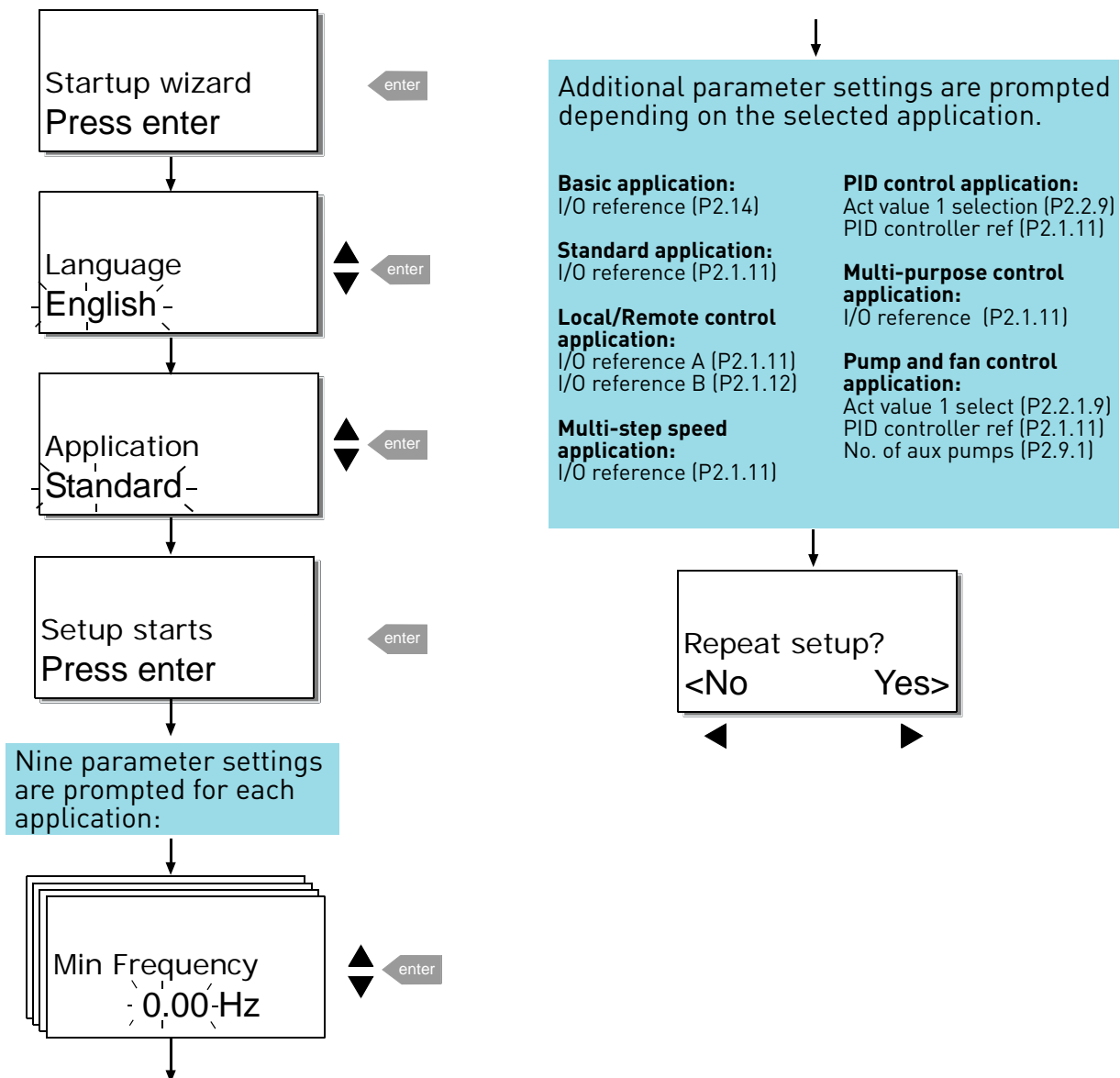# VACON NX QUICK HELP

Start-up wizard

The **Start Up Wizard** is activated when the power to the drive is turned on for the first time, or if the **Start Up Wizard** is activated from the System menu (P6.5.3) AND the power is turned OFF and back ON.

