

Addendum valid for Emotron VFX/FDU 2.1 AC drives software version V5.12

This Addendum applies to manuals 01-7491-0Xr1 for FDU 2.1 and 01-7492-0Xr1 for VFX 2.1.

New and changed menus

Table 1 New menus

New menus in sw V5.12
CP Units [21E]
CP Unit Torq [21E1]
CP Unit Pow [21E2]
CP Unit Temp [21E3]
EncOvverrule [22G4]
AnInFlt Set [247]
Autores Ctrl [251]
Autores Enb [2512]
FTP Server [2656]
WEB Server [2657]
Torque Ramp [356]
EmoDedicPump [390]
MastChNoRamp [391Q]
PumpCleaning [392]
PC Enable [3921]
PC Allow [3922]
PC Trigger [392A]
Force [392A1]
EachStart [392A2]
LoadMonMarg [392A3]
LMTrigDelay [392A4]
RunTime [392A5]
Interval [392A6]
Weekday [392A7]
StartTime [392A8]
StartDate [392A9]
PC Phase 1 [392B]
Ph1 Time [392B1]
Ph1 RefSpd [392B2]
Ph1 AccTime [392B3]
Ph1 DecTime [392B4]
PC Phase 2 [392C]
Ph2 Time [392C1]
Ph2 RefSpd [392C2]

Table 1 New menus

New menus in sw V5.12
Ph2 AccTime [392C3]
Ph2 DecTime [392C4]
PC Phase 3 [392D]
Ph3 Time [392D1]
Ph3 RefSpd [392D2]
Ph3 AccTime [392D3]
Ph3 DecTime [392D4]
PC MaxAttmpt [392E]
PC Status [392F]
State [392F1]
AttmptCnt [392F2]
ResetCnt [392F3]
TotCnt [392F4]
TotCntSince [392F5]
TotCntReset [392F6]
AnIn FltRef [51D2]
AnIn Reset [51D3]

Table 2 Menus with new menu numbers

Menu number sw V5.10	Menu number sw V5.12	Menu name
251	2511	No of Trips
390	391	Pump/Fan Ctl
391	3911	Pump enable
392	3912	No of Drives
393	3913	Select Drive
394	3914	Change Cond
395	3915	Change Timer
396	3916	Drives on Ch
397	3917	Upper Band
398	3918	Lower Band
399	3919	Start Delay
39A	391A	Stop Delay
39B	391B	Upp Band Lim
39C	391C	Low Band Lim



Table 2 Menus with new menu numbers

Menu number sw V5.10	Menu number sw V5.12	Menu name
39D	391D	Settle Start
39E	391E	TransS Start
39F	391F	Settle Stop
39G	391G	TransS Stop
39H	391H	Run Time 1
39H1	391H1	Rst Run Tm1
39I	391I	Run Time 2
39I1	391I1	Rst Run Tm2
39J	391J	Run Time 3
39J1	391J1	Rst Run Tm3
39K	391K	Run Time 4
39K1	391K1	Rst Run Tm4
39L	391L	Run Time 5
39L1	391L1	Rst Run Tm5
39M	391M	Run Time 6
39M1	391M1	Rst Run Tm6
39N	391N	Pump 123456
39P	391P	No of Backup

Table 5 Menus with new selections

Menu sw V5.12	New selections
Encoder [22B]	New selections “Off Inverted” and “On Inverted”. These selections changes the sign of the inverter signal.
DigIn 1 [521]	New selections “PumpCITrig” and “PumpCIBlock” related to pump cleaning.
AnOut1 Fc [531]	New selections “PT100_1”, “PT100_2”, “PT100_3”
DigOut1 [541]	New selections “Option 1”, “Option 2”, “Option 3”, “PumpCIAct” and “PumpCIReq”.
CA1 Value [6111]	New selections “Speed Ref” and “Torque Ref”.
Warning [722]	New error messages “MaxPumpClean” and “Option 2”.

Table 3 Deleted menus

Menu number sw V5.10	Menu name	Menu in sw V5.12
6513	Timer 1 Delay	-
6523	Timer 2 Delay	-
6533	Timer 3 Delay	-
6543	Timer 4 Delay	-

Table 4 Changed menu names

Menu number	Menu sw V5.12	Menu sw V5.10
51D	AnIn Fault	AI Flt Mode
6514	Timer1 T1/D	Timer1 T1
6524	Timer2 T1/D	Timer2 T1
6534	Timer3 T1/D	Timer3 T1
6544	Timer4 T1/D	Timer4 T1



7.6 Emotron Dedicated Pump [390]

7.7 Pump and fan control [391]

See FDU 2.1 manual 01-7491-0Xr1 for more information about this menu.

