Commissioning of the frequency converter
VEDA-IN DRIVES RD05

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General Information about the RD05 Frequency Converter with a Three-Phase Asynchronous Motor

This manual provides connection and configuration procedures for operating the VEDA-IN DRIVES RD05 frequency converter with three-phase induction motors.

Manual and literature

Before installation and startup, carefully review the "VEDA-IN DRIVES RD05 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. High voltage may persist in the DC circuit even after LEDs turn off. Before touching potentially dangerous live parts of drives of all sizes—from A1 to A4—wait at least five minutes.

• The frequency converter must be properly grounded.

• The "Stop" button on the operator panel does not function as a protective switch. —it does not de-energize the frequency converter.

Checking the Component Match

1. Verify the converter's code number with the one ordered, according to the table below.

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.

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

3. Ensure that the motor's rated voltage does not exceed the output voltage of the frequency converter. 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.

Ordering code	Type code	Output power, kW	Rated output current, A	Overload current 150%, A	Thermal loss, W	H × W × D, mm
11A00AAA001	RD05-S2-0004-IP20-BU	0.75	4	6	30	177×65×148
11A00AAA002	RD05-S2-0007-IP20-BU	1.5	7	10.5	60	202×75×163
11A00AAA003	RD05-S2-0010-IP20-BU	2.2	10	15	88	
11A00AAA004	RD05-T4-0003-IP20-BU	0.75	3	4.5	30	177×65×148
11A00AAA005	RD05-T4-0004-IP20-BU	1.5	4	6	60	
11A00AAA006	RD05-T4-0005-IP20-BU	2.2	5	7.5	88	
11A00AAA007	RD05-T4-0009-IP20-BU	4	9.5	14.25	160	202×75×163
11A00AAA008	RD05-T4-0013-IP20-BU	5.5	13	19.5	220	
11A00AAA009	RD05-T4-0016-IP20-BU	7.5	16	24	300	320×130×161
11A00AAA010	RD05-T4-0025-IP20-BU	11	25	37.5	440	
11A00AAA011	RD05-T4-0032-IP20-BU	15	32	48	600	342.5 × 170 × 183
11A00AAA012	RD05-T4-0038-IP20-BU	18.5	38	57	740	
11A00AAA013	RD05-T4-0045-IP20-BU	22	45	67.5	880	

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 ventilation 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. Not recommended to operate the frequency converter: Below −10°C or Above +50°C, since it may accelerate product service life reduction.

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 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	Size specification	Fastening	Tightening torque, N·m	Recommended cross-section of copper conductors, mm²	Weight, kg
220	0.75	A1	M4	1.2–1.5	2.5	1.1
	1.5	A2			2.5	1.1
	2.2	A2			4	1.5
380	0.75	A1			1.5	1.1
	1.5	A1			2.5	1.1
	2.2	A1			2.5	1.1
	4	A2			4	1.5
	5.5	A2			6	1.5
	7.5	A3			6	4.1
	11	A3			10	4.1
	15	A4	M5	2–3	10	6.32
	18	A4			16	6.49
	22	A4			16	6.49

2. Each drive must be grounded individually. Grounding cable length must be minimized. Recommended cross-section of grounding cables: 4 mm² (A1, A2, and A3) and 16 mm² (A4).

ATTENTION! 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

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 buttons	"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

Drive Terminal Block Layout
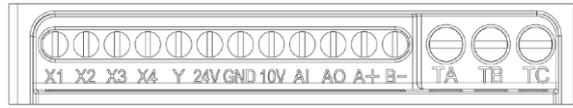
Frequency converter with a power of 0.4–5.5 kW
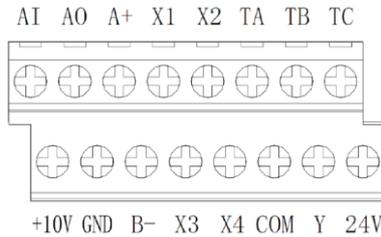
Frequency converter with a power of 7.5–22 kW