The **Start-up Wizard** is a feature on the control keypad to facilitate the commissioning of the frequency converter. If selected active (default), the Start-up Wizard prompts the operator for the **language** and **application** of his/her choice plus for **the values for a set of parameters** common to all applications as well as **for a set of application-dependent** parameters.

Always accept the value with the *Enter button*, scroll options or change values with the *Browser buttons* (up and down arrows). More information on the use of the control panel in Chapter 7 of the User's Manual.

Startup wizard
Press enter
enter

Language
English
enter

Application
Standard
enter

Setup starts
Press enter
enter

Nine parameter settings are prompted for each application:

Min Frequency
0.00 Hz
enter

Additional parameter settings are prompted depending on the selected application.

Basic application:
I/O reference (P2.14)

Standard application:
I/O reference (P2.1.11)

Local/Remote control application:
I/O reference A (P2.1.11)
I/O reference B (P2.1.12)

Multi-step speed application:
I/O reference (P2.1.11)

PID control application:
Act value 1 selection (P2.2.9)
PID controller ref (P2.1.11)

Multi-purpose control application:
I/O reference (P2.1.11)

Pump and fan control application:
Act value 1 select (P2.2.1.9)
PID controller ref (P2.1.11)
No. of aux pumps (P2.9.1)

Repeat setup?
<No   Yes>

Faults and fault codes

Fault code	Fault
1	Overcurrent
2	Overvoltage
3	Earth fault
5	Charging switch
6	Emergency stop
7	Saturation trip
8	System fault
9	Undervoltage
10	Input line supervision
11	Output phase supervision
12	Brake chopper supervision
13	Frequency converter under-temperature
14	Frequency converter overtemperature
15	Motor stalled
16	Motor overtemperature
17	Motor underload
18	Unbalance
22	EEPROM checksum fault
24	Counter fault
25	Microprocessor watchdog fault
26	Start-up prevented
29	Thermistor fault
30	Safe Disable
31	IGBT temperature (hardware)
32	Fan cooling
34	CAN bus communication
35	Application
36	Control unit
37	Device change
38	Device added
39	Device removed
40	Device unknown
41	IGBT temperature
42	Brake resistor overtemperature
43	Encoder fault
44	Device change (default param.)
45	Device added (default param.)
49	Division by zero (application)
50	Analogue input I_{in} < 4mA (selected signal range 4-20 mA)
51	External fault
52	Keypad communication fault
53	Fieldbus fault
54	Slot fault
56	PT100 temperature fault
57	Identification
58	Brake
59	Follower communication

Fault code	Fault
60	Cooling
61	Speed error
62	Run disable
63	Emergency stop
64	Input switch open

Monitoring values

Code	Signal name	Unit
V1.1	Output frequency	Hz
V1.2	Frequency reference	Hz
V1.3	Motor speed	rpm
V1.4	Motor current	A
V1.5	Motor torque	%
V1.6	Motor power	%
V1.7	Motor voltage	V
V1.8	DC-link voltage	V
V1.9	Unit temperature	°C
V1.10	Motor temperature	%
V1.11	Voltage input	V
V1.12	Current input	mA
V1.13	DIN1, DIN2, DIN3	
V1.14	DIN4, DIN5, DIN6	
V1.15	DO1, RO1, RO2	
V1.16	Analogue output current	mA
M1.17	Multimonitoring items	

NOTE! Different All in One applications embody more monitoring values.

Actual value special display

The *Actual value special display* parameters are used to convert and display the actual value signal in a form more informative to the user.

The Actual value special display parameters are available in *PID Control Application* and *Pump and Fan Control Application*:

Par ID	Parameter name	Parameter code in PID ctrl applic.	Parameter code in Pump&Fan ctrl applic.
ID1033	*Actual value special display minimum*	2.2.46	2.9.29
ID1034	*Actual value special display maximum*	2.2.47	2.9.30
ID1035	*Actual value special display decimals*	2.2.48	2.9.31
ID1036	*Actual value special display unit*	2.2.49	2.9.32

Example:

The actual value signal sent from a sensor (in mA) represents the amount of waste water pumped from a tank per second. The signal range is 0(4)...20mA. Instead of receiving the level of the actual value signal (in mA) on the display, you wish to receive the amount of water pumped in m^3/s. You then set a value for par. ID1033 to correspond to the minimum signal level (0/4 mA) and another value for par. ID1034 to correspond to the maximum signal level (20 mA). The number of decimals needed can be set with par. ID1035 and the unit (m^3/s) with par. ID1036. The level of the actual value signal is then scaled between the set min and max values and displayed in the selected unit.

