Commissioning

VEDA-IN DRIVES RD11 Frequency Converter



vedaindrives.com

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General Information Overview of the RD11 frequency converter with three-phase asynchronous motors

This manual provides connection and configuration procedures for operating the VEDA-IN DRIVES RD11 frequency converter with three-phase asynchronous motors.

Manual and literature

Before installation and startup, please carefully read the “VEDA-IN DRIVES RD11 Frequency Converter Operating Instructions”. This manual does not replace the operating instructions.

Safety Guidelines

Contact with live parts can be fatal, even when the equipment is powered off. Ensure that all voltage inputs are disconnected (including DC bus connections) and motor cables are detached. Bear aware that high voltage may persist in the DC circuit even after LEDs turn off. Before touching any potentially hazardous live components of drives of all frame sizes, wait at least five minutes [after power disconnect].

The frequency converter must be properly grounded.

The "Stop" button on the control panel is not a protective disconnect. —it does not de-energize the frequency converter.

Checking the Component Match

1. Match the converter’s serial number to your order.

2. Make sure the frequency converter's rated input voltage (as specified on its nameplate) matches the supply network voltage it will be connected to. If the supply voltage is lower than the converter's rated input, the device may operate with reduced performance characteristics or may generate faults.

It is strictly prohibited to connect to a supply voltage exceeding the converter's rated input voltage (as marked on the nameplate)!

3. Check that the motor's rated voltage does not exceed the frequency converter's output voltage rating. The motor's rated voltage is typically determined by its winding connection scheme, therefore make sure that the motor is connected using the scheme Star [Y] or Delta [Δ] (as indicated on the motor's nameplate), and check the corresponding voltage values for the selected scheme.

4. In most cases, the motor's rated current must not exceed the frequency converter's rated input current, otherwise the drive will be unable to deliver rated torque.

Frequency Converter Installation Conditions

1. The ambient conditions must match the enclosure's protection rating - the converter's standard IP20 housing provides no protection against dust ingress or drops of liquid penetrating the device. Ensure the area around the fans is clean, free of dust and dirt.

2. The installation site must be dry (maximum relative air humidity 95% without condensation).

3. Optimum ambient operating temperature range: 0...+40°C. Within +40...+50°C, the converter will operate with derated performance characteristics. Operation is permitted at temperatures from –10 to 0°C, provided condensation is prevented. It is not recommended to operate the frequency converter: Below –10°C or Above +50°C, since it may reduce the product service life.

4. Maximum installation altitude for full-performance operation: 1,000 m above sea level.

5. Check the frequency converter's ventilation conditions. Side-by-side mounting permitted, but mandatory clearances

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must be maintained: 150 mm vertical air gap (above/below each unit).

Electrical Connections

1. Power supply, motor, and grounding cables may be connected to the frequency converter as specified in the table below.

Supply voltage, V	Rated power, kW	Fastening	Tightening torque (Nm)	Recommended conductor cross-sections, mm²
230	0.75	M3	0.8-1	2.5
	1.5	M3	0.8-1	2.5
	2.2	M3.5	1.2-1.5	4
	4	M3.5	1.2-1.5	4
	5.5	M4	1.2-1.5	4
	7.5	M6	4-6	16
	11	M6	4-6	16
	15	M6	4-6	25
	18.5	M6	4-6	25
	22	M6	4-6	25
	30	M8	8-10	35
	37	M8	8-10	50
	45	M8	8-10	50
	55	M8	8-10	70
400	0.75	M3	0.8-1	1.5
	1.5	M3	0.8-1	2.5
	2.2	M3	0.8-1	2.5
	4	M3.5	1.2-1.5	4
	5.5	M3.5	1.2-1.5	6
	7.5	M4	1.2-1.5	6
	11	M4	1.2-1.5	10
	15	M6	4-6	10
	18.5	M6	4-6	16
	22	M6	4-6	16
	30	M6	4-6	25
	37	M6	4-6	25
	45	M8	8-10	35
	55	M8	8-10	35
	75	M8	8-10	50

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Supply voltage, V	Rated power, kW	Fastening	Tightening torque (Nm)	Recommended conductor cross-sections, mm²
	90	M8	8-10	50
	110	M8	8-10	70
	132	M12	14-16	95
	160	M12	14-16	95
	185	M12	14-16	120
	200	M12	14-16	150
	220	M12	14-16	150
400	250	M12	14-16	185
	280	M12	14-16	185
	315	M16	20-23	240
	355	M16	20-23	240
	400	M16	20-23	300
	450	M16	20-23	400
	500	M16	20-23	400
	560	M16	20-23	500
	630	M16	20-23	500
	710	M16	85	500
	800	M16	85	2x300
	900	M16	85	2x300
	1000	M16	85	2x300
	1120	M16	85	2x300
690	22	M8	8-10	35
	30	M8	8-10	35
	37	M8	8-10	35
	45	M8	8-10	35
	55	M8	8-10	35
	75	M8	8-10	50
	90	M8	8-10	50
	110	M8	8-10	70
	132	M12	14-16	95
	160	M12	14-16	95
	185	M12	14-16	120
	200	M12	14-16	150

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Supply voltage, V	Rated power, kW	Fastening	Tightening torque (Nm)	Recommended conductor cross-sections, mm²
	220	M12	14-16	150
	250	M12	14-16	185
	280	M12	14-16	185
	315	M16	20-23	240
	355	M16	20-23	240
	400	M16	20-23	300
	450	M16	20-23	400
	500	M16	20-23	400
	560	M16	20-23	500

2. Each drive must be grounded individually. Grounding cable length must be minimized. Recommended grounding cable cross-sections: 4 mm² and 16 mm².

The grounding conductor must be connected first!

3. A protective input device must be installed. (Refer to the manual for specific ratings).

4. Separate cable channels must be used for: Input power cables; Output power cables; Control cables.

5. Use shielded cables to meet EMC requirements. Provide protection for control cables against electromagnetic interference.

6. Check correct connection of: Input terminals (for single-phase: R/L, T/N; for three-phase: R/L, S, T/N), Output terminals (U, V, W) to the frequency converter.

Checking the Motor Connection

1. Maximum cable lengths for the shielded motor cable: 100 m (power-dependent). Unshielded motor cable: >100 m (requires PWM frequency reduction to ≤2 kHz).

2. No capacitor banks must be connected in the power circuit between the drive and the motor to compensate for reactive power.

