- 4 mA fault was reset all the time, fixed.

## **ARFIF30V070**

**Replaced Application:** ARFIF30V68  
**Used Firmware version:** NXP4.80  
**System Software requirement:** NXPV191 (Note)  
**Released to field:** 2015.4.22  
**Used in production:**  
**Changes in new application:**

- DC Voltage reference is updated correct level faster on power up situation. Reference was going through filter, filter is now set on power up.
- Small improvements to get drive ready state faster on power up situations.

## ARFIFF30V068

**Replaced Application:** ARFIFF30V67  
**Used Firmware version:** NXP4.80  
**System Software requirement:** NXPV191 (Note)  
**Released to field:** 2015.4.22  
**Used in production:**  
**Changes in new application:**

- Removed, Added P2.12.7.10 OverCurrTripLim to allow further development with released system software's.
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## **ARFIFF30V067**

**Replaced Application:** ARFIFF30V66  
**Used Firmware version:** NXP4.81  
**System Software requirement:** NXPV192 (Note)  
**Released to field:** 2015.4.22  
**Used in production:**  
**Changes in new application:**

- Added P2.12.7.10 OverCurrTripLim

## **ARFIFF30V066**

**Replaced Application:** ARFIFF30V65  
**Used Firmware version:** NXP4.76  
**System Software requirement:** NXPV189  
**Released to field:** 2015.3.6  
**Used in production:**  
**Changes in new application:**

- Added DC Load share function.

## **ARFIFF30V065**

**Replaced Application:** ARFIFF30V64

**Used Firmware version:** NXP4.76

**System Software requirement:** NXPV189

**Released to field:** 2015.2.17

**Used in production:**

**Changes in new application:**

- F2 Over Voltage will open MCB immediately.
- F1 Over Current will open MCB immediately.
- Added sub codes for MCB Fault handling
  - F64 A1: Code given by V064 and older versions.
  - F64 A2: MCB open while requested closed
  - F64 A3: MCB closed while requested open.
  - F64 A4: MCB opened externally while drive was in run state.

## **ARFIF30V064**

**Replaced Application:** ARFIF30V63

**Used Firmware version:** NXP4.76

**System Software requirement:** NXPV189

**Released to field:** 2015.1.15

**Used in production:**

**Changes in new application:**

- Updates to Status Word (Application).
- System Nominal AC parameter minimum limit to zero.
- Over Voltage Reference was getting too high value when System Nominal AC parameter was used, fixed.