7.8 Pump cleaning [392]

The pumps can get clogged when pumping waste water, that includes various materials. Problems either emerge from gradual buildup of small fibers on the impeller or bigger objects, like rags, that get stuck in the pump. Often these objects can be cleaned from the pump by reversing it if done in time.

NOTE: Before turning this feature on, make sure that the installation can handle running the pump in reverse direction. Not all pumps or all configurations can operate in the opposite direction. Please check with the pump manufacturer.

Pump cleaning is a function which reverses the motor speed for a short time in order to remove dirt and obstacles in the pump. The pump cleaning function is enabled/disabled by menu [3921].

When triggered, the function does the following:

1. Motor decelerates/accelerates according to the settings in menus [392B4] and [392B3], until speed set in menu [392B2] is reached.
2. Motor runs for [392B1] seconds at this speed.
3. Steps (1) and (2) are repeated two more times according to the settings for phase 2 and 3 in menus [392C] and [392D]. Phases can be skipped by setting the phase time to 0 s.

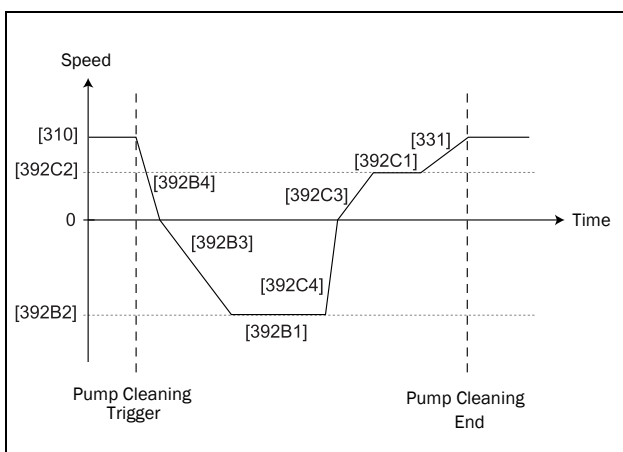


Fig. 1 Example pump cleaning run with two phases (menu Ph3 Time [392D1] set to Off).

Pump cleaning can be triggered by the following sources:

1. Manual trigger by setting menu [392A1] to "On".
2. Digital input configured as "PumpClTrig".
3. At each start by setting menu [392A2] to "On".
4. At the run time interval configured in menu [392A5].
5. Weekly cleaning schedule by configuring the weekly interval in menu [392A6], which weekdays to run in menu [392A7] and the start time in menu [392A8]. Menu [392A9] can be set to the initial start date of the schedule, after which its value is updated to show the date of the next scheduled pump cleaning.
6. Automatic detection by load monitor.

Pump cleaning is blocked by the following sources:

1. When "Pump/Fan Ctl" [3911] is set to "On"
2. Manual block by setting menu [3922] to "Off".
3. Digital input configured as "PumpClBlock".
4. During jog.
5. When drive is in torque mode.

7.8.1 Load monitor - automatic detection

The load monitor can be used to automatically detect clogging of the pump to resolve the problem automatically without the need for costly manual maintenance. In addition it is often vital to detect clogging problems early; otherwise pump cleaning by reversing the pump will have little effect.

Pump cleaning is triggered by the load monitor when the load torque is greater than [41B] (normal load) + [392A3] (LoadMonMarg) for [392A4] seconds.

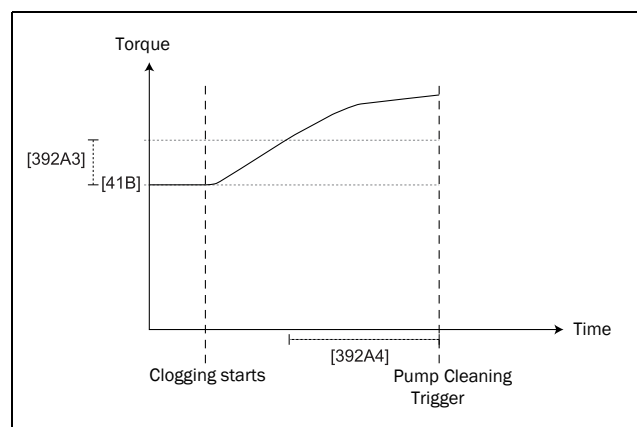


Fig. 2 Pump cleaning triggers on automatic load monitor detection.