3. Two-speed motors, wound-rotor motors, and motors previously using star-delta (Y-Δ) starting must operate in a single fixed configuration at one constant speed.

4. When a contactor or disconnect switch is installed between drive and motor the drive must receive a position verification signal (interlock) indicating the device's status. Never interrupt the motor power circuit with a contactor during drive operation.

5. Motors equipped with forced-air cooling must have their ventilation system automatically activated during operation.

User interface

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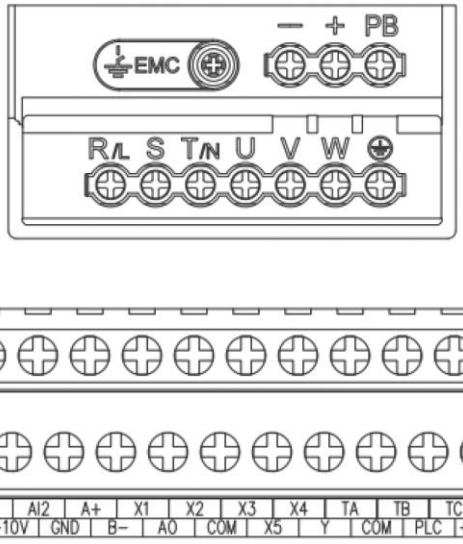


Frequency Converter Control Panel

Designation	Function	Description
A	Indicator size parameter	Hz: Frequency. rpm: Rotational speed. A: Motor current. V: DC bus voltage. %: Setpoint percentage.
B	Status Indicator	LED illuminated: Motor running in forward direction. LED blinking: Motor running in reverse direction. LED off: Motor stopped
C	Menu Button	Enters menu in standby or "Operation" mode. Exits current parameter menu. To access status interface, hold button for 1 second in standby or "Operation" mode.
D	Set/Switch Button	Saves modified parameter. To toggle parameter bit, hold button for 1 second (continued holding will cycle through options)
E	Parameter Adjustment Button	"Up" button increases parameter value. "Down" button decreases parameter value.
F	Start button	When drive is controlled from panel, "Start" button initiates motor rotation in forward direction.
	Stop/Reset Button	When the drive is controlled from panel, "Stop/Reset" button stops the motor. Parameter [F04.08] can assign different command to "Stop/Reset" button. In case of fault, "Stop/Reset" button resets the fault.

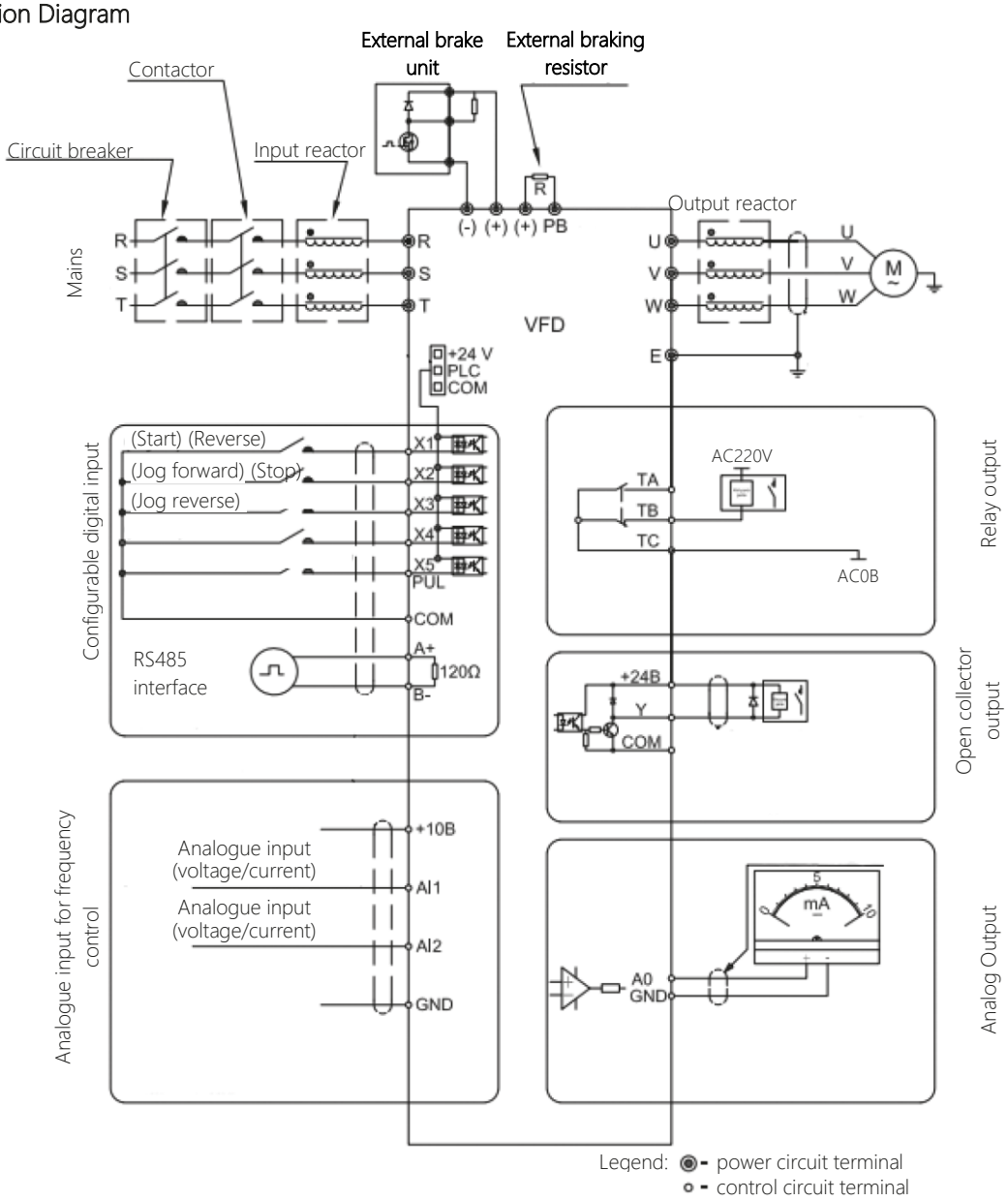
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Drive Terminal Block Layout



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Electrical Connection Diagram



*Detailed external connection diagrams are provided in the operation manual

Putting into service

Powering On the Frequency Converter. Restoring Factory Settings/Initialization

Attention! It is recommended to perform the procedure before beginning the works on frequency converter parameter configuration, with no modifications to the existing program, and when setting is performed for a new application or there is no information about previously entered parameters.

