

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 1st application in drive memory.

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

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

There is ARFIQ142V004 Double Generator based on ARFIFF30V131, configured as a 1st application in drive memory.

There is ARFIQ142V005 Double Generator based on ARFIFF30V140, configured as a 1st application in drive memory.

ARFIFF30V141

Replaced Application:	ARFIFF30V138
Used Firmware version:	NXP 5.03
System Software requirement:	NXPV211
Released to field:	-
Used in production:	-
Changes in new application:	

- IPR library bug fixed.
- Added V1.2.21 ResonanceAmplitude ID 1881 to monitoring group.
- Added V1.2.22 ResonanceFrequency ID 1882 to monitoring group.
- Added ID Functions, VALUE CONTROL 2, group G2.14.2.
- Added ID Functions, VALUE CONTROL 3, group G2.14.3.
- Added ID Functions, DIN ID CONTROL 4, group G2.14.7.
- Added ID Functions, DIN ID CONTROL 5, group G2.14.8.
- The length of the MCC pulse is extended to be P2.12.1.8 MCC Fault delay if P2.10.14 Control Options 2 B09 = +512 and P2.5.1.2 MCC 1 Open Control > 9.
- Added parameter P2.6.5.2.10 OVctrlUdcDiffForIdBoost ID1874. OV-ctrl Id-boost active (PM-motor), if Udc derivative higher than this limit 10000=100.00%/ms.

ARFIFF30V138

Replaced Application:	ARFIFF30V136
Used Firmware version:	NXP 5.03
System Software requirement:	NXPV206
Released to field:	-
Used in production:	-
Changes in new application:	

- Added support for voltage class 8.

ARFIFF30V137

Replaced Application:	ARFIFF30V136
Used Firmware version:	NXP 5.03
System Software requirement:	NXPV206
Released to field:	-
Used in production:	-
Changes in new application:	

- Firmware interface update to 5.03
- Added ID numbers to firmware variables to allow access through fieldbus.
 - 4521 Unit Temp 1 U-phase temperature. If star then power1
 - 4522 Unit Temp 2 V-phase temperature. If star then power1
 - 4523 Unit Temp 3 W-phase temperature. If star then power1
 - 4524 Unit Temp 4 Card temperature. If star then power1
 - 4525 Unit Temp 5 U-phase temperature of power2
 - 4526 Unit Temp 6 V-phase temperature of power2
 - 4527 Unit Temp 7 W-phase temperature of power2
 - 4528 Unit Temp 8 Card temperature of power2

ARFIFF30V136

Replaced Application:	ARFIFF30V135
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added P2.8.7.6 Over Mod. Limit ID1515

ARFIFF30V135

Replaced Application:	ARFIFF30V133
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- V1.1.16 Enoder 1 Freq. ID1164, moved to V1.2.11
- V1.2.11 Shaft Frequency ID1124, moved to V1.1.16
- Added V1.2.20 Encode 2 Freq. ID53

ARFIFF30V134

Replaced Application:	ARFIFF30V133
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added P2.2.4.7 Torque Control Kp ID639
- Added P2.2.4.8 Torque Control Ki ID640

ARFIFF30V133

Replaced Application:	ARFIFF30V132
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added Control Options 2 B10 to disable DC charging when DC is above MCB closing level.

ARFIFF30V132

Replaced Application:	ARFIFF30V131
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- P2.8.3.3 Slip Adjust ID619: default changed from 100 % to 75 %

ARFIFF30V131

Replaced Application:	ARFIFF30V129
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added P2.12.1.17 ResAmplitudeLim ID2060
 - Values greater than zero activates function. Will generate fault when Resonance Amplitude is higher.
- Updated identification to Marine APFIFF09 V263 level, as applicable.
- Added V1.2.19 Status Word 2 ID89
 - B0: Status of the ID Value Control.

ARFIFF30V129

Replaced Application: ARFIFF30V128
Used Firmware version: NXP 5.01
System Software requirement: NXPV203
Released to field: -
Used in production: -
Changes in new application:

- Added V1.2.17 Non Ready Cause ID1661
- Added V1.2.18 Prevent MC Ready ID1609

ARFIFF30V128

Replaced Application: ARFIFF30V126
Used Firmware version: NXP 5.01
System Software requirement: NXPV203
Released to field: -
Used in production: -
Changes in new application:

- Added P2.10.28 Synch Ti Start ID1801
- Added P2.10.29 Synch Ti 2 Start ID1802
- P2.10.9 Active Current Kp maximum increased to 32000
- Fault Word 1 B13 was not connected to SystemBus fault, fixed.
- In DS follower drive the RunEnable was written in two different tasks, fixed.

ARFIFF30V126

Replaced Application:	ARFIFF30V125
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added support for Long Data Logger
 - Activeted with license key P2.5 LDL LicenseKey ID1989
- Added P2.12.7.10 OverCurrentTripLim, ID1094.
 - Software Over Current trip, F1 S4.