If the problem persists after a finished cleaning the cleaning operation may trigger again up to a maximum of [392E] attempts.

The drive signals a trip or warning depending on menu [3921] once the maximum number of cleaning attempts has been reached.

7.8.2 Different ways a pump can get clogged

In the case of fibre buildup the initial sign of a partially clogged impeller is slightly lower power usage and a reduced amount of pumped water. Fluctuations in current might be present, emerging from one or more clogged vanes. At this stage the dirt can often be flushed out of the pump by reversing the pump for a short while. If the pump is not cleaned at this stage additional buildup will result in further decreased efficiency. In the final stage the pump accumulates dirt to a point where pumping stops and energy will be consumed in internal friction losses. Generally this requires even more energy than normal operation. At this stage the pump cannot be cleaned by reversing and manual maintenance is required.

Should a rug or other bigger objects get stuck in the pump the load will increase significantly quite swiftly. Such objects are often only stuck for a short period of time and then flushed away without any action taken. Pump cleaning can be avoided for these types of objects by setting an appropriate load monitor trigger delay [392A4].

11.2.1 Operation

CP Units [21E]

Menus to select control panel units.

CP Unit torque [21E1]

Torque unit selection used by the control panel.

21E1		CP Unit Torq
Default:		Nm
Nm	0	Newton meter is selected.
LbfFt	1	Pound foot is selected.

CP Unit Power [21E2]

Power unit selection used by the control panel.

21E2		CP Unit Pow
Default:		W
W	0	Watt is selected.
hp	1	Horse power is selected.

CP Unit temperature [21E3]

Temperature unit selection used by the control panel.

21E3		CP Unit Temp
Default:		°C
°C	0	Celsius is selected.
°F	1	Fahrenheit is selected.



11.2.2 Motor Data [220]

Encoder Feedback [22B]

Only visible if the Encoder option board is installed. This parameter enables or disables the encoder feedback from the motor to the AC drive. The parameter makes it possible to change sign of the measured speed if the encoder signal is inverted.

22B Encoder		
Default:		Off
Off	0	Encoder feedback disabled.
On	1	Encoder feedback enabled.
Off Inverted	2	Encoder feedback disabled. Change sign of the speed measured by the encoder.
On inverted	3	Encoder feedback enabled. Change sign of the speed measured by the encoder.

Encoder fault and speed monitoring [22G]

EncoderOverrule [22G4]

The selection “On” disables encoder and keeps running with observer, if reading unexpectedly few pulses. Ignores comm and pulse detection trips when enabled.

22G4 EncOverrule		
Default:		Off
Off	0	Encoder overrule disabled.
On	1	Disables encoder and keeps running with observer, if reading unexpectedly few pulses.

11.2.4 Parameter Set Handling [240]

AnInFlt Set [247]

Parameter set to change to upon losing AnIn reference signal if AnIn FltMode [51D1] is set to “Change PSet”.

247 AnInFlt Set		
Default:		Keep last
A	0	Data from parameter set A is loaded.
B	1	Data from parameter set B is loaded.
C	2	Data from parameter set C is loaded.
D	3	Data from parameter set D is loaded.
DigIn	4	Parameter set is selected via a digital input. Define which digital input in menu [520] Digital inputs.
Keep last	5	Do not change parameter set.

11.2.5 Trip Autoreset/Trip Conditions [250]

Autoreset Control [251]

Number of Trips [2511]

Any number set above 0 activates the Autoreset. This means that after a trip, the AC drive restarts automatically according to the number of attempts selected. No restart attempts takes place unless all conditions are normal.

If the Autoreset counter (not visible) is greater than the selected number of attempts, the Autoreset cycle is interrupted. No Autoreset then takes place.

If there are no trips for more than 10 minutes, the Autoreset counter decreases by one.

If the maximum number of trips has been reached, the trip message hour counter (8x0 menu) is marked with an "A". Trips can be reset with a normal reset, but to re-activate the auto-reset functionality the auto-reset counter must be reset. This is done by de-activating the always high remote-reset input and then activating it again.

