



SIA-II Software Change Note APFIFF40

Application: APFIFF40
Application Name: SIA-II Application
Manual: DPD01975

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.



APFIFF40V114

Replaced Application: APFIFF40V113

Used Firmware version: NXP5.02

System Software requirement: NXPV207

Released to field: -

Used in production: -

Changes in new application:

- Fault/Warning word harmonized to Multipurpose application:
 - Added PT-100 1 and 2 faults (F56&F65) to FaultWord1 bit 7
 - External fault F81 added to FaultWord2 bit 6
 - Added PT-100 1 and 2 warnings (W56&W65) to WarningWord1 bit 1
- Fixed issue with P2.13.34 ControlSlotSel
 - If Advanced Safety card was used and fieldbus communication started, it was not possible to select modes above 5



APFIFF40V113

Replaced Application: APFIFF40V112

Used Firmware version: NXP5.02

System Software requirement: NXPV207

Released to field: -

Used in production: -

Changes in new application:

- Added new submenu G2.14.6 ID.Bit Control
- Added parameters to it:
 - ID1634: P2.14.6.1 ID Control ID.Bit
 - ID1618: P2.14.6.2 Controlled ID
 - ID1632: P2.14.6.3 FALSE Value
 - ID1633: P2.14.6.4 TRUE Value
- Added EnergyTripCounterUnit as ID1052 and EnergyTripCounter as ID12. They are readable through fieldbus.



APFIFF40V112

Replaced Application: APFIFF40V111

Used Firmware version: NXP5.02

System Software requirement: NXPV207

Released to field: -

Used in production: -

Changes in new application:

- VNXC-3206 - Implement: Implement PCR: NXP: CBM remove std zero warning in SIA application
 - Zeros in baseline warning no longer given for standard deviation arrays.



APFIFF40V111

Replaced Application: APFIFF40V111
Used Firmware version: NXP5.02
System Software requirement: NXPV207
Released to field: -
Used in production: -
Changes in new application:

- VNXC-3069 - Implement: Implement PCR: NXP: CBM requirements for SIA application
 - P_BaselineType is now editlocked according to BaselineRunOngoing.
 - If P_BaselineType is changed during online run warning code 85 A2 will be set.
 - Manual baseline run now checks for rising trigger of MC_RUN for start signal.
 - Load warning S2 now gives subcode 11 and Load S1 gives subcode 12.
- VNXC-2533 - Implement: Implement PCR: APFIFF40 SIA2 Shaft angle monitoring value resolution increase (SF:10172633)
 - A new value added (ID 1992) that is the same but has one more decimal.
 - Value added in menu to position V1.25.24
- VNXC-2945 - Implement: Implement PCR: SIA2_V108_DTC Identification slip adjust error (SF case 12375759)
 - Slip adjust is now scaled correctly.
 - Slip adjust parameter is also written for motor temperature compensation mode 2.
- VNXC-2087 - Implement: Implement PCR: APFIFF10 - SIA II: document speed controller I-factor-disable
 - Comment for P_SCTorqueChainSelect (ID1557) updated according to task.



APFIFF40V110

Replaced Application: APFIFF40V108
Used Firmware version: NXP5.02
System Software requirement: NXPV206
Released to field: -
Used in production: -
Changes in new application:

- In "Ident All" selection, encoder identifications are disabled if slot C is empty.
- Negative fieldbus reference did not work in fast fieldbus mode, fixed.



APFIFF40V108

Replaced Application: APFIFF40V107
Used Firmware version: NXP5.02
System Software requirement: NXPV206
Released to field: -
Used in production: -
Changes in new application:

- Added P2.8.4.11 CL M Mode
 - Possibility to select flux mode 2



APFIFF40V107

Replaced Application: APFIFF40V106

Used Firmware version: NXP5.02

System Software requirement: NXPV206

Released to field: -

Used in production: -

Changes in new application:

- Watchdog fault can now be reset when using FB comm fault response modes 4 and 5.
- After an ID run SlipAdjust menu parameter is updated according to automatic set value and parameter store is triggered.