Electrical Connection Diagram
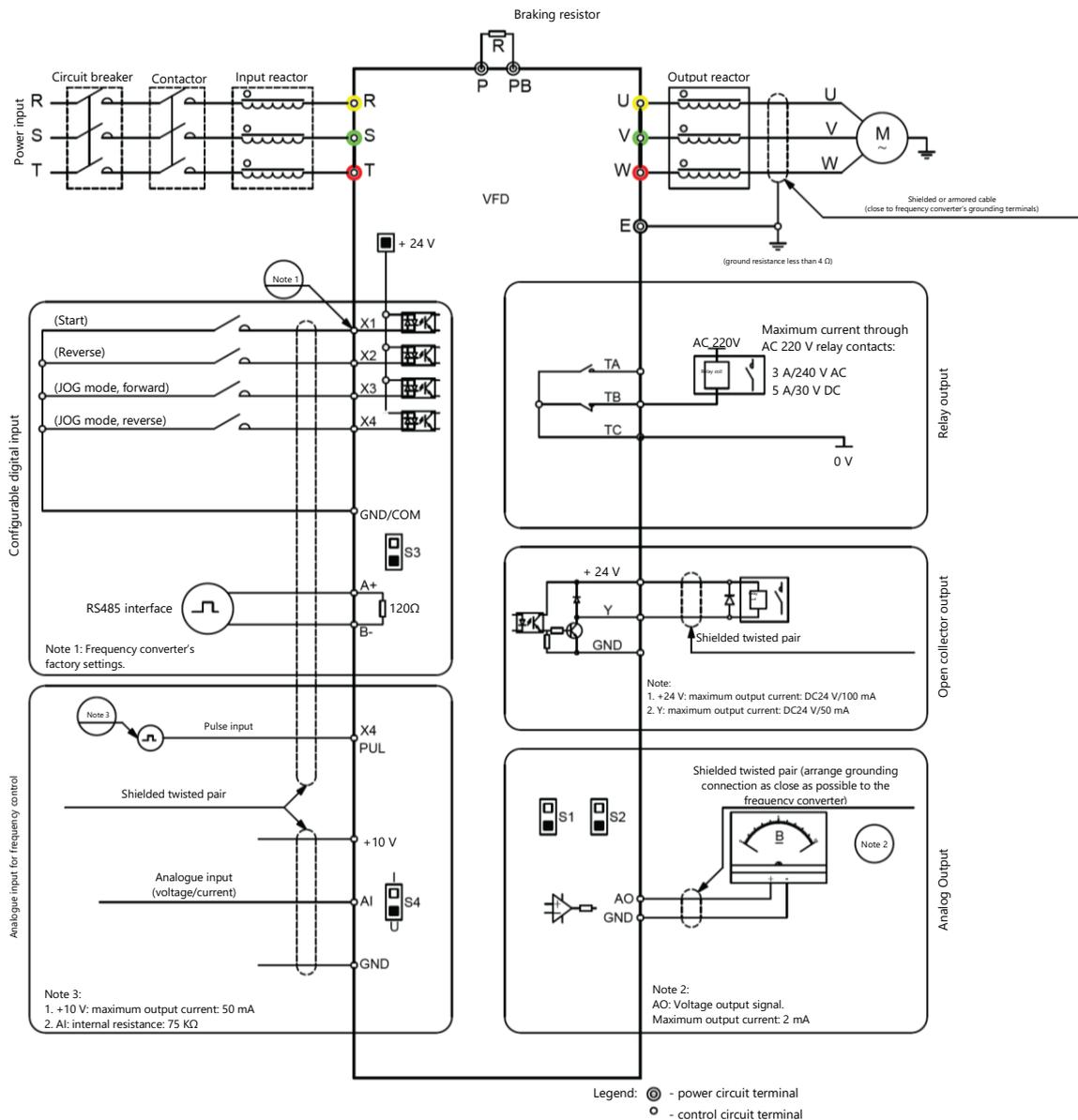
*In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."*
In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."

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 RD05: Access parameter menu.
Set parameter «F00.03» to value «22»
Initialization options:

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.