The following units can be selected (par. ID1036):

Value	Unit	On keypad
0	Not Used	
1	%	%
2	°C	°C
3	m	m
4	bar	bar
5	mbar	mbar
6	Pa	Pa
7	kPa	kPa
8	PSI	PSI
9	m / s	m/s
10	l / s	l/s
11	l / min	l/m
12	l / h	l/h
13	m3 /s	m3/s
14	m3 /min	m3/m

Value	Unit	On keypad
15	m3 /h	m3/h
16	°F	°F
17	ft	ft
18	gal / s	GPS
19	gal / min	GPM
20	gal / h	GPH
21	ft3 / s	CFS
22	ft3 / min	CFM
23	ft3 / h	CFH
24	A	A
25	V	V
26	W	W
27	kW	kW
28	Hp	Hp

NOTE: The maximum number of characters that can be shown on keypad is 4. This means that in some cases the display of the unit on the keypad does not comply with the standards.

Selection of language

1. Find the System Menu (M6)
2. Enter the *Language selection page (S6.1)*.
3. Push the *Menu button right* to make the name of language blink.
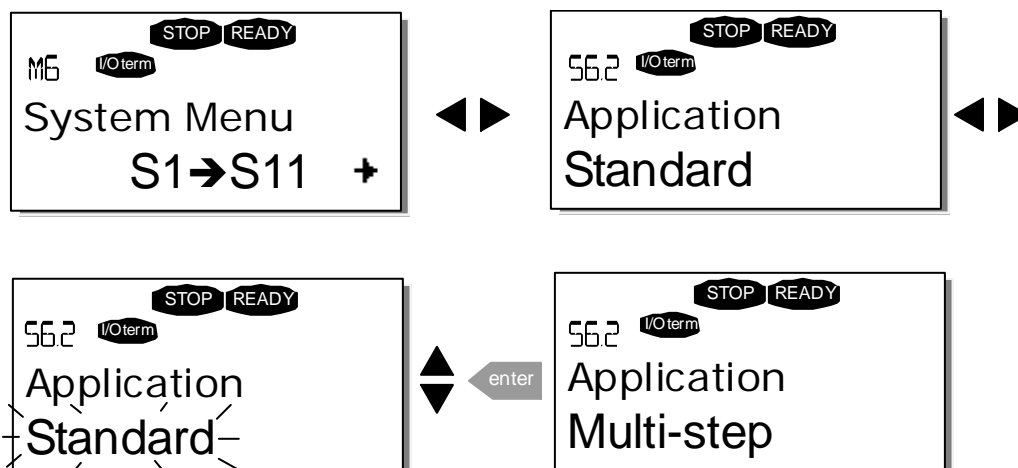4. Browse through the languages with the Browser buttons and select another language with the Enter button.