Attention! After initialization of the frequency converter, all previously entered parameters will be lost. If the current converter program is requested in the future - it is recommended to save it beforehand.

Initialization procedure for RD11 converter: Access parameter menu. Set parameter «F00.03» to value «22». Initialization options:

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0	Not used
11	All parameters except for motor parameters
22	All parameters
33	Clear error log

Upon completion of initialization factory settings will be recorded in the converter parameters. The display will show "Save" during the process.

Drive Adaptation for New Motor Operation. Motor Parameters

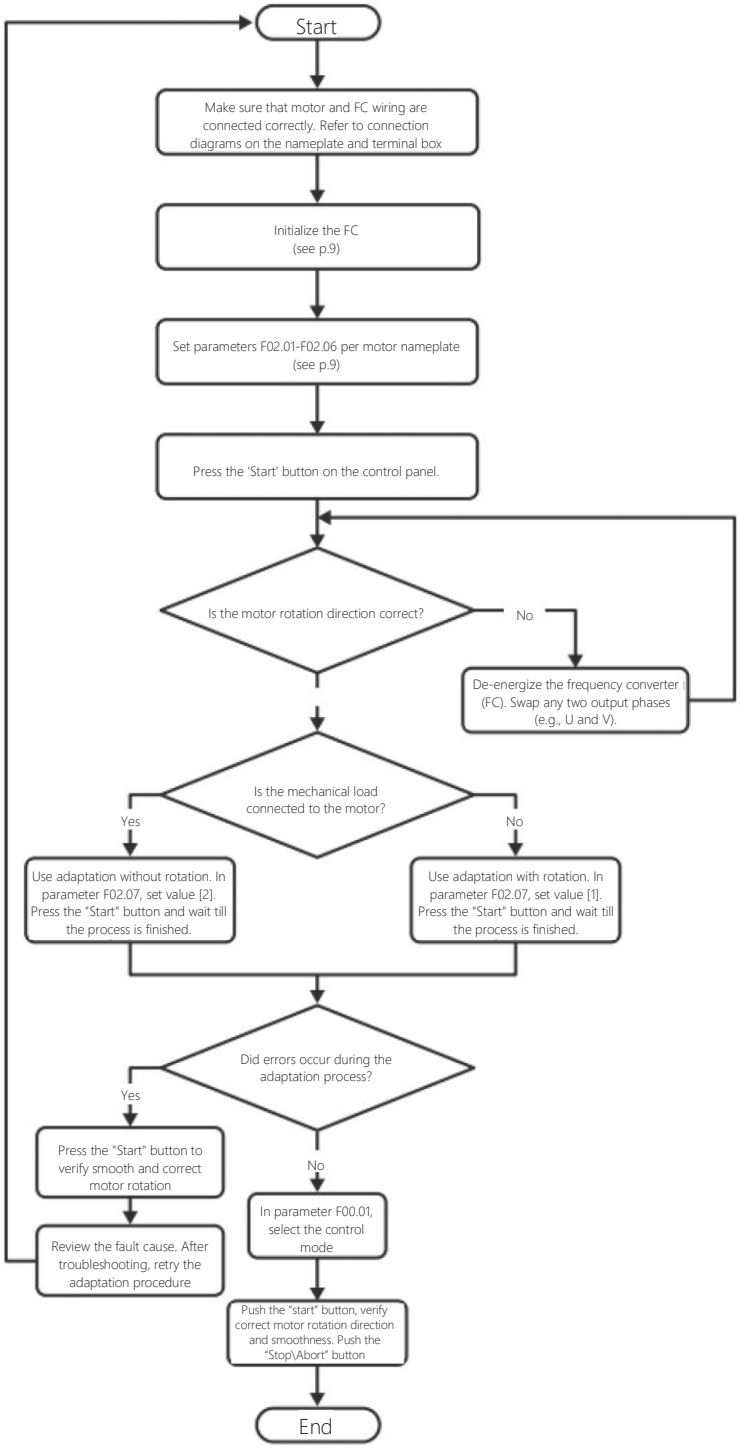
The frequency converter (FC) comes with default motor parameters set for a typical motor matching the FC's rated specifications. In most cases (standard 50 Hz induction motor at 400V) the data will match and these defaults will work properly. However, it is strongly recommended to check all parameters against the motor nameplate data.

No.	Parameter	Description
F02.00	Motor type	Asynchronous/Synchronous
F02.01	Number of Motor Poles	# pcs. (Motor nameplate may indicate pole pairs)
F02.02	Rated power	## kW (From motor nameplate, rounded to nearest decimal)
F02.03	Rated frequency	## Hz (From motor nameplate)
F02.04	Rated speed	## rpm (From motor nameplate)
F02.05	Rated voltage	## V (From motor nameplate)
F02.06	Rated Current	## A (From motor nameplate)
F02.07	Motor Auto-Tuning	1. Rotation-Based Tuning. It is recommended when the motor coupling is disconnected or where a brief rotation won't affect the process. 2. Static Tuning (No Rotation). After entering the value, "F-01" appears on the display. Press START to begin tuning. Frequency reference will display when complete

##: Factory defaults match the frequency converter's rated parameters. It is necessary to enter the actual motor parameters.

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FC Preparation Algorithm for Application Setup



Key Motor Protection, Limitation, and Threshold Parameters

No.	Parameter	Description
F01.13	Minimum Rotation Speed	[0] Hz - For most applications. [20] Hz - For pumps (prevents overheating and mechanical wear).
F01.10	Full Rotational Speed	[50] Hz (Do not exceed motor's rated speed).

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No.	Parameter	Description
F10.14	Braking Function (for high-inertia loads)	[2] Braking with resistor and overvoltage control. [1] Braking with resistor (no overvoltage control). [0] No braking resistor.
F10.16	Kinetic back-up (for high-inertia loads)	[1] Enabled: When DC bus voltage drops below F10.17 setting, the FC automatically reduces output frequency to prevent undervoltage shutdown. Higher inertia extends FC operation without input power.
F10.11	Overvoltage Protection	Prevents overvoltage fault conditions during rapid acceleration/deceleration.
F01.40	PWM frequency	[4] kHz Low frequency reduces FC heat (ideal for high ambient temps), allows longer motor cables (see manual), but increases cable/motor losses and acoustic noise. High frequency reduces motor acoustic noise

General Functions

Operate independently of control mode or application.