FC Preparation Algorithm for Application Setup

```
                        ┌─────────────┐
                        │    Start    │
                        └─────────────┘
                               │
        ┌──────────────────────────────────────────────┐
        │ Make sure that motor and FC wiring are       │
        │ connected correctly. Refer to connection     │
        │ diagrams on the nameplate and terminal box   │
        └──────────────────────────────────────────────┘
                               │
        ┌──────────────────────────────────────────────┐
        │ Perform initialization of the frequency      │
        │ converter                                    │
        │ (see p.9)                                    │
        └──────────────────────────────────────────────┘
                               │
        ┌──────────────────────────────────────────────┐
        │ Set parameters F02.01-F02.06 per motor       │
        │ nameplate (see p.9)                          │
        └──────────────────────────────────────────────┘
                               │
        ┌──────────────────────────────────────────────┐
        │ Press the 'Start' button on the control panel.│
        └──────────────────────────────────────────────┘
                               │
                  ◇ Is the motor rotation direction correct? ◇──No──┐
                               │ Yes                                │
                                                      ┌─────────────────────────────┐
                                                      │ De-energize the frequency   │
                                                      │ converter (FC). Swap any two│
                                                      │ output phases (e.g., U and V).│
                                                      └─────────────────────────────┘
                  ◇ Is the mechanical load connected to the motor? ◇
              Yes │                                           │ No
    ┌──────────────────────────┐              ┌──────────────────────────┐
    │ Use adaptation without   │              │ Use adaptation with      │
    │ rotation. In parameter   │              │ rotation. In parameter   │
    │ F02.07, set value [2].   │              │ F02.07, set value [1].   │
    │ Press the "Start" button │              │ Press the "Start" button │
    │ and wait till the process│              │ and wait till the process│
    │ is finished.             │              │ is finished.             │
    └──────────────────────────┘              └──────────────────────────┘
                  ◇ Did errors occur during the adaptation process? ◇
              Yes │                                   │ No
    ┌──────────────────────────┐         ┌─────────────────────────┐
    │ Press the "Start" button │         │ In parameter F00.01,    │
    │ to verify smooth and     │         │ select the control mode │
    │ correct motor rotation   │         └─────────────────────────┘
    └──────────────────────────┘
    ┌──────────────────────────┐         ┌──────────────────────────────┐
    │ Review the fault cause.  │         │ Push the "start" button,     │
    │ After troubleshooting,   │         │ verify correct motor rotation│
    │ retry the adaptation     │         │ direction and smoothness.    │
    │ procedure                │         │ Push the "Stop\Abort" button │
    └──────────────────────────┘         └──────────────────────────────┘
                                                    │
                                            ┌─────────────┐
                                            │     End     │
                                            └─────────────┘
```

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)
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 Buffering (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, the longer the recommended pause time.
F07.28	Search Current	*120%. Current level for rapid speed detection
Kinetic Buffering (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"
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.

VEDA-IN DRIVES RD05 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)

380-400 VAC, 50/60Hz

Q1
MCCB

RD05

Start
Start/Stop buttons

Reference source
Up/Down buttons

M
3 ~
M1

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 the control panel 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	[0] Keyboard control - Commands via Start/Stop keys
F01.02	Reference source selection	[1] Keyboard analog potentiometer – operator panel 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)
F05.41	AI signal type	[0] Voltage - 0...10V
F05.50	AI signal lower limit	[0]% - AI lower range (0V)