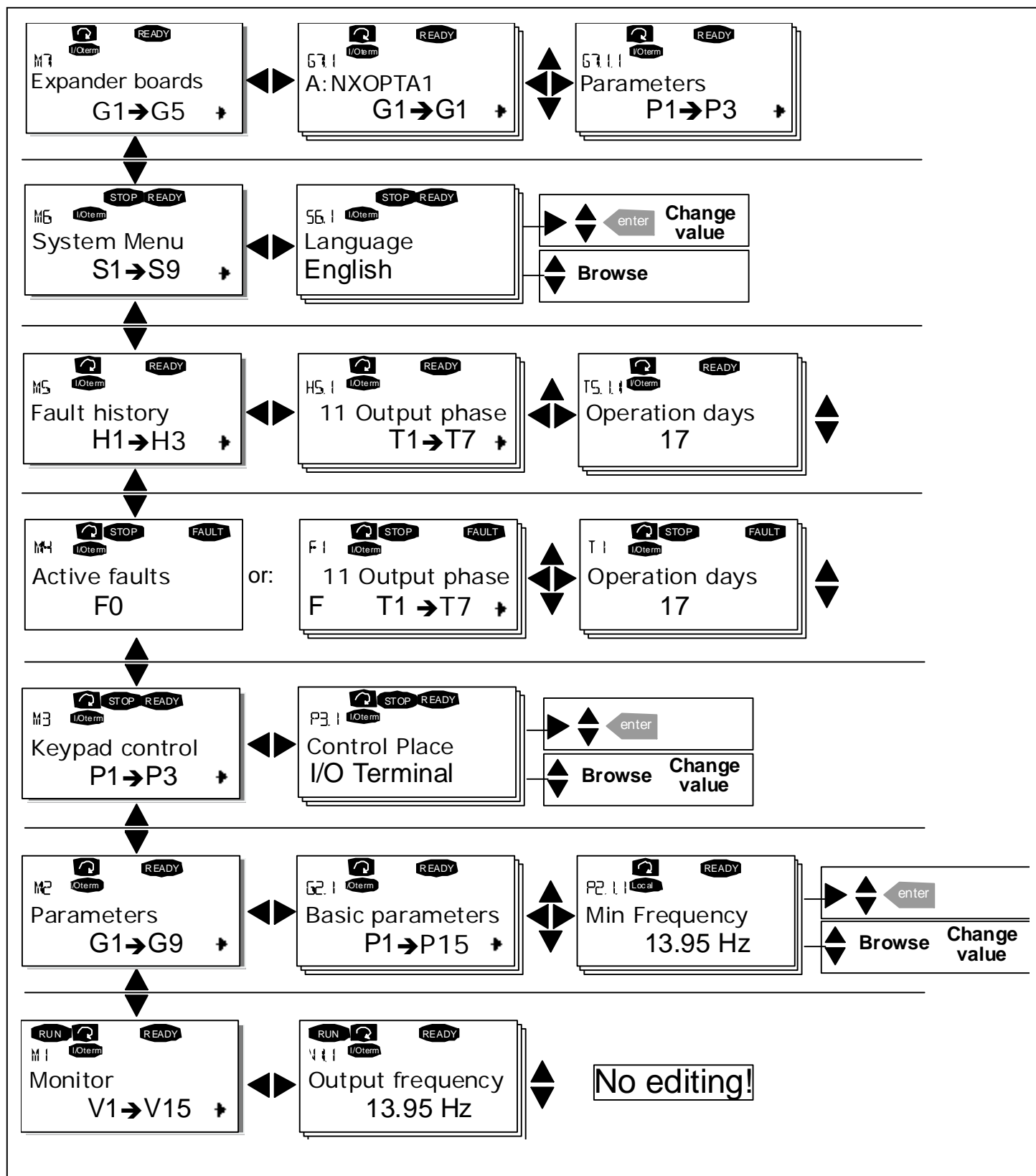For closer information on language selection, see User's Manual Chapter 7.3.6.
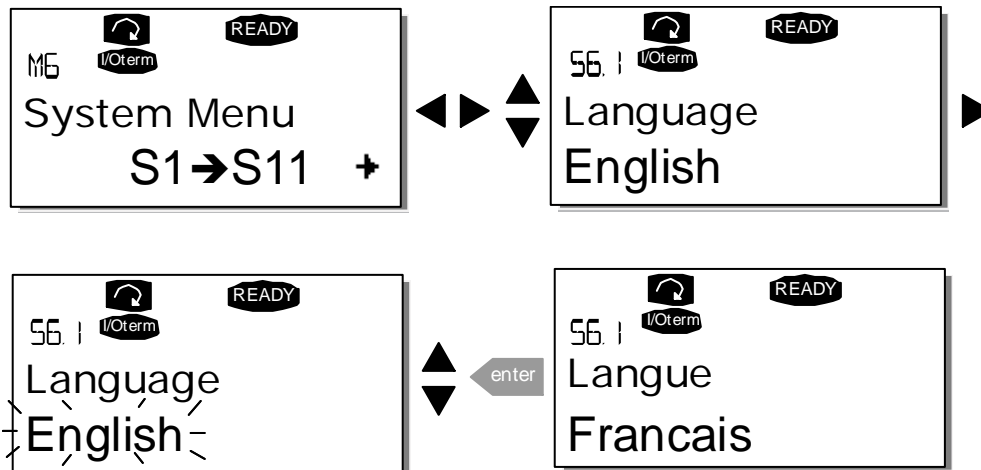
Selection of application:

