Manual

Application for configuring the EIM 316/336 using MMIMyK

Type EIM 316/336 interface

This application allows the user to configure the EIM316/336 parameters and display settings and readouts. In addition it supports a manual control mode to enable direct control of the valve opening degree.

Features

- Configure EIM parameter
- Display setting
- Read out of status and parameters
- Manual control of the valve

Contents

2. References

MyK Manager	http://www.danfoss.com/MCX (A password and login are needed in order to download the application)
MMIMyK Instruction	http://dila.danfoss.net/literature/dkrc/AC-E-IT_MMIMYK_DKRCC.PI.RJ0.B1.1U_520H5326_Low.pdf
MMIMyK software download guide	http://dila.danfoss.net/literature/dkrc/AC-E-IT_MMIMYKSwDownload-Guide_DKRCC.PS.RJ0.B1.02_520H5547_Low.pdf
MMIMyK Manual	http://dila.danfoss.net/literature/dkrc/ITDE_GD_MMIMYK_RS8FP202_EN.pdf

3. Loading the application into the MyK

There are two ways to load the application into the MyK. The first is to use the MyKManager program which lets you easily connect to the MyK (please refer to the MMIMyK software download guide). The other is to manually copy the files onto a SD/MMC card and inserting this card into the MyK.

3.1 MyKManager

Start the MyKManager program on the PC, and connect the MyK to the PC using the USB cable. The screen displays the available drives in the MyK, where drive 0:/ is the MyK's own internal memory, and drive 1:/ is the external memory (SD/MMC card). If no SD/MMC card is mounted, only drive 0:/ is displayed.

Create a folder on either the internal or external drive, by right-clicking on the drive's name and selecting "New folder". The name of the folder must be 8 characters or less. Then import the two files by right-clicking on the folder and selecting "import files". Browse to the two files (app.pk and mmimyk.cfg), select them and click "import". The MyKManager program can now be closed.

3.2 Copying

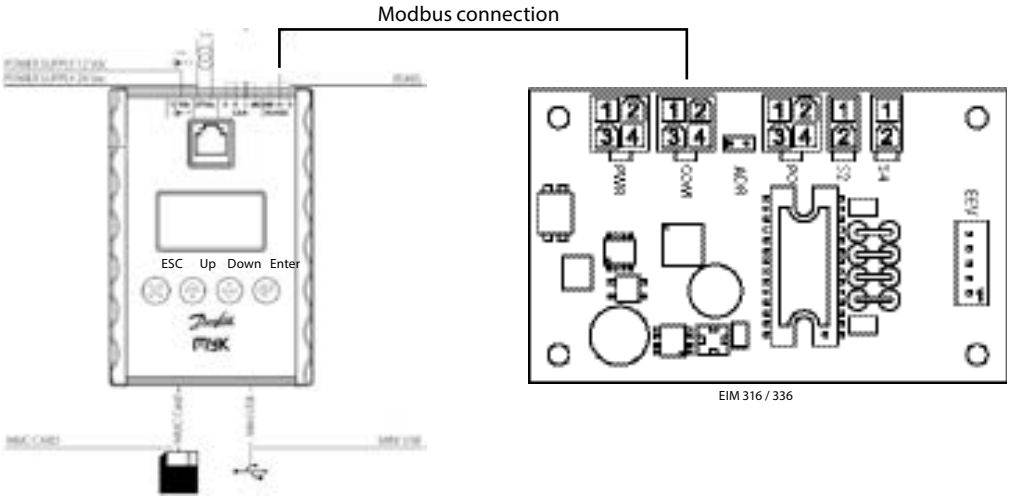
The downloaded program files (app.pk and mmimyk.cfg) can be copied to a SD or MMC card using the Windows explorer or a similar file manager.

First create a folder on the SD/MMC card, the name of the folder must be 8 characters or less. Then copy the two files into the folder. The SD/MMC card can now be inserted into the MyK.