APFIFF40V106

Replaced Application: APFIFF40V105
Used Firmware version: NXP5.02
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Removed P2.18.4 SDI Reaction.
 - Not supported by safety board.



APFIFF40V105

Replaced Application: APFIFF40V104
Used Firmware version: NXP5.02
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- o Torque Stab Damp limited to 999
- Modified store main POU
- CBM:
 - o Removed activated storeparametersflag after reset data is changed. Changed reset data to retain variable



APFIFF40V104

Replaced Application: APFIFF40V103
Used Firmware version: NXP5.02
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Updated firmware 4.96 (RAM 30720) -> 5.02 (RAM 32768)
- Condition based monitoring online baseline
 - o Added different fault mode for every feature
 - o Commissioning settings are set automatic after baseline finished
 - o Changed default values: Mean +/- 3 Standard Deviation for all functions except max is used in vibration after baselinerun
 - Baseline offset is set automatic after baseline finished
 - o Bugfix: All data points were reset after power down and manual modification.
 - o Bugfix: Data points not saved correctly to par file.
 - o Bugfix: Steady delay is not used if operation point comes back from frozen area
 - o Bugfix: Online current or voltage counter is updated even right control mode is not active
 - o BaselineType did not update after power down. BaselineType is retain value now



APFIFF40V103

Replaced Application: APFIFF40V100
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- In sensorless control Flux Ready state was reset every second, fixed.



APFIFF40V102

Replaced Application: APFIFF40V100

Used Firmware version: NXP4.96

System Software requirement: NXPV198

Released to field: -

Used in production: -

Changes in new application:

- Added Condition Based Monitoring online baseline
 - o Changed baseline start parameter to baseline type. Added online option
 - o Added online counters and stored them
 - o Added weighted mean and std calculations
 - o Added online support to baselinestatus
 - o Added speed band parameter
 - o Fixed factor of baseline
 - o Factor of baseline is set automatic after baseline and online run
 - o high limits (110%, 120% and 130%) are set automatic after baseline and online run



APFIFF40V101

Replaced Application: APFIFF40V100

Used Firmware version: NXP4.96

System Software requirement: NXPV198

Released to field: -

Used in production: -

Changes in new application:

- Bugfix: P2.4.22 Reverse VWphases not displayed/selectable properly on Panel
- VNXC-1994 - Implement: Implement PCR: APFIFF40: Wrong formula in temperature calculation
- Removed unused CBM variables and parameters



APFIFF40V100

Replaced Application: APFIFF40V099

Used Firmware version: NXP4.96

System Software requirement: NXPV198

Released to field: -

Used in production: -

Changes in new application:

- Added reverse VW phases ID 1062 parameter
- Added multi-step Reference function by Digital Input(Preset Speed 1~3)
- Added estimated motor temperature in Celsius. This value is used in monitor value ID 9 when MotorTempRiseCelsius parameter ID 1922 is non-zero value
- Added vibration and load monitoring to CBM



APFIFF40V099

Replaced Application: APFIFF40V097
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- With some new fieldbus board when fast communication was activated 1 ms reference chains were not used, fixed.
- Master Follower modes 1, 2, 3 and 4 will set OPT-D2 TX1 jumper on software side. Hardware jumpers can be left to TX2. Note OPT-D2 needs to be J version or newer.
- LsVoltageMax limit increased from 3000 to 30000



APFIFF40V098

Replaced Application: APFIFF40V097
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Added Datalogger reset parameter



APFIFF40V097

Replaced Application: APFIFF40V096
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Added Echo mode to FB Profiles.