Parameter	Description	Recommended value
Flying Start		
F07.00	Start Mode	[2] Start after detecting rotation speed/direction.
F07.26	Frequency Search Time	*0.5 s Shorter times increase motor current impact and reduce coasting time.
F07.27	Post-Search Delay	*1 s. Demagnetization time after speed detection (increase for higher power motors). The higher the power of the motor is, the longer is the recommended pause time.
F07.28	Search Current	*120%. Current level for rapid speed detection.
Kinetic back-up (Recommended for high-inertia loads like fans)		
F10.16	Undervoltage Control	[1] On When this function is enabled, in case of a voltage drop in the DC link of the FC, the frequency converter will brake the drive to maintain the voltage level specified in parameter F10.17
F10.17	Voltage Maintenance Level	*430 V. Activation threshold for undervoltage control. It is also the value that will be maintained until power is restored or the motor stops and the FC is turned off.
F03.16	Torque in generator mode	80–90%. Braking torque generated on the motor shaft during braking. Adjust onsite. A value that is too low will delay the motor braking in normal operation.
Sleep Mode (PID control only)		
F13.29	Sleep Mode	[1] On Enable sleep function.
F13.30	Sleep Frequency	*10 Hz. The frequency at which the sleep timer is activated. (must be ≥ F01.13 limit).
F13.31	Sleep Delay	*60 s Time at minimum frequency. before "sleep".

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Parameter	Description	Recommended value
F13.32	Wake-up Threshold	*5%. Deviation drop below the setpoint that wakes FC
F13.33	Wake-up delay	*1 s Response time after threshold breach.
F13.23	Minimum Frequency Limit	40% of maximum frequency. Set per manufacturer guidelines.

** Default value.*

Parameter	Parameter number in the corresponding mode		Description
	OLVC	U/f	
Control Mode	F01.00 [1]	F01.00 [0]	Scalar/vector mode for asynchronous/synchronous motors
Energy Saving Mode Activation	F03.37	F04.30	Compensation for stator winding losses in electric motors. Particularly relevant for low-power motors (where active resistance exceeds reactive resistance) and mechanisms without increased overload.
Energy Saving Mode Adjustment	F03.38/ F03.39	F04.30/ F04.31	Search for the minimum permissible magnetization point without losing regulation quality.
Motor Characteristic Control (Speed/Torque)	F03.40	-	Mode for maintaining constant speed/torque.

Detailed descriptions of these functions are provided in the operation manual.

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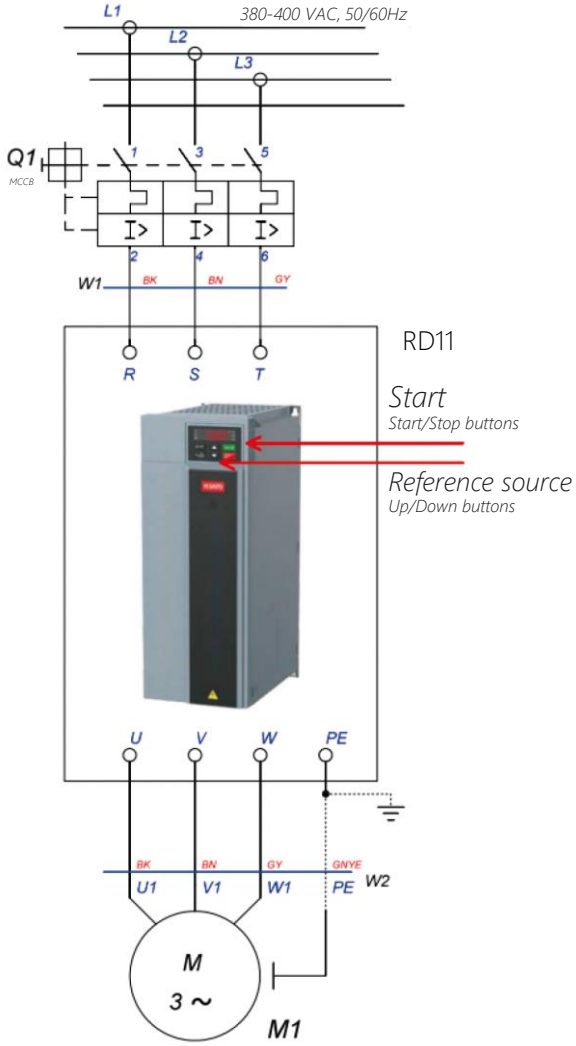
VEDA-IN DRIVES RD11 Application Examples

Starting and Controlling the Drive from the FC Panel Without External Control Circuit.

Starting using Start/Stop buttons on the FC panel.

Speed adjustment using Up/Down buttons on the FC panel.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F01.01	Command source selection	[0] Keyboard control - Commands via Start/Stop keys
F01.02	Reference source selection	[0] Keyboard control - Commands via Up/Down keys
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F01.10	Maximum output frequency	Hz - Determined individually (default 50 Hz)
F01.12	Upper frequency limit setting	Hz - Determined individually (default 50 Hz)
F01.13	Lower frequency limit setting	Hz - Determined individually (default 0 Hz)

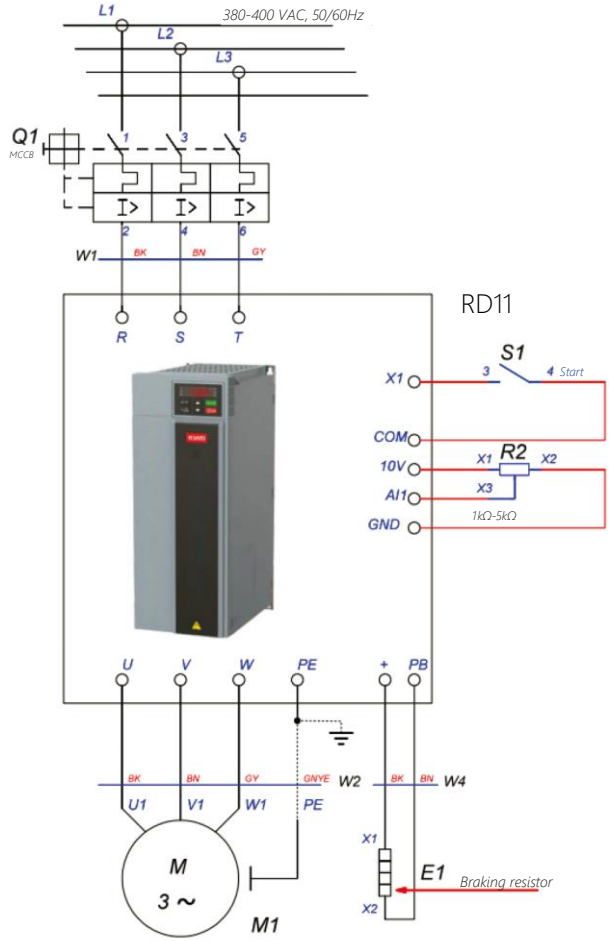


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Starting the Drive from a Toggle Switch with Smooth External Potentiometer Adjustment.