4. Connecting the MyK

The MyK needs to be connected to a power supply. Three options are available for this, it can run either on a 12 V DC supply, a 24 V AC supply, or it can be powered through the USB connection.

The MyK is connected to the EIM through the modbus port (RS485), which is wired to the KM5 connector on the EIM.
D+ is connected to KM5,2
D- is connected to KM5,3
GND is connected to KM5,1



5. Starting the application

The MyK will startup in its Bios menu if no application has previously been loaded. From this menu it is possible to load the applications that are stored on the MyK, either in its internal or external memory. Please refer also to the MMIMyK software download guide.

Select Application – Appl.Load, then select the disc that the application is stored on, 0:/ (internal memory) or 1:/ (SD/MMC card). Select the folder containing the application and press the enter button. The application should load automatically and will startup after a few seconds.

The next time the MyK is powered, it will start the application automatically. To enter the bios menu again, press the Esc and enter buttons at the same time, and keep them pressed for a few seconds, until the MyK enters the bios menu. From here it is possible to load another application.

Setting up the MYK to specific EIM 336 unit address.

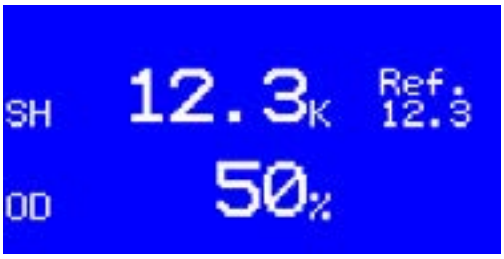
If the MyK does not recognize that it is connected to an EIM 336, it will beep to indicate that it is in alarm.
On the main screen press enter and go to "Parameters-> MyK setup-> System".
Under "Active EIM Addr", set the correct ID of the EIM 336 you want to connect to. Under "Serial baud rate (MB)" set the baud rate to the correct baud rate (default for EIM is 192 i.e. 19200 Baud) then after set the correct serial settings under "Serial settings (MB)", (default value for EIM 336 is 8E1 i.e. 8 data bits, even parity and 1 stop bit). The MyK should now able to connect with the EIM 336.

6. Using the application

6.1 The main screen

The main screen shows the current superheat (SH) and opening degree (OD) in large characters.
If the main switch is off, this will be shown with the characters OFF in large characters in the upper right corner. If the main switch is on, the currently active superheat reference is shown in the upper right corner instead.

If an alarm is present, this is indicated by the word "ALARM" to the right of the opening degree. If the unit is in manual control mode, this is indicated with the word "MAN".



Pressing enter will give access to the main menu.
Pressing escape will give access to the alarm screen.

6. Using the application (continued)

6.2 Alarm screen

The alarm screen shows the alarms that have still not been acknowledged. If more than one alarm is active or has not been acknowledged, pressing the up or down button will display the next or previous alarm. Pressing the escape button for two seconds will acknowledge the alarm and exit the alarm screen. Pressing the escape button briefly will exit to the main screen without acknowledging the alarm.

If an alarm becomes active the buzzer will sound until it has been acknowledged. The alarm can be muted by pressing the Esc button (or any of the other buttons).

6.3 The main menu

The main menu gives access to all the parameters and functions of the application. Navigation is generally done by using the up or down buttons to select a menu or function, and then pressing the ok button to enter the menu or function screen. Pressing escape will change the screen to the previous menu or function screen.