APFIFF40V096

Replaced Application: APFIFF40V095
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Extended safety card support to E-slot



APFIFF40V095

Replaced Application: APFIFF40V094

Used Firmware version: NXP4.96

System Software requirement: NXPV198

Released to field: -

Used in production: -

Changes in new application:

- FBModeSlotE and FBModeSlotD are written to firmware only when changed.
- Added Serial number key ID 1997 monitor value
- CBM
 - o Fine tuning CBM parameters
 - o Stored voltage unbalance values in the sensorless control
 - o Changed start-stop logic. Baseline is started after normal start command and stop after baseline is finished.



APFIFF40V094

Replaced Application: APFIFF40V093
Used Firmware version: NXP4.96
System Software requirement: NXPV198
Released to field: -
Used in production: -
Changes in new application:

- Condition Based Monitoring
 - o Added Baseline run and Stator Winding Monitoring features
 - o Added password to all CBM functions
 - o Added licence to activate CBM



APFIFF40V093

Replaced Application: APFIFF40V090
Used Firmware version: NXP4.94
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Fault in master was also triggering F75 DS Follower fault, fixed
- Added P2.18.7 SafetyOptions ID 548



APFIFF40V090

Replaced Application: APFIFF40V089

Used Firmware version: NXP4.94

System Software requirement: NXPV196

Released to field: -

Used in production: -

Changes in new application:

- I/f frequency limit calculated from nominal frequency when changed.
- F74, Follower fault selection 3 was undefined, added coasting stop.
- Added P2.15.11.1 (Brake Control) Stop Torque Release time ID1858.



APFIFF40V089

Replaced Application: APFIFF40V086
Used Firmware version: NXP4.94
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Drive Synch Mode Master Control Word was not updated in monitoring page, fixed.
- Removed the need to set control place when drive is Drive Synch Follower.
- Drive 1 was getting system bus fault when Drive 2 was acting Master, fixed.
- Added monitoring signals NonReadyCauses and PreventMCReady
- Automatic panel backup disabled.
- Added Absolute encoder identification mode selection "EnclRunMode"
- Identification mode 7 / DTC Identification update for Induction motor.
 - Requires system software NXPV201
 - Older system software version uses earlier mode.



APFIFF40V086

Replaced Application: APFIFF40V081
Used Firmware version: NXP4.94
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Added parameter Advanced Options 7
- Added parameter Start Angle Offset
- Added Run state lock for Encoder Superv. parameter.
- Firmware updated to 4.94
- SESM parameter reorganized.
- Freq Ref Select Encoder 2 uses AI2 filtering time.
- Joystick reference reverse did not work when control place was MF Master, fixed.
- FB Reference reverse did not work when control place was MF Master, fixed.
- Follower will show VSE_SafeQuickStop_Request i.e. Quick Stop.
- Added several monitoring signals for Advanced Safety Option board.



APFIFF40V081

Replaced Application: APFIFF40V077
Used Firmware version: NXP4.90
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Added G2.18 Functional Safety.
 - Support in Slot D for OPT-BL, OPT-BM and OPT-BN
- Added support for OPT-BL, OPT-BM and OPT-BN in slot C.
- Added Quick Stop option for SS1 and SS2.



APFIFF40V077

Replaced Application: APFIFF40V076
Used Firmware version: NXP4.90
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Identification warning will give a sub code
- Data Logger setting will change based on motor type and motor control mode.



APFIFF40V076

Replaced Application: APFIFF40V075
Used Firmware version: NXP4.90
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Drive stayed in sensorless control if changed to Closed Loop from Sensorless control.
- Ident All selection includes also DTC Identification run.



APFIFF40V075

Replaced Application: APFIFF40V074
Used Firmware version: NXP4.90
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Advanced Options 5 & 6 were over written, fixed.
- Pullout torque limiter activated automatically when needed.
- FBActualSpeed handling moved to 1 ms time level.
- Old Fast mode support added for Profibus boards.