ARFIFF30V125

Replaced Application: ARFIFF30V123
Used Firmware version: NXP 5.01
System Software requirement: NXPV203
Released to field: -
Used in production: -
Changes in new application:

- Input phase supervision parameter was not in keypad, added.
 - P2.12.1.1 Input Ph. Superv ID730
- Added F80_ChargeFault_Act to FB Fault Word 2 B1: Charge Fault.
- Torque Stab Damp limited to 999

ARFIFF30V123

Replaced Application:	ARFIFF30V122
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- When changing to commissioning mode while PTM Stop Time was running it was not possible to start the unit in commissioning mode, fixed.

ARFIF30V122

Replaced Application:	ARFIF30V121
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Added two Klixon inputs F66 Klixon
 - P2.4.2.26 Klixon In 1 ID780
 - P2.4.2.27 Klixon In 2 ID781
 - P2.12.1.13 Klixon Response ID782
- Added input switch monitoring F55 Input Switch
 - P2.4.2.28 Input Switch ID1209
 - P2.12.1.15 Input Switch Respond ID785
- Added Ambien temperature monitoring. F88 Ambien Temp
 - P2.4.2.29 Ambien Temp ID783
 - P2.12.1.15 Ambien Temp Respond ID784
- F64 A4 was coming even if actual input was not used, fixed.
- Added P2.4.1.2 Input Inversion ID1091
 - B04 = +16 = INV Klixon input 1
 - B05 = +32 = INV Klixon input 2
 - B06 = +64 = INV High Ambient temperature
 - B07 = +128 = INV Input Switch

ARFIFF30V121

Replaced Application:	ARFIFF30V119
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- CL Undervoltage reference maximum increased to 130 %.
- Added Encoder 1 frequency supervision function
 - P2.5.1.25 Enc 1 SupV Func1
 - P2.5.1.26 Enc 1 SupV Func2
 - P2.5.8.3 Enc1 SupV Func 1
 - P2.5.8.4 Enc1 SupV Lim 1
 - P2.5.8.5 Enc1 SupV Func 2
 - P2.5.8.6 Enc1 SupV Lim 3

ARFIFF30V119

Replaced Application:	ARFIFF30V118
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Digital output handling was moved to end of the 10 ms task to respond faster fault trigs that are in the say task.
- Added No Indication response for Quick Stop response parameter.
- Added parameter to select indication method for Run Enable missing. P2.12.1.12 RunEnableIndication.
- Added Cooling monitoring group to Protection Group.
 - P2.12.9.1 Cooling Fault Delay.
 - P2.12.9.2 Cooling Fault Response
- Added individual temperature warning/fault limits G2.12.2.9
- Added Motor Speed monitoring variable V1.1.21
- Added Motoring Power limit function for low DC-Link voltage.
 - P2.6.2.10 UV Power DC Level.
 - P2.6.2.11 UV Power Limit
- Added Closed Loop under voltage Function
 - P2.6.5.2.8 Under voltage function activation
 - P2.6.5.2.9 CL Under Voltage Reference.

ARFIFF30V118

Replaced Application:	ARFIFF30V116
Used Firmware version:	NXP 5.01
System Software requirement:	NXPV203
Released to field:	-
Used in production:	-
Changes in new application:	

- Generator Torque limit was not written to firmware in open loop control, fixed.
- MF Mode selection 3: internal setting was not set correctly, fixed. Selecting first selection 4 and then 3 settings were initialized correctly.

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

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

- 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

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

- 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

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

- 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

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

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

ARFIFF30V105

Replaced Application:	ARFIFF30V103
Used Firmware version:	NXP4.94
System Software requirement:	NXPV197
Released to field:	-
Used in production:	-
Changes in new application:	

- 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 APFIFF09 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.

ARFIFF30V103

Replaced Application:	ARFIFF30V102
Used Firmware version:	NXP4.94
System Software requirement:	NXPV197
Released to field:	-
Used in production:	-
Changes in new application:	

- 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.

ARFIFF30V101

Replaced Application:	ARFIFF30V100
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.

ARFIFF30V100

Replaced Application: ARFIFF30V98

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.

ARFIFF30V097

Replaced Application: ARFIFF30V93

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

ARFIFF30V093

Replaced Application: ARFIFF30V91

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

ARFIFF30V088

Replaced Application: ARFIFF30V87

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.

ARFIF30V087

Replaced Application: ARFIF30V83

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

Replaced Application: ARFIFF30V78

Used Firmware version: NXP4.83

System Software requirement: NXPV192

Released to field: 2017.03.15

Used in production: -

Changes in new application:

- 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.

ARFIFF30V078

Replaced Application:	ARFIFF30V77
Used Firmware version:	NXP4.83
System Software requirement:	NXPV192
Released to field:	2017.03.10
Used in production:	-
Changes in new application:	

- 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.

ARFIF30V073

Replaced Application: ARFIF30V71

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.

ARFIFF30V070

Replaced Application: ARFIFF30V68
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.

ARFIFF30V064

Replaced Application: ARFIFF30V63

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.