Main menu
- |-----Login
- |-----Parameters (see Parameters)
- |-----Manual Control
- |-----Readout
  - |-----Overview
- |-----Service
  - |-----User2Factory
  - |-----Factory2User
- |-----Service Info
  - |-----Software Info
  - |-----Product Info
- |-----Alarm
  - |-----Read Alarm
  - |-----Active Alarms
  - |-----Reset Alarms

6.4 Login

The login screen can be used to change the user level. The default user level is level 0 which means that no login is required. This user level gives access to the most basic parameters, that would be used on a daily basis. Some parameters require a high user level, in order to be accessed, see the parameter list for reference (Level). The access code consists of a 4 digit code. When entering the login screen the first digit is selected. Pressing up or down increases or decreases the value of the selected digit. Pressing enter, saves the digit and advances the cursor to the next digit. Pressing the left or right buttons, moves between the digits. When pressing enter while the last digit is selected, the access code is checked. If it is not correct, the code is deleted and a new code can be entered. If it is accepted, the access level changes and the main menu is displayed. In the 2nd row from the top, the current access level is visible.

6.5 Parameters

This is a list of the available parameters of the MyK application. The parameters in the Control, Regulation and Setup menus, are settings of the connected EIM. If no EIM is connected, "---" is displayed instead of the value. The MyK Setup and Password menus relate to the MyK application itself. Please refer to the EIM manual for a description of the parameters concerning the setup of the EIM.

Group1	Group2	Parameter	Description	Min	Max	Default	Units	Level	Notes
Control								0	
	Reg Control							0	
		r12	Main switch	0	1	0		0	OFF;ON
		o18	Manl control	0	1	0		1	OFF;MAN
		o45	Manual OD %	0	100/480	0	%/step	1	Used when the o18 Manual Control is set to 1. 0%/0 step = fully closed, 100%/480 step = fully open. % is chosen by default. See "manual OD as steps" for changing to step.
		tst	Startup time	0	1800	0	s	2	
		SOD	Startup OD	0	100	0	%	2	
		OOD	OD while OFF	0	100	0	%	2	
		RAL	Reset alarm	0	1	0		0	OFF;ON
Regulation								0	
	SH Control							0	
		n09	Max superheat	2.0	20.0	16.0	K	0	
		n10	Min superheat	1.0	20.0	4.0	K	0	
		TSH	Tn SH	10	1800	600		1	
		n22	SH close	0	16.0	0.5	K	1	
		SHL	SH Low	3.0	20.0	6.0	K	2	
		SHH	SH High	8.0	40.0	16.0	K	2	
		GaH	Gain High	0.5	50.0	1.0		2	
		GaL	Gain Low	0.1	50.0	12.5		2	
		TaH	Tau High	10	600	45		2	
		TaL	Tau Low	10	600	110		2	
		Aph	Alpha	15	600	130		1	
		n20	KpT0	-1.0	20.0	-1.0		2	
		CoS	Comp Speed	0.0	100.0	0.0		3	
		n09	Dyn max superheat	2.0	20.0	16.0	K	0	
		n10	Dyn min superheat	1.0	20.0	4.0	K	0	
		TSH	Dyn Tn SH	10	1800	600		1	
		Aph	Dyn Alpha	15	600	130		1	
	MOP							1	
		n11	MOP	0.0	200	13.7	bar	1	
		DMO	Diff MOP	-20.0	0.0	0.0	bar	2	
		KpM	Kp MOP	0.5	10.0	0.5		2	
		TnM	Tn Mop	30	600	180		2	
	Defrost							1	
		DeA	Def Activate	0	1	0		1	OFF;ON
		DHO	Def Hold OD	0	100	30	%	2	
		DH1	Def Hold Ti 1	0	32000	120	s	2	
		DH2	Def Hold Ti 2	0	32000	60	s	2	
		DDO	Dyn def hold OD	0	100	30	%	3	
	Te Control							1	
		ter	Te Reference	-200.0	200.0	0.0	°C	1	
		KpT	Kp Te	0.5	10	1		2	
		TnT	Tn Te	30	600	60		2	
	External sensors							3	
		PEV	EvapPress P0	0	32000	0	bar	3	
		TS2	S2 temp	-200.0	200.0	0.0	°C	3	
		TS4	S4 Air temp	-200.0	200.0	0.0	°C	3	