Example:

- Number of allowed autoreset attempts [251]= 5.
- Within 10 minutes 6 trips occur.
- At the 6th trip there is no autoreset, because the autoreset counter is set to allow only 5 attempts to autoreset a trip.
- To reset the autoreset counter, de-activate the always high remote-reset input and then activate it again.
- The autoreset counter is now zero.

2511 No of Trips	
Default:	0 (no Autoreset)
Range:	0–10 attempts

NOTE: An auto reset is delayed by the remaining ramp time.

Enable Autoreset [2512]

The selection “On” enables the auto-reset function without an active digital reset signal. This makes it possible to use the auto-reset function without connecting a digital reset signal.

2512 Autores Enb		
Default:		DigIn
DigIn	0	Digital reset signal.
On	1	Enables the auto-reset function.



Ethernet [265]

NOTE: To reach a higher level of cybersecurity according to EU's Directive NIS2, IEC 62443-4-1 the menus [2656] FTP Server and menu [2657] WEB Server may be used to disable FTP and WEB servers for Industrial Ethernet bus options.

FTP Server [2656]

Enable/disable access to FTP server for cybersecurity reasons.

2656 FTP Server		
Default:		Off
Off	0	
On	1	

WEB Server [2657]

Enable/disable access to WEB server for cybersecurity reasons.

2657 WEB Server		
Default:		Off
Off	0	
On	1	

11.3.6 Torques [350]

Torque Ramp [356]

NOTE: This menu is only valid for VFX drives.

Torque ramp time when using the Speed PI controller. The torque ramp provides a smoother torque response.

356 Torque Ramp	
Default:	Off
Range:	0.01 s - 30.00 s (Off=0.00 s)

11.3.10 Emotron Dedicated Pump [390]

390	EmoDedicPump
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Pump Cleaning [392]

Pumps can be clogged. Such problems either emerge from gradual buildup of small fibers on the impeller or bigger objects being stuck in the pump. Often these objects can be cleaned from the pump by interrupting normal control to run the pump for a short period of time in high reverse speed and then for a short while in high forward speed.

NOTE: Pump cleaning is blocked if menu Pump Enable [3911] is set to "On".

Pump Cleaning enable [3921]

NOTE: Make sure that reverse pump operation is supported before activating the function.

This menu enables pump cleaning.

3921 PC Enable		
Default:		Off
Off	0	Disables pump cleaning and pump cleaning is aborted if set to "Off" during pump cleaning.
On-Warn	1	Enables pump cleaning. Triggers a warning upon reaching max pump cleaning attempts.
On-Trip	2	Enables pump cleaning. Trips upon reaching max pump cleaning attempts.

Pump Cleaning allow [3922]

Allows pump cleaning if triggered.

3922 PC Allow		
Default:		On
Off	0	Pump cleaning is not allowed.
On	1	Allows pump cleaning.
Once	2	"Once" is reset to "Off" when a pump cleaning has started.

NOTE: Pump cleaning is blocked if menu PC Allow [3922] is set to "Off".



Pump Cleaning Trigger [392A]

392A PC Trigger

Force [392A1]

Force pump cleaning can be selected from this menu. The force signal is reset to “Off” when the pump cleaning starts.

392A1 Force		
Default:		Off
Off	0	
On	1	

Each Start [392A2]

Request pump cleaning at each start.

392A2 EachStart		
Default:		Off
Off	0	
On	1	

Load Monitor Marg [392A3]

Request pump cleaning each time the load exceeds normal load (as set in menu [41B]) + LoadMonMarg.

392A3 LoadMonMarg	
Default:	Off
Range:	Off, 1 % - 400 % (Off=0)

Load monitor Trig delay [392A4]

Time above load monitor threshold before requesting pump cleaning.

392A4 LMTrigDelay	
Default:	0.1 s
Range:	0-90 s

Runtime [392A5]

Periodic pump cleaning based on runtime. The period timer is reset when cleaning starts independent of trigger or if motor is stopped.

392A5 RunTime	
Default:	Off
Range:	Off, 1-876 h (Off=0)

Interval [392A6]

Weeks between repeated weekly schedule.

392A6 Interval	
Default:	Off
Range:	Off, 1-63 weeks (Off=0)

Weekday [392A7]

Weekdays to schedule pump cleaning.

The deactivated weekdays are replaced by a dash mark “-” (e.g. “MTWTF - -”).