380-400 VAC, 50/60Hz

Q1
MCCB

W1

RD05

Start
Start/Stop buttons

Reference source
Operator panel potentiometer

380-400 VAC, 50/60Hz
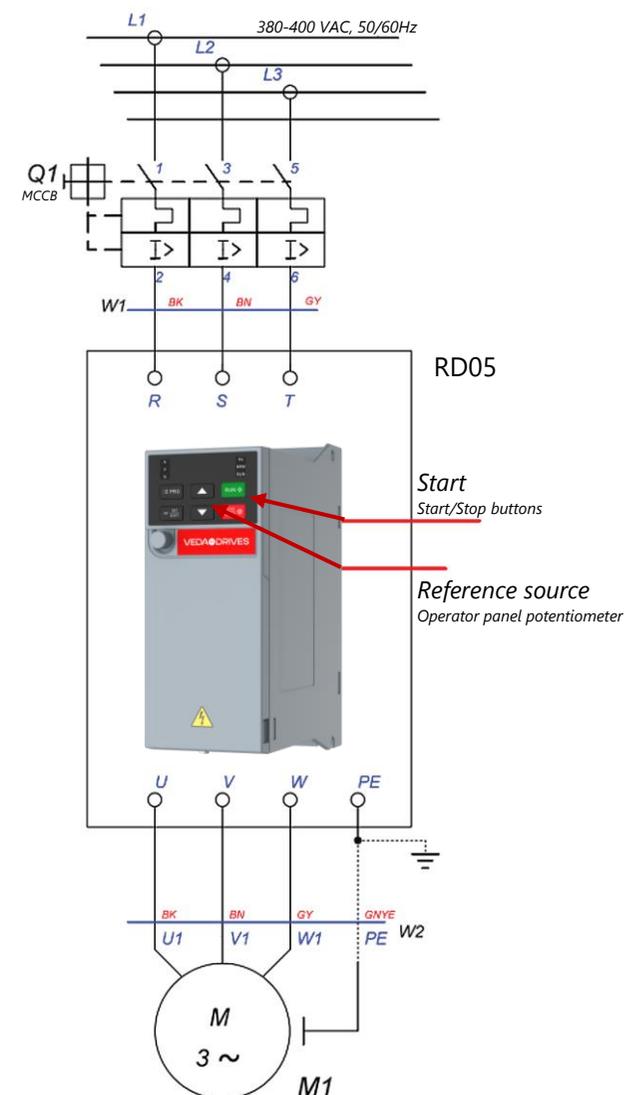
Starting the Drive from a Toggle Switch with Smooth External Potentiometer Adjustment

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.

Attention!
In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."
In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."
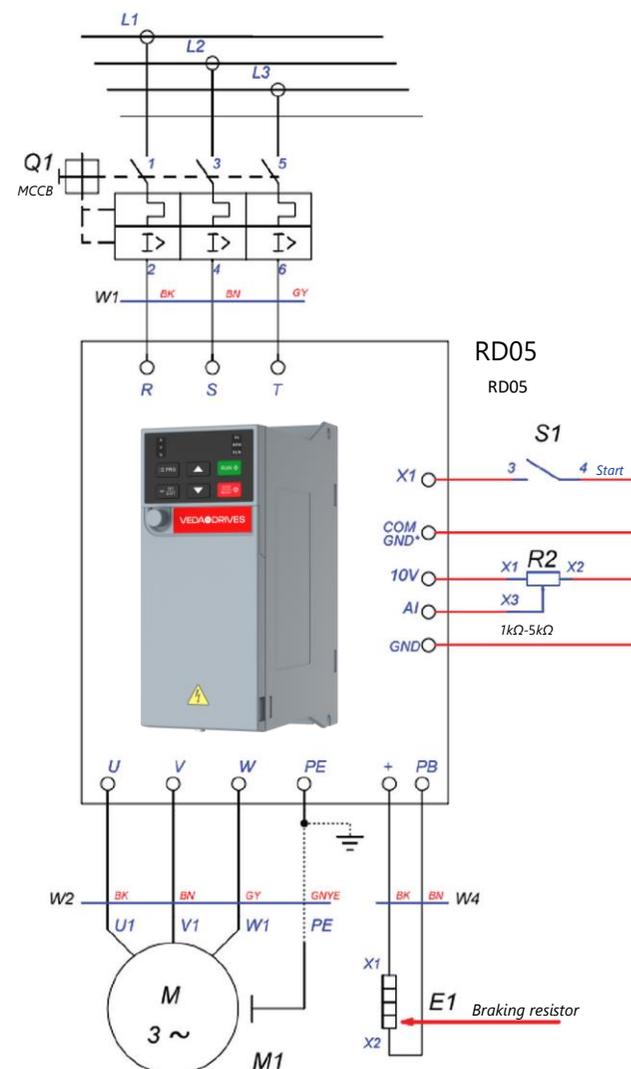
Three-Wire Control Scheme Starting with External Potentiometer Adjustment

Starting using Start/Stop buttons.

Three-wire control system.

Speed adjustment using an 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.

Attention! In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."