Start/Stop using a toggle switch.
Speed adjustment via external potentiometer.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Channel A reference source	[2] Analog AI - Analog input AI
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F01.10	Maximum output frequency	Hz - Determined individually (default 50 Hz)
F01.12	Upper frequency limit setting	Hz - Determined individually (default 50 Hz)
F01.13	Lower frequency limit setting	Hz - Determined individually (default 0 Hz)
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.41	AI signal type	[0] Voltage - 0...10V
F05.50	AI signal lower limit	[0]% - AI lower range (0V)
F10.14	Braking mode	[1] - Resistive braking activation



For more precise drive control, vector control mode is recommended.
To do this, activate it in parameter F01.00 - [1] and additionally carry out an auto-adaptation procedure on the motor to measure the additional values.

The auto-adaptation can be launched via parameter F02.07 - [2]. After selection, press "Start" and wait for the procedure to complete.

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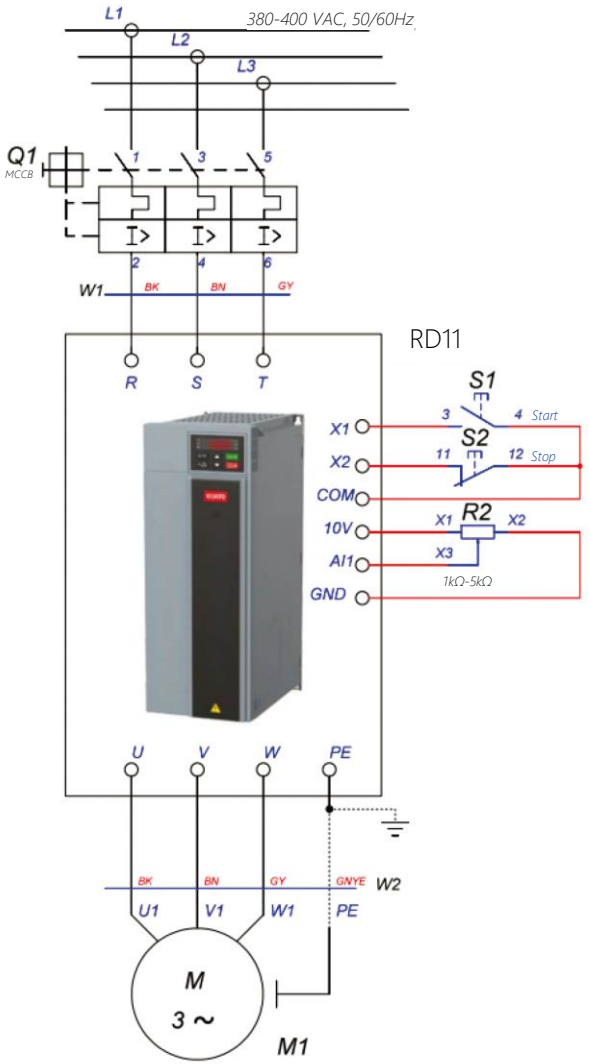
Three-Wire Control Scheme Starting with External Potentiometer Adjustment.

Starting using Start/Stop buttons.

Three-wire control system.

Speed adjustment via external potentiometer.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Channel A reference source	[2] Analog AI - Analog input AI
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F01.10	Maximum output frequency	Hz - Determined individually (default 50 Hz)
F01.12	Upper frequency limit setting	Hz - Determined individually (default 50 Hz)
F01.13	Lower frequency limit setting	Hz - Determined individually (default 0 Hz)
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.01	Digital input function X2	[3] 3-Wire control (X1) - Stop command
F05.20	Control scheme type	[2] Three wire system
F05.41	AI signal type	[0] Voltage - 0...10V
F05.50	AI signal lower limit	[0]% - AI lower range (0V)



For more precise drive control, vector control mode is recommended.

To do this, activate it in parameter F01.00 - [1] and additionally carry out an auto-adaptation procedure on the motor to measure the additional values.

The auto-adaptation can be launched via parameter F02.07 - [2]. After selection, press "Start" and wait for the procedure to complete.

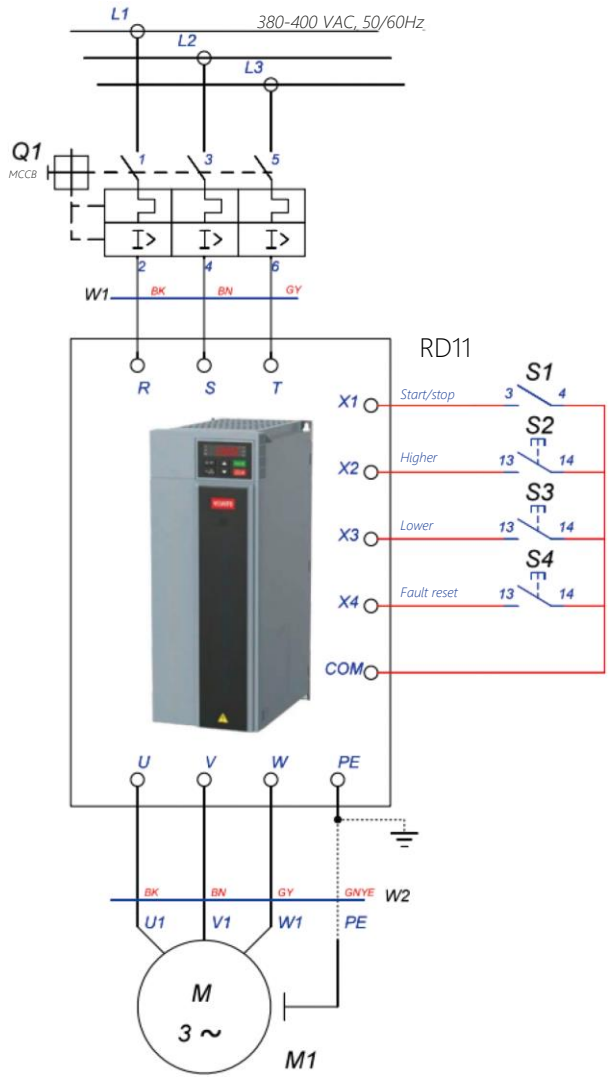
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Digital Potentiometer Starting and Speed Control.