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APFIFF40V074

Replaced Application: APFIFF40V067
Used Firmware version: NXP4.90
System Software requirement: NXPV196
Released to field: -
Used in production: -
Changes in new application:

- Added Ident Fail Monitoring value ID98
- Added I/f start parameters to Open Loop Group
- F14 & W17 Unit Temperature was not from fault block, fixed.
- Added more extensive limit/regulator status monitoring word.
- All FB Process Data handling moved to 1 ms time level in application.
- Added Sensorless Control selection
- Added Encoder Fault response; Change to OL Control
- Added DTC Identification.
- Added several parameters for PMSM



APFIFF40V067

Replaced Application: APFIFF40V066
Used Firmware version: NXP4.87
System Software requirement: NXPV193
Released to field: -
Used in production: -
Changes in new application:

- Added Voltage Drop parameter.
- Added Estimator Ki parameter.



APFIFF40V066

Replaced Application: APFIFF40V063
Used Firmware version: NXP4.87
System Software requirement: NXPV193
Released to field: -
Used in production: -
Changes in new application:

- Lsd and Lsq identification enabled for separately excited synchronous machine
- External excitation IO control hidden behind license
- Added monitor value Identfail (ID 98)



APFIFF40V063

Replaced Application: APFIFF40V061
Used Firmware version: NXP4.87
System Software requirement: NXPV193
Released to field: -
Used in production: -
Changes in new application:

- Code optimization.
- Firmware updated to NXP4.87.
- SM support improvements.
- Support for 16 Process datas.



APFIFF40V061

Replaced Application: APFIFF40V060
Used Firmware version: NXP4.76
System Software requirement: NXPV191
Released to field: -
Used in production: -
Changes in new application:

- In DriveSynch follower mode some parameters forced to correct setting if set changed from defaults.
- Identification current control Kp added.



APFIFF40V060

Replaced Application: APFIFF40V058
Used Firmware version: NXP4.76
System Software requirement: NXPV191
Released to field: 14.4.2016
Used in production: -
Changes in new application:

- PMSM selection did not automatically set related parameters, fixed.
- Limited user possibility to change parameters in certain cases.



APFIFF40V059

Replaced Application: APFIFF40V058
Used Firmware version: NXP4.76
System Software requirement: NXPV191
Released to field: -
Used in production: -
Changes in new application:

- Firmware updated, system software requirement NXPV191.
- 4 mA fault monitoring did not work correctly, fixed.
- Added "V: Step Frequency" for Speed Controller tuning. Used together with V: Step Response".
- **Compatibility Issue:** Over Speed Fault, F84 Speed Protection, is by default fault by coasting. Limit for the fault is 120 rpm.



APFIFF40V058

Replaced Application: APFIFF40V055
Used Firmware version: NXP4.74
System Software requirement: NXPV188
Released to field: 1.4.2015
Used in production: -
Changes in new application:

- Torque reference interpolator had wrong time constant, fixed.
- Added software over speed protection function.
- Added prohibited direction digital inputs.
- Fieldbus fault functionality improvements.



APFIFF40V055

Replaced Application: APFIFF40V053
Used Firmware version: NXP4.74
System Software requirement: NXPV188
Released to field: 1.4.2015
Used in production: -
Changes in new application:

- Added Fault Word 10 and Warning Word 10
- PT100 board two temperatures were taken on power up from board 1 for one cycle, fixed.
- Frequency reference was not limited correctly to reverse direction. Was limited by positive limit if smaller than negative direction limit.



APFIFF40V053

Replaced Application: APFIFF40V050
Used Firmware version: NXP4.74
System Software requirement: NXPV188
Released to field: 1.10.2014
Used in production: -
Changes in new application:

- Reference selection logic changed to structure text.
 - If problems noticed in operation, previous code can be activated with Control Options 2 B8 (+256).
- P2.14.5.1 ID.Bit Free DO has same ID number same as P2.5.6.6, Fixed.
 - **Compatibility Issue:** P2.14.5.1 ID is now 1217
- Damping Activation Frequency unit was %, fixed to Hz.
- Damping Frequency format was 52 (50,00 Hz), fixed to 61 (50,0 Hz).
- P2.14.5.1 ID.Bit Free DO has wrong max limit and format, fixed.
- Torque Step handled now at 1 ms time level.