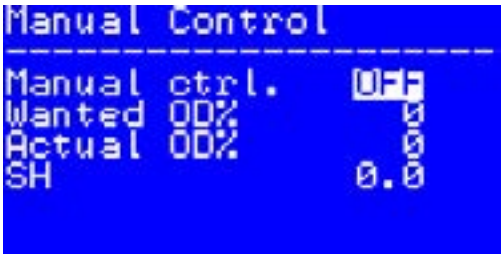
6.5 Parameters (continued)

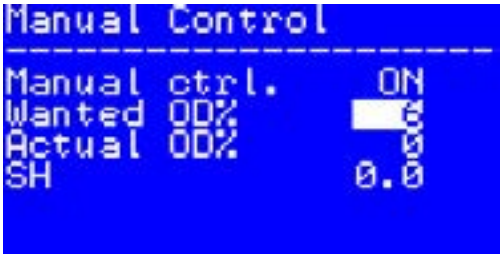
Group1	Group2	Parameter	Description	Min	Max	Default	Units	Level	Notes
	LOC							2	
		LTR	LOC Trig	0	100	95	%	2	
		LRe	LOC Reset	0	100	85	%	2	
		LTm	LOC Timer	0	7200	3600	s	2	
		LST	LOC SH Trig	0.0	50.0	20.0	K	2	
Setup								0	
	Modbus							3	
		o03	Unit Addr	1	240	165		3	
		UA2	Unit Addr 2	1	240	164		3	
		MBa	MB Baud	0	2	1		3	96;192;384
		MPa	MB Parity	0	2	2		3	NO;ODD;EVEN
		MSB	MB StopB	1	2	1		3	--;1;2
	Valve							2	
		MST	Max steps	100	1000	384		3	
		MSS	Max steps/sec	5	300	31		3	
		BKS	Start backlash	1	100	10	%	2	
		BKL	Backlash	0	100	20		2	
		COD	Comp. dir.	1	2	1		3	UP;DOWN
		MCU	Motor current	0	300	150		3	
	Regfrigerant							2	
		RFG	Refrigerant	0	37	23		2	1 : R12 2 : R22 3 : R134a 4 : R502 5 : R717 6 : R13 7 : R13b1 8 : R23 9 : R500 10 : R503 11 : R114 12 : R142b 13 : User D 14 : R32 15 : R227 16 : R401A 17 : R507 18 : R402A 19 : R404A 20 : R407C 21 : R407A 22 : R407B 23 : R410A 24 : R170 25 : R290 26 : R600 27 : R600a 28 : R744 29 : R1270 30 : R417A 31 : R422A 32 : R413A 33 : R422D 34 : R427A 35 : R438A 36 : Opteon XP10 37 : R407F
		RF1	Rfg. fac. A1	8000	12000	10428		3	
		RF2	Rfg. fac. A2	-4000	-1000	-2255		3	
		RF3	Rfg. fac. A3	1000	3000	2557		3	
	Sensors							2	
		r09	Adjust S2	-10.0	10.0	0.0	K	2	
		o20	Min transducer press	0	1.0	0.0	Bar (abs)	2	
		o21	Max transducer press	1	200	0.0	Bar (abs)	2	
	System							0	
		LBO	Limited list (BO)	0	1	0		0	OFF;ON
		HWM	HW main switch	0	1	0		2	OFF;ON
		F2U	Factory to user	0	1	0		3	OFF;ON
		U2F	User to factory	0	1	0		3	OFF;ON
		TSA	Sampling time	1	10	1		3	
		MOS	Manual OD as steps	0	1	0		3	Enable the manual OD in o45 to be entered as halfsteps.
MyK Setup								0	
	System							0	
		add	Active EIM Addr	0	254	165		0	
		bAU	Serial baudrate	0	8	6	MB	0	0;12;24;48;96;144;192;288;384
		COM	Serial settings	0	2	1	MB	0	8N1;8E1;8N2
Passwords								1	
	System							1	
		L01	Level 1 psswd	0	9999	1000		1	
		L02	Level 2 psswd	0	9999	2000		2	
		L03	Level 3 psswd	0	9999	3000		3	

6.6 Manual control

The valve can be opened and closed by manually setting an opening degree, while the controller is in manual control mode. It is possible to set the controller in manual control mode, by pressing enter on the manual control screen. This selects the manual control setting. Pressing enter again, makes it possible to toggle the manual control setting on or off, by pressing the up or down buttons.