Start/Stop using a toggle switch.

Speed adjustment with the Higher/Lower buttons. Fault reset button.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Reference source selection	[7] Terminal Up/Dw control - Digital potentiometer
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F01.10	Maximum output frequency	Hz - Determined individually (default 50 Hz)
F01.12	Upper frequency limit setting	Hz - Determined individually (default 50 Hz)
F01.13	Lower frequency limit setting	Hz - Determined individually (default 0 Hz)
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.01	Digital input function X2	[10] Increasing frequency (Up)
F05.02	Digital input function X3	[11] Decreasing frequency (Dw)
F05.03	Digital input function X4	[8] Fault reset
F05.25	Potentiometer control mode	[0] Frequency power off storage - saving the frequency after resetting the power
F05.26	Digital potentiometer response rate	[0.5 Hz/s] - Multi-Speed Drive Control



For more precise drive control, vector control mode is recommended.

To do this, activate it in parameter F01.00 - [1] and additionally carry out an auto-adaptation procedure on the motor to measure the additional values.

The auto-adaptation can be launched via parameter F02.07 - [2]. After selection, press

"Start" and wait for the procedure to complete.

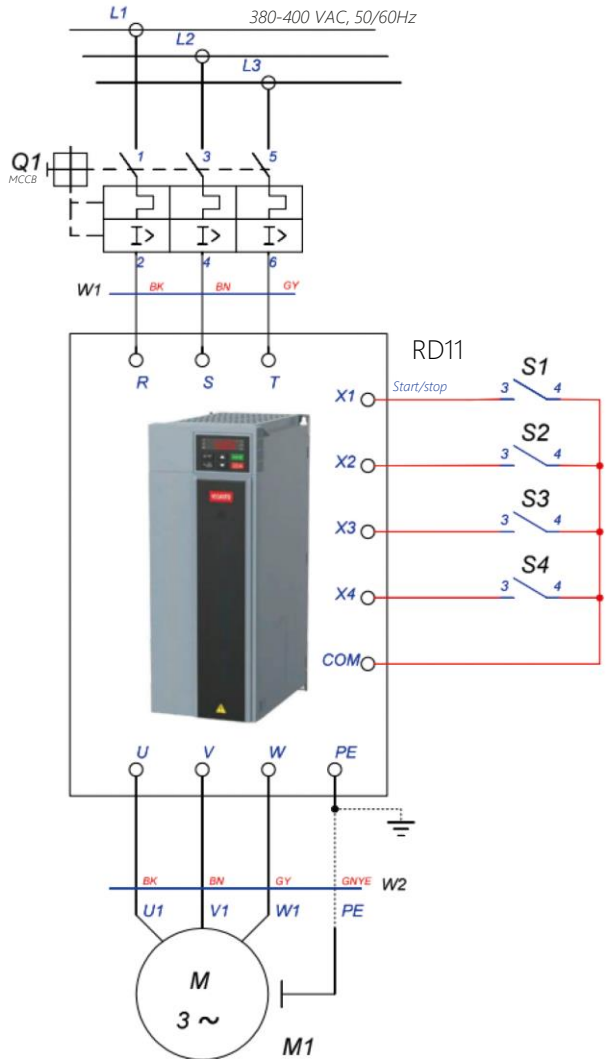
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Speed adjustment via toggle switch combinations.

Start/Stop using a toggle switch.

Speed adjustment via toggle switch combinations.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Reference source selection	[11] Multi-stage speed given - Digital multi-speed control
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F01.10	Maximum output frequency	Hz - Determined individually (default 50 Hz)
F01.12	Upper frequency limit setting	Hz - Determined individually (default 50 Hz)
F01.13	Lower frequency limit setting	Hz - Determined individually (default 0 Hz)
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.01	Digital input function X2	[16] Multi-speed terminal 1 - Multi-speed mode bit 0 (see table below)
F05.02	Digital input function X3	[17] Multi-speed terminal 2 - Multi-speed mode bit 1 (see table below)
F05.03	Digital input function X4	[18] Multi-speed terminal 3 - Multi-speed mode bit 3 (see table below)
F01.09	Panel-set frequency	Hz - Preset speed with S1,S2,S3 off
F014.00-F14.06	Preset frequencies 1-7 (Hz)	Hz - Preset speed with S1, S2, S3 enabled (see table below)



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Preset speed selection table depending on the toggle switch on (0-off). 1 - on)

Toggle switches	S3 Bit 2 (X4)	S2 Bit 1 (X3)	S1 Bit 0 (X2)	S0 START (X1)
STOP	0	0	0	0
START (preset speed in F01.09)	0	0	0	1
F14.00 (1st preset speed) ## Hz	0	0	1	1
F14.01 (2nd preset speed) ## Hz	0	1	0	1
F14.02 (3rd preset speed) ## Hz	0	1	1	1
F14.03 (4th preset speed) ## Hz	1	0	0	1
F14.04 (5th preset speed) ## Hz	1	0	1	1
F14.05 (6th preset speed) ## Hz	1	1	0	1
F14.06 (7th preset speed) ## Hz	1	1	1	1