329A7 Weekday	
Default:	----- (none activated)
Range:	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday.

Start time [392A8]

Time to run scheduled pump cleaning.

392A8 StartTime	
Default:	00:00:00 (hh:mm:ss)
Range:	0:00:00-23:59:59

Start date [392A9]

Date for next scheduled pump cleaning.

392A9 StartDate	
Default:	2000-00-00 (year-month-day)

Pump Cleaning Phase 1 [392B]

392B PC Phase1

Phase 1 Time [392B1]

This phase is skipped if set to “Off”.

392B1 Ph1 Time	
Default:	10 s
Range:	Off, 1-600 s (Off=0)

Phase 1 Reference speed [392B2]

Reference speed, in percent of max speed, used during Phase 1.

392B2 Ph1 RefSpd	
Default:	-100 %
Range:	-100 % - 100 %



Phase 1 Acceleration time [392B3]

Acceleration time (time it would take from 0 to nominal rpm) used for phase 1.

392B3 Ph1 AccTime	
Default:	Off (standard)
Range:	0.1 s - 3600 s (Off=0)

Phase 1 Deceleration time [392B4]

Deceleration time (time it would take from nominal to 0 rpm) used for phase 1.

392B4 Ph1 DecTime	
Default:	Off (standard)
Range:	0.1 s - 3600 s (Off=0)

Pump Cleaning Phase 2 [392C]

See menus for Pump cleaning Phase 1 [392B].
See chapter 15 Menu list for defaults.
Selections in the menus [392C] are valid for phase 2.

Pump Cleaning Phase 3 [392D]

See menus for Pump cleaning Phase 1 [392B].
See chapter 15 Menu list for defaults.
Selections in the menus [392D] are valid for phase 3.

Number of pump cleaning attempts [392E]

Number of cleaning attempts before warning/trip. The drive should give a "MaxPumpClean" warning or trip, depending on PC Enable [3921], when initiating pump cleaning if AttemptCnt [392F2] is equal to this value.

392E PC MaxAttmpt	
Default:	8
Range:	Off, 1-15 (Off=0, no limit)

Pump cleaning status [392F]

Shows the current pump cleaning state.

392F PC Status	
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State [392F1]

392F1 State		
Default:		Off
Off	0	Pump cleaning is not running.
Requested	1	Pump cleaning is requested but not allowed to run.
Active	2	Pump cleaning is running.

Pump cleaning attempts [392F2]

Counter of pump cleaning attempts. The counter is incremented at the start of each cleaning event. The counter is decremented (if greater than zero) each 15 minutes without a cleaning event. Counter is resettable from menu ResetCnt [392F3].

392F2 AttemptCnt	
Range:	0-15

Reset of pump cleaning attempts [392F3]

Resets AttmptCnt [392F2] to 0 upon selecting "Yes".

392F3 ResetCnt		
No	0	
Yes	1	

Total pump cleaning attempts [392F4]

Counter of total pump cleaning attempts. The counter is incremented at the start of each cleaning event. Does not decrement. User resettable from menu TotCntReset [392F6].

392F4 TotCnt	
Range:	0 - 65535

Total hours since last reset [392F5]

Hours since TotCnt [392F4] was last reset.

392F5 TotCntSince	
Range:	0 - 65535 h

Total conter reset [392F6]

Resets TotCnt [392F4] to 0 upon selecting "Yes".

392F6 TotCntReset		
No	0	
Yes	1	



AnIn Fault [51D]

AnIn Fault Mode [51D1]

Behaviour of drive upon losing analog input signal.

51D1 AnIn FltMode		
Default:		Off
Off	0	No analog input supervision
Trip	1	The AC drive trips if the analog input signal is below 75% of the configured minimum value.
Warning	2	The AC drive gives a warning if the analog input signal is below 75% of the configured minimum value.
Change Pset	3	Pset is changed according to menu AnInFlt Set [247], It stays in the new Pset until it resets from menu AnIn Reset [51D3] or if this setting is changed to other than "Change Pset".
Const Ref	4	Reference value is set according to menu AnIn FltRef [51D2].
Last Ref	5	The drive attempts to retain the previous analog signal value.

AnIn FltRef [51D2]

Reference value used upon losing AnIn signal when AnIn FltMode [51D1] is set to "Const Ref".