After setting the manual control mode to on, press enter to accept the change. It is now possible to select the manual opening degree, by pressing the down button and pressing enter. Using the up or down buttons, the wanted opening degree can now be set. Pressing enter accepts the opening degree, and the valve will open or close to the selected opening degree.





6.7 Readouts

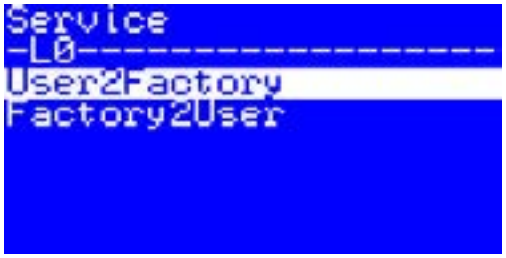
The readout screen shows some of the important readout values, read from the controller.
This includes the current superheat, superheat reference, current opening degree etc.

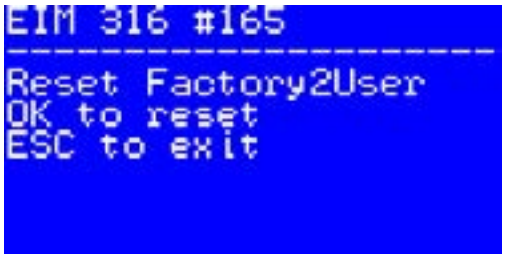
6.8 Service functions

Two service functions are available, resetting to factory default settings, and setting factory default settings.

The User2Factory function will copy the current settings, into the eeprom and save them as factory defaults. This means that if a factory reset is performed, these are the settings that will be used.

The Factory2User function will overwrite the current settings, with settings that are stored in the eeprom.

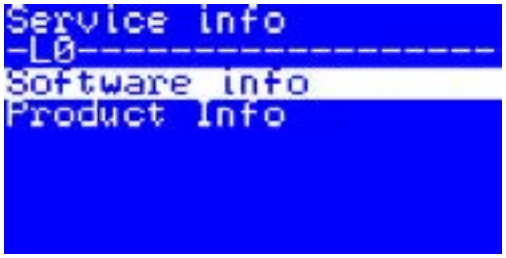


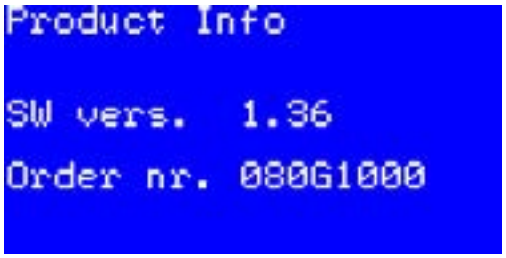


6.9 Service info screens

The service info screens display different information about the application. Software info displays the name, software version and date of the application. It also displays the bios version number and date of the MyK itself.

The product info screen displays the software version number and order number of the connected EIM.





6.10 Alarm

The read alarm screen displays a list of the currently active alarms reported from the connected EIM. The status of 8 different alarms are reported back from the EIM. A 0 (zero) means that the alarm is not active, a 1 means that the current alarm is active.

The active alarms screen displays details of the currently unacknowledged alarms. If more than one alarm has not been acknowledged, pressing the up or down buttons scrolls between them.

If all alarms have been acknowledged or if no alarms are present, the text “No alarms” is displayed instead.