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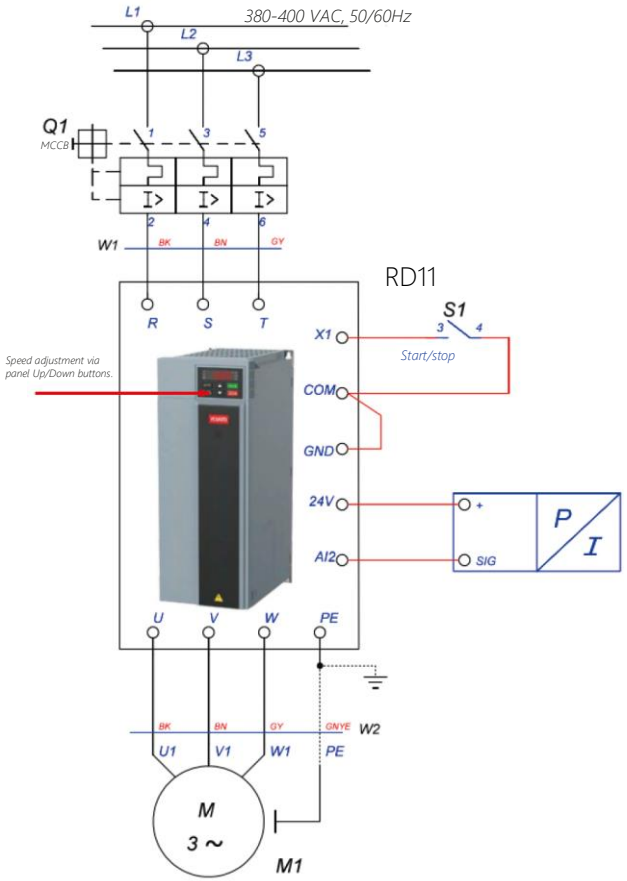
Pump Start with Pressure Feedback sensor.

PID process control for pressure maintenance.

Setpoint from FC panel.

"Sleep mode" function.

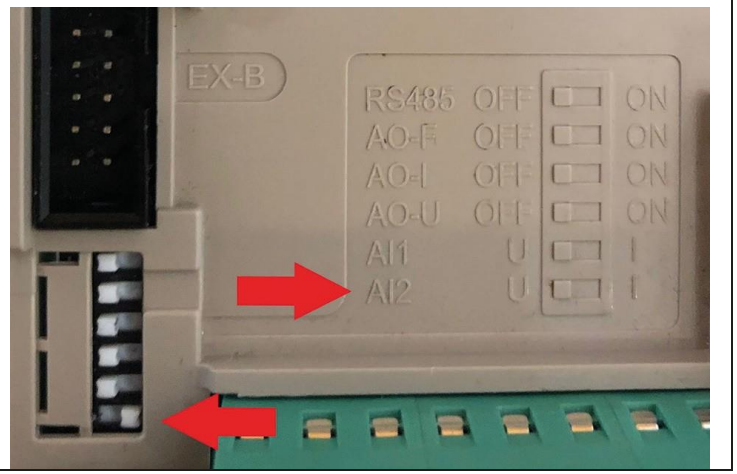
Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F01.00	Motor control mode	[1] AM open loop vector
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F02.07	Motor Auto-Tuning	[2] Static self-learning - to start, set [2] and click "Start" in the panel
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Reference source selection	[8] PID control
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.42	AI2 signal type	[1] Current - current loop 0...20 mA
F05.55	AI2 lower limit	[20]% - Lower AI2 range (4mA)
F05.57	AI2 upper limit	[100]% - Upper AI2 range (20mA)
F11.11	Display parameter	[0008] - PID setpoint display
F13.00	PID setpoint source	[0] - Panel control



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Parameter ID	Parameter	Set value
F13.01	PID panel setpoint	[40]%, determined individually on site
F13.03	PID feedback source	[3] AI2 - AI2 Source
F13.11	P gain (proportional gain)	[0.200] - determined individually, on site
F13.12	I time (integration time)	[2 sec] - determined individually, on site
F13.23	Pump minimum speed limit (Lower limit of PID output signal)	[40] % - set according to pump manufacturer's recommendations
F13.29	Sleep mode activation	[1] - activating sleep mode
F13.30	Sleep activation frequency	[Hz] - activation of the timer when this frequency is reached, determined individually, on site
F13.31	Sleep delay time	[sec] - transition to the sleep mode after expiration of the timer time by place, not lower than the speed in F13.23 parameter
F13.32	Wake-up pressure drop threshold	[%] Set as % of pressure setpoint
F13.33	Wake-up delay	[sec.] - sleep delay after standstill

Before connecting pressure sensor, switch AI2 to current mode.



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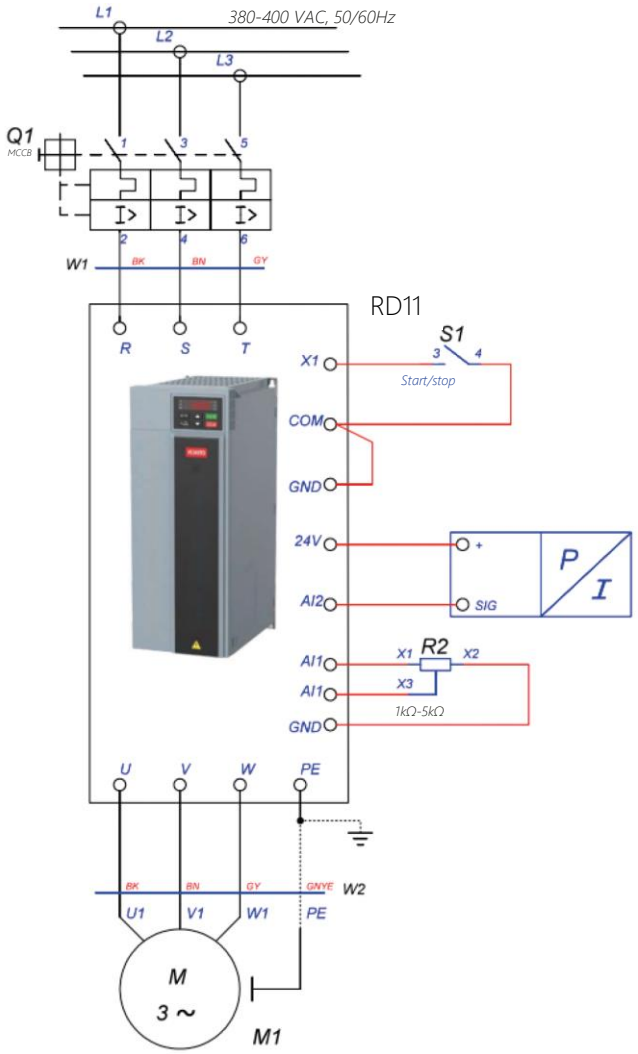
Pump Start with Pressure Feedback sensor (Potentiometer Setpoint)

PID process control for pressure maintenance.