51D2 AnIn FltRef	
Default:	0 %
Range:	0-100 %

AnIn Reset [51D3]

When menu [51D1] AnIn FltMode is set to "Change Pset", select "Yes" in this menu (after fixing AnIn signal) to allow the drive to revert to the original Pset.

51D3 AnIn Reset		
No	0	
Yes	1	

11.5.2 Digital Inputs [520]

Digital Input 1 [521]

521 DigIn 1		
Default:		RunL
PumpClTrig	39	Requests a pump cleaning.
PumpCl Block	40	Blocks pump cleaning from starting.

11.5.3 Analogue Outputs [530]

AnOut1 Function [531]

531 AnOut1 Fc		
Default:		Speed
PT100_1	20	Range 0-100 °C
PT100_2	21	Range 0-100 °C
PT100_3	22	Range 0-100 °C

11.5.4 Digital Outputs [540]

Digital Out 1 [541]

541 DigOut 1		
Default:		Ready
Option 1	111	Usage configurable by option software.
Option 2	112	Usage configurable by option software.
Option 3	113	Usage configurable by option software.
PumpClAct	114	Pump cleaning is active.
PumpClReq	115	Pump cleaning has been requested, but is not yet active.

Analogue Comparator 1 Setup [611]

Analogue Comparator 1 Value [6111]

6111 CA1 Value		
Default:		Speed
Speed Ref	27	rpm
Torque Ref	28	%



Timers [650]

TimerX T1/Delay [65X4]

This menu is only visible when timer mode is active (not off). If the timer mode is delay, then this menu sets the timer delay. It sets the timer time in other timer modes. This menu can only be edited as described in manuals 01-7491-0Xr1 for FDU 2.1 and 01-7492-0Xr1 for VFX 2.1 (see “chapter 10. Operating via the Control Panel”, section “10.5 Editing values in a menu”, alternative 2).

65X4 TimerX T1/D	
Default:	0 s
Range:	0 - 36000.0 s

11.7.2 Status [720]

Warning [722]

Display the actual or last warning condition. A warning occurs if the AC drive is close to a trip condition but still in operation. During a warning condition the red trip LED starts to blink as long as the warning is active.

Communication integer value	Warning message **
36	MaxPumpClean
37	Option 2

* Warning messages ExtTrip1 - ExtTrip4 are configurable in menu [430].

See also chapter 12.

** This warning parameter is also represented in the standard process data message packed into a 5-bit field, see table 64 in the Fieldbus Option manual.

If there is a need to explicitly decode a warning or trip information over bus, then menu [722] Warning with Modbus register 31016 may be mapped to any additional process value of your choice (see Fieldbus option manual chapter 5.2.2.4).

14.6 Environmental conditions

Table 64 Operation

Parameter	Normal operation
Contamination, according to IEC 60721-3-3	No electrically conductive dust allowed. Cooling air must be clean and free from corrosive materials. Chemical gases, class 3C3 (coated boards standard). Solid particles, class 3S2.