APFIFF40V050

Replaced Application: APFIFF40V044
Used Firmware version: NXP4.74
System Software requirement: NXPV188
Used in production: -
Changes in new application:

- Start-Up Wizard disabled.
- Added Motor Current Limit Ki and Ti
- PMSM selection will set
 - Switching Frequency to 3,6 kHz if higher.
 - Modulator type to 1 if 0
- Thermistor fault F29 added to Fault Word 1
- 4 mA fault added to Fault Word 1
- Converter to Vacon Programming.



APFIFF40V044

Replaced Application: APFIFF40V043

Used Firmware version: NXP4.74

System Software requirement: NXPV187

Used in production: -

Changes in new application:

- When magnetization current was given before identification run, U/f curve were supposed to set accordingly. This was not happening, Magnetization current were replaced with estimated magnetization current, fixed.
- Default switching frequency limited to 3,6 kHz.
- Added identification selection for locked rotor when using absolute encoder.



APFIFF40V043

Replaced Application: APFIFF40V042

Used Firmware version: NXP4.74

System Software requirement: NXPV187

Used in production: -

Changes in new application:

- RPM conversion to Hz was handled in special task (executed only when change is made from keypad or from NCDrive). These are now moved to 1000 ms and 100 ms cyclic tasks to support changes using FB Process Data inputs.
- More accurate FBActualSpeed when operating in open loop control. Certain speed levels had error in FBActualSpeed signal when using high pole pair motors. Motor real speed was correct in these cases.



APFIFF40V042

Replaced Application: APFIFF40V039

Used Firmware version: NXP4.69

System Software requirement: NXPV185

Used in production: -

Changes in new application:

- Torque Step was limited to 30,00 % (300,0), fixed to 300,00 when torque scale 10000 is used.
- Torque Step and Speed Step handling moved from 20 ms time level to 5 ms time level.
- S-ramps by default zero
- PT100 selection for slip compensation did not reset internal temperature compensation function, fixed.
- Added Quick Stop derivate monitoring delay 100 ms.
- Quick stop monitoring functions can now be selected P2.3.13.7.



APFIFF40V039

Replaced Application: APFIFF40V038

System Software requirement: NXPV185

Used in production: -

Changes in new application:

- Status Word (ID43) B14 was not final brake release command. FB Brake Command and ID Run affects were not included, fixed.
- If drive was started while Stop Zero Speed time, brake mechanical delay parameter was not used, fixed.



APFIFF40V038

Replaced Application: APFIFF40V037

System Software requirement: NXPV185

Used in production: -

Changes in new application:

- In Closed Loop control speed was released before Flux was above 95 %, fixed.



APFIFF40V037

Replaced Application: APFIFF40V035
System Software requirement: NXPV185
Used in production: March. 2013
Changes in new application:

- AO Selection 19 was missing, added.
- Quick stop selections 2 and 3 in open loop made normal ramp stop, fixed.
- Added Quick Stop 4: Will set also SPC to Torque limit
- Added Quick Stop 5: Will use ramp stop but with quick stop P and T limits (SPC also).
- When Brake Chopper was used there were 10 ms time when generator torque limit may have been taken from motoring torque limit.
- RPM To Hz special task also run when motor nominal speed and frequency is changed.
- Added Process Frequency parameter, used when high Process Speed is needed (> 6500rpm).
- Added fast reference functionality for speed and torque. See details from manual: Control Slot Selector.



APFIFF40V035

Replaced Application: APFIFF10
System Software requirement: NXPV185
Used in production: Feb. 2013
Changes in new application:

- This application replaces SIA application APFIFF10
- V035 is first version that has been field tested