Setpoint from analog input AI1.

"Sleep mode" function.

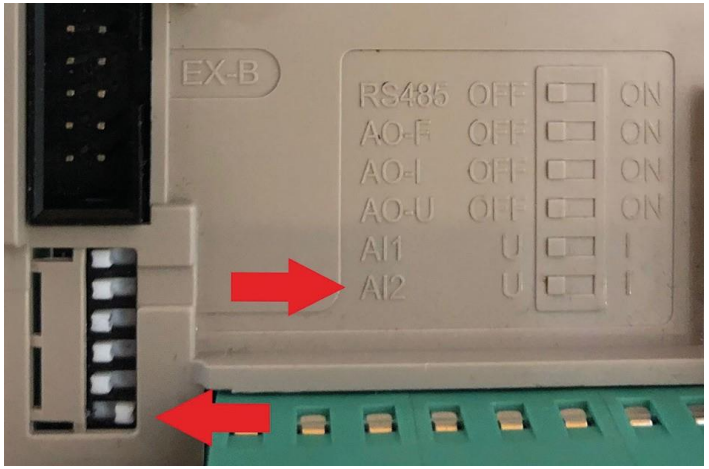
Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F01.00	Motor control mode	[1] AM open loop vector
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F02.07	Motor Auto-Tuning	[2] Static self-learning - to start, set [2] and click "Start" in the panel
F01.01	Command source selection	[1] Terminal control - Commands via control terminals
F01.02	Reference source selection	[8] PID control
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F05.00	Digital input function X1	[1] Forward running - Start forward command
F05.42	AI2 signal type	[1] Current - current loop 0...20 mA
F05.55	AI2 lower limit	[20]% - Lower AI2 range (4mA)
F05.57	AI2 upper limit	[100]% - Upper AI2 range (20mA)
F11.11	Display parameter	[0008] - PID setpoint display
F13.00	PID setpoint source	[2] - Pressure setpoint source analog input AI1



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Parameter ID	Parameter	Set value
F13.03	PID feedback source	[3] AI2 - Pressure sensor input analog input AI2
F13.11	P gain (proportional gain)	[0.200] - determined individually, on site
F13.12	I time (integration time)	[2 sec] - determined individually, on site
F13.23	Pump minimum speed limit (Lower limit of PID output signal)	[40] % - set according to pump manufacturer's recommendations
F13.29	Sleep mode activation	[1] - activating sleep mode
F13.30	Sleep activation frequency	[Hz] - activation of the timer when this frequency is reached, determined individually, on site
F13.31	Sleep delay time	[sec] - transition to the sleep mode after expiration of the timer time by place, not lower than the speed in F13.23 parameter
F13.32	Wake-up pressure drop threshold	[%] Set as % of pressure setpoint
F13.33	Wake-up delay	[sec.] - sleep delay after standstill

Before connecting pressure sensor, switch AI2 to current mode.



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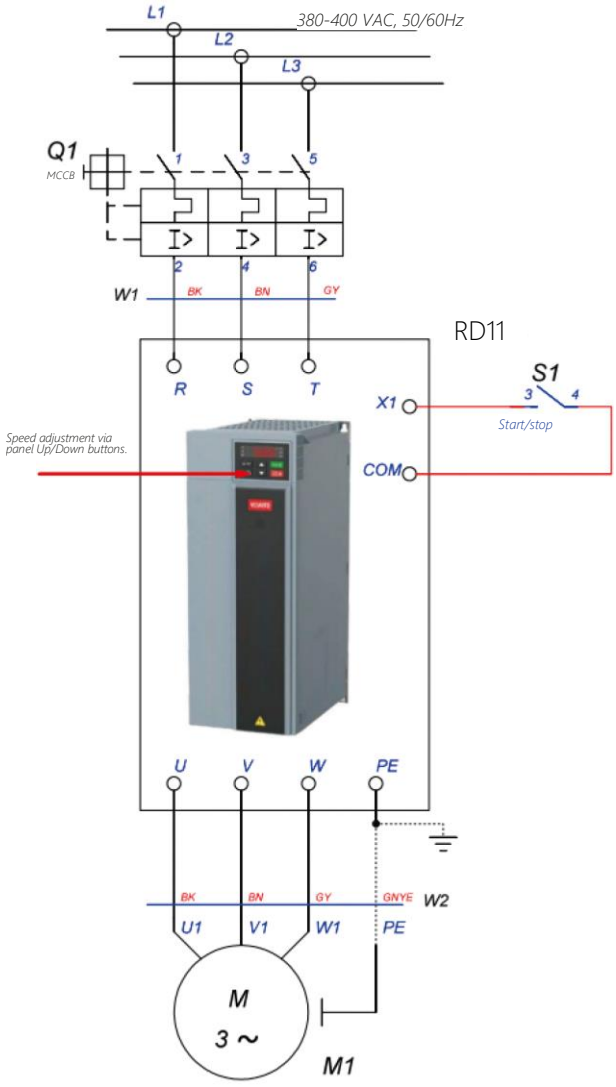
Fan Start with Flying Restart Capability

Start/Stop using toggle switch.

Fan coasting stop.

Fan speed adjustment via FC panel Up/Down buttons.

Parameter ID	Parameter	Set value
F00.03	Parameter reset	[22] Initialization - Reset to factory settings
F01.00	Motor control mode	[1] AM open loop vector
F02.01	Number of motor poles	pcs. - From motor nameplate
F02.02	Rated power	kW - From motor nameplate
F02.03	Rated frequency	Hz - From motor nameplate
F02.04	Rated speed	rpm - From motor nameplate
F02.05	Rated voltage	V - From motor nameplate
F02.06	Rated Current	A - From motor nameplate
F02.07	Motor Auto-Tuning	[2] Static self-learning - to start, set [2] and click the Start button on the panel
F01.01	Command source selection	[1] Terminal control - control terminals
F01.02	Reference source selection	[0] Keyboard control - Commands via Up/Down keys
F01.22	Acceleration time	sec. - Determined individually onsite
F01.23	Braking time	sec. - Determined individually onsite
F05.00	Digital input function X1	[1] Forward running
F07.00	Startup mode	[2] Start after speed tracking - Fan Flying Restart
F07.10	Shutdown mode	[1] Free stop – coasting stop.



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Dated 08.09.2025

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