15. Menu list

Menu Parameters		Default settings	Modbus Instance/ Device Net No.	Profibus slot/index	EtherCAT index (HEX)	Profinet index	Fieldbus format	Modbus format	Notes
21E	CP Units								
21E1	CP Unit Torq	Nm	43383	170/32	4D37	19767	UInt	UInt	
21E2	CP Unit Pow	W	43384	170/33	4D38	19768	UInt	UInt	
21E3	CP Unit Temp	°C	43385	170/34	4D39	19769	UInt	UInt	
22B	Encoder	Off	43051	168/210	4BEB	19435	UInt	UInt	
22G4	EncOvrrule	Off	43068	168/227	4BFC	19452	UInt	UInt	
247	AnInFit Set	Keep last	42654	167/68	4A5E	19038	UInt	UInt	
251	Autores Ctrl								
2511	No of Trips	0	43071	168/230	4BFF	19455	UInt, 1=1	UInt	
2512	Autores Enb	DigIn	43069	168/228	4BFD	19453	UInt	UInt	
2656	FTP Server	Off	42720	167/134	4AA0	19104	UInt	UInt	
2657	WEB Server	Off	42721	167/135	4AA1	19105	UInt	UInt	
356	Torque Ramp	Off	43146	169/50	4C4A	19530	UInt, 1=0.01s	UInt	
390	EmoDedic Pump								
391	Pump/Fan CIt								
3911	Pump enable	Off	43161	169/65	4C59	19545	UInt	UInt	
3912	No of Drives	2	43162	169/66	4C5A	19546	UInt, 1=1	UInt	
3913	Select Drive	Sequence	43163	169/67	4C5B	19547	UInt	UInt	
3914	Change Cond	Both	43164	169/68	4C5C	19548	UInt	UInt	
3915	Change Timer	50h	43165	169/69	4C5D	19549	UInt, 1=1h	UInt	
3916	Drives on Ch	0	43166	169/70	4C5E	19550	UInt, 1=1	UInt	
3917	Upper Band	10%	43167	169/71	4C5F	19551	Long, 1=1%	EInt	
3918	Lower Band	10%	43168	169/72	4C60	19552	Long, 1=1%	EInt	
3919	Start Delay	0s	43169	169/73	4C61	19553	Long, 1=1s	EInt	
391A	Stop Delay	0s	43170	169/74	4C62	19554	Long, 1=1s	EInt	
391B	Upp Band Lim	0%	43171	169/75	4C63	19555	Long, 1=1%	EInt	
391C	Low Band Lim	0%	43172	169/76	4C64	19556	Long, 1=1%	EInt	
391D	Settle Start	0s	43173	169/77	4C65	19557	Long, 1=1s	EInt	
391E	TransS Start	60%	43174	169/78	4C66	19558	Long, 1=1%	EInt	
391F	Settle Stop	0s	43175	169/79	4C67	19559	Long, 1=1s	EInt	
391G	TransS Stop	60%	43176	169/80	4C68	19560	Long, 1=1%	EInt	
391H	Run Time 1		31051	121/195	241B	1051	Long, 1=1h	EInt	
			31052	121/196	241C	1052	Long, 1=1m	EInt	
			31053	121/197	241D	1053	Long, 1=1s	EInt	
391H1	Rst Run Tm1	No	38	0/37	2026	38	UInt	UInt	



Menu Parameters		Default settings	Modbus Instance/ Device Net No.	Profibus slot/index	EtherCAT index (HEX)	Profinet index	Fieldbus format	Modbus format	Notes
391I	Run Time 2		31054	121/198	241E	1054	Long, 1=1h	EInt	
			31055	121/199	241F	1055	Long, 1=1m	EInt	
			31056	121/200	2420	1056	Long, 1=1s	EInt	
391I1	Rst Run Tm2	No	39	0/38	2027	39	UInt	UInt	
391J	Run Time 3		31057	121/201	2421	1057	Long, 1=1h	EInt	
			31058	121/202	2422	1058	Long, 1=1m	EInt	
			31059	121/203	2423	1059	Long, 1=1s	EInt	
391J1	Rst Run Tm3	No	40	0/39	2028	40	UInt	UInt	
391K	Run Time 4		31060	121/204	2424	1060	Long, 1=1h	EInt	
			31061	121/205	2425	1061	Long, 1=1m	EInt	
			31062	121/206	2426	1062	Long, 1=1s	EInt	
391K1	Rst Run Tm4	No	41	0/40	2029	41	UInt	UInt	
391L	Run Time 5		31063	121/207	2427	1063	Long, 1=1h	EInt	
			31064	121/208	2428	1064	Long, 1=1m	EInt	
			31065	121/209	2429	1065	Long, 1=1s	EInt	
391L1	Rst Run Tm5	No	42	0/41	202A	42	UInt	UInt	
391M	Run Time 6		31066	121/210	242A	1066	Long, 1=1h	EInt	
			31067	121/211	242B	1067	Long, 1=1m	EInt	
			31068	121/212	242C	1068	Long, 1=1s	EInt	
391M1	Rst Run Tm6	No	43	0/42	202B	43	UInt	UInt	
391N	Pump 123456		31069	121/213	242D	1069	UInt, 1=1	UInt	
391P	No of Backup	0	43177	169/81	4C69	19561	UInt, 1=1	UInt	
391Q	MstChNoRamp	Off	43178	169/82	4C6A	19562	UInt	UInt	
392	PumpCleaning								
3921	PC Enable	Off	43701	171/95	4E75	20085	UInt	UInt	
3922	PC Allow	On	43702	171/96	4E76	20086	UInt	UInt	
392A	PC Trigger								
392A1	Force	Off	42898	168/57	4B52	19282	UInt	UInt	
392A2	EachStart	Off	43703	171/97	4E77	20087	UInt	UInt	
392A3	LoadMonMarg	Off	43704	171/98	4E78	20088	Long, 1=1%	EInt	
392A4	LMTrigDelay	0.1 s	43705	171/99	4E79	20089	Long, 1=0.1s	EInt	
392A5	RunTime	Off	43706	171/100	4E7A	20090	UInt, 1=1h	UInt	
392A6	Interval	Off	43707	171/101	4E7B	20091	UInt, 1=1weeks	UInt	
392A7	Weekday	-----	43708	171/102	4E7C	20092	Long, 1=1	EInt	
392A8	StartTime	00:00:00	43709	171/103	4E7D	20093	Long, 1=1h	EInt	
			43710	171/104	4E7E	20094	Long, 1=1m	EInt	
			43711	171/105	4E7F	20095	Long, 1=1s	EInt	