1. Find the System Menu (M6)
2. Enter the *Application selection page (S6.2)*.
3. Push the *Menu button right* to make the name of application blink.
4. Browse through the applications with the Browser buttons and select another application with the Enter button.

For closer information on application change, see User's Manual Chapter 7.3.6.

Control panel menus

M7 **READY** Expander boards G1→G5	A:NXOPTA1 G1→G1	G7.1.1 Parameters P1→P3
M6 **STOP READY** System Menu S1→S9	S6.1 Language English	►▲▼ enter **Change value** / ▲▼ **Browse**
M5 **READY** Fault history H1→H3	H5.1 11 Output phase T1→T7	T5.1.1 Operation days 17
M4 **STOP FAULT** Active faults F0	or: F1 11 Output phase F T1→T7	T1 Operation days 17
M3 **STOP READY** Keypad control P1→P3	P3.1 Control Place I/O Terminal	►▲▼ enter / ▲▼ **Browse** **Change value**
M2 **READY** Parameters G1→G9	G2.1 Basic parameters P1→P15	P2.1.1 Min Frequency 13.95 Hz	►▲▼ enter / ▲▼ **Browse** **Change value**
M1 **RUN READY** Monitor V1→V15	V1.1 Output frequency 13.95 Hz	▲▼ No editing!

Keypad shortcuts

1.   Quick activation of keypad contol

If you have selected either the I/O terminal control **(I/O term)** or the fieldbus control **(Bus/Comm)** as the active control place but wish to take over the control from these to the keypad, this can be done in two different ways.

A. Swap between keypad control and another control as active control place

With the I/O terminals or fieldbus selected as the active control place, it is also possible to change the control to the local keypad and back to the original control place.

Irrespective of your location in the menu structure, keep the ◀ button pushed down for 5 seconds. This will activate the Start & Stop keypad control. The display will jump to the editing mode of *R3.2 Keypad Reference* and you will be able to enter the desired frequency on the keypad. Push the start button to start the drive.

Pushing the ◀ button again for 5 seconds returns the control to the original control place (active control place, P3.1) and its reference. **NOTE:** The motor starts if the start command of the active control place is ON and run at the formerly set reference. The keypad display will show monitoring value *V1.1 Output Frequency*.

If any of the parameter values in menu *M3* is changed in between the swapping the keypad reference will be reset to 0.00 Hz.

B. Activate the keypad control and copy the output reference to the keypad

When motor is running: Keep the **start** button pushed down for 3 seconds. The keypad will become the active control place and the current frequency reference and direction will be copied to the keypad.

When motor is stopped: Keep the **stop** button pushed down for 3 seconds. The keypad will become the active control place and the current frequency reference and direction will be copied to the keypad.

These features will not work unless you are in menu *M3*.
If you are in any other than *M3* menu and try to start the motor by pressing the START button when the keypad is not selected as the active control place you will get an error message *Keypad Control NOT ACTIVE*.
If you are in any other than *M3* menu and press the STOP button the motor will stop. See point 3 below.

○ ○ ○

2.   Copy elsewhere set frequency reference to keypad

Copy the frequency reference set elsewhere (I/O, fieldbus) to the keypad by keeping the **enter** button pushed down for 3 seconds. This shortcut will not change control places.
This feature will not work unless you are in menu *M3*.

○ ○ ○

3.   Stopping the drive regardless of the active control place

By default, the motor can be stopped **at all times** by pushing the **stop** button regardless of the selected control place. This default setting can be inactivated by giving parameter *Stop Button Activated* (P3.4 or P3.6) (menu **M3**) the value **0**. With this value given to the parameter, pushing the STOP button stops the motor **only when the keypad has been selected as the active control place**.