Menu Parameters		Default settings	Modbus Instance/ Device Net No.	Profibus slot/index	EtherCAT index (HEX)	Profinet index	Fieldbus format	Modbus format	Notes
392A9	StartDate	2000-00-00	43712	171/106	4E80	20096	Long, 1=1y	EInt	
			43713	171/107	4E81	20097	Long, 1=1m	EInt	
			43714	171/108	4E82	20098	Long, 1=1d	EInt	
392B	PC Phase 1								
392B1	Ph1 Time	10 s	43715	171/109	4E83	20099	ULnt, 1=1s	ULnt	
392B2	Ph1 RefSpd	-100 %	43716	171/110	4E84	20100	Int, 1=1%	Int	
392B3	Ph1 AccTime	Off	43717	171/111	4E85	20101	Long, 1=0.1s	EInt	
392B4	Ph 1DecTime	Off	43718	171/112	4E86	20102	Long, 1=0.1s	EInt	
392C	PC Phase 2								
392C1	Ph2 Time	10 s	43719	171/113	4E87	20103	ULnt, 1=1s	ULnt	
392C2	Ph2 RefSpd	100 %	43720	171/114	4E88	20104	Int, 1=1%	Int	
392C3	Ph2 AccTime	Off	43721	171/115	4E89	20105	Long, 1=0.1s	EInt	
392C4	Ph2 DecTime	Off	43722	171/116	4E8A	20106	Long, 1=0.1s	EInt	
392D	PC Phase 3								
392D1	Ph3 Time	Off	43723	171/117	4E8B	20107	ULnt, 1=1s	ULnt	
392D2	Ph3 RefSpd	50 %	43724	171/118	4E8C	20108	Int, 1=1%	Int	
392D3	Ph3 AccTime	Off	43725	171/119	4E8D	20109	Long, 1=0.1s	EInt	
392D4	Ph3 DecTime	Off	43726	171/120	4E8E	20110	Long, 1=0.1s	EInt	
392E	PC MaxAtmpt	8	43727	171/121	4E8F	20111	ULnt, 1=1	ULnt	
392F	PC Status								
392F1	State	Off	31075	121/219	2433	1075	ULnt	ULnt	
392F2	AtmptCnt		31076	121/220	2434	1076	ULnt, 1=1	ULnt	
392F3	ResetCnt	No	12	0/11	200C	12	ULnt	ULnt	
392F4	TotCnt		31077	121/221	2435	1077	ULnt, 1=1	ULnt	
392F5	TotCntSince		31078	121/222	2436	1078	ULnt, 1=1h	ULnt	
392F6	TotCntReset	No	13	0/12	200D	13	ULnt	ULnt	
51D	AnIn Fault								
51D1	AnIn FltMode	Off	42859	168/18	4B2B	19243	ULnt	ULnt	
51D2	AnIn FltRef	0 %	42860	168/19	4B2C	19244	ULnt, 1=1%	ULnt	
51D3	AnIn Reset	No	14	0/13	200E	14	ULnt	ULnt	
6514	Timer1 T1/D	0 s	43603	170/252	4E13	19987	Long, 1=0.1s	EInt	
6524	Timer2 T1/D	0 s	43609	171/3	4E19	19993	Long, 1=0.1s	EInt	
6534	Timer3 T1/D	0 s	43615	171/9	4E1F	19999	Long, 1=0.1s	EInt	
6544	Timer4 T1/D	0 s	43621	171/15	4E25	20005	Long, 1=0.1s	EInt	