In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."
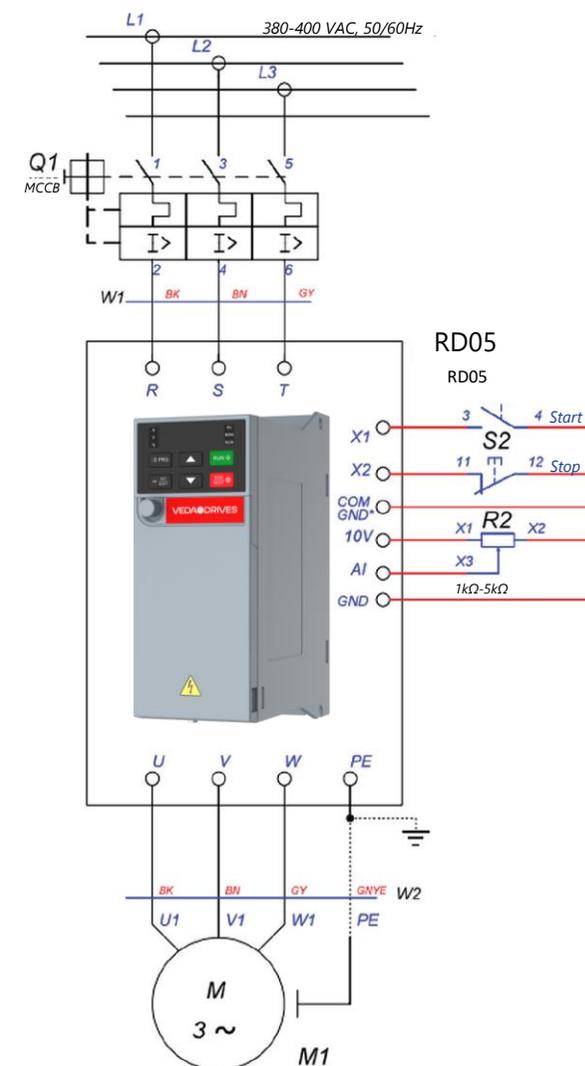
Digital Potentiometer Starting and Speed Control

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] – adjustment of the digital potentionmeter's response speed

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 the "Start" key and wait for the procedure to complete.

Attention!

In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."

In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."
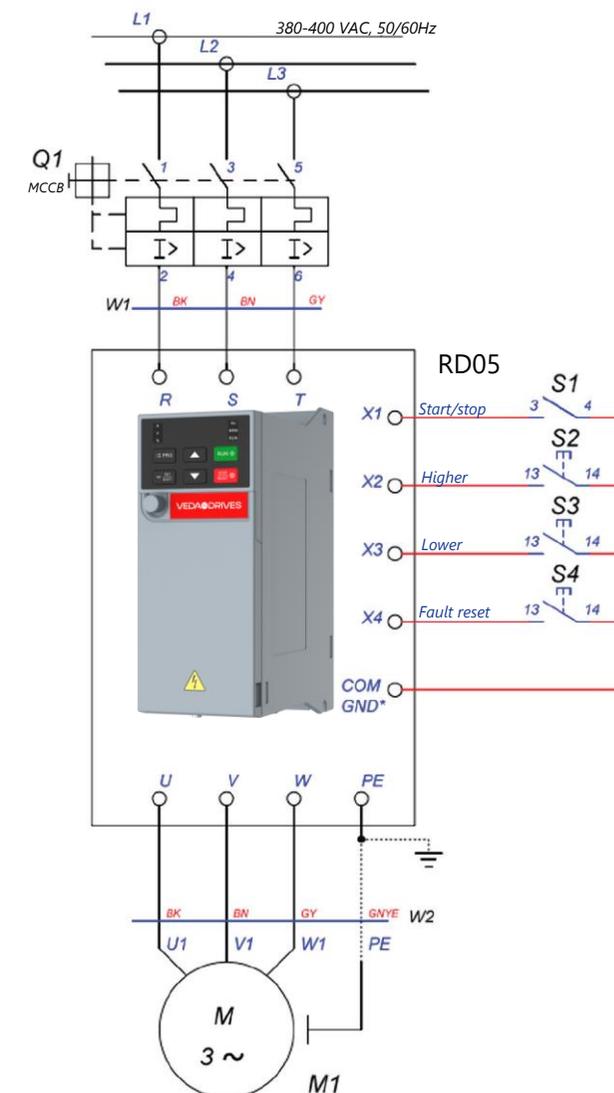
Speed adjustment via toggle switch combinations.

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 0 (see table below)
F05.02	Digital input function X3	[17] Multi-speed terminal 2 – Multi-speed mode 1 (see table below)
F05.03	Digital input function X4	[18] Multi-speed terminal 3 – Multi-speed mode 2 (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)

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 the "Start" key and wait for the procedure to complete.

Attention!

In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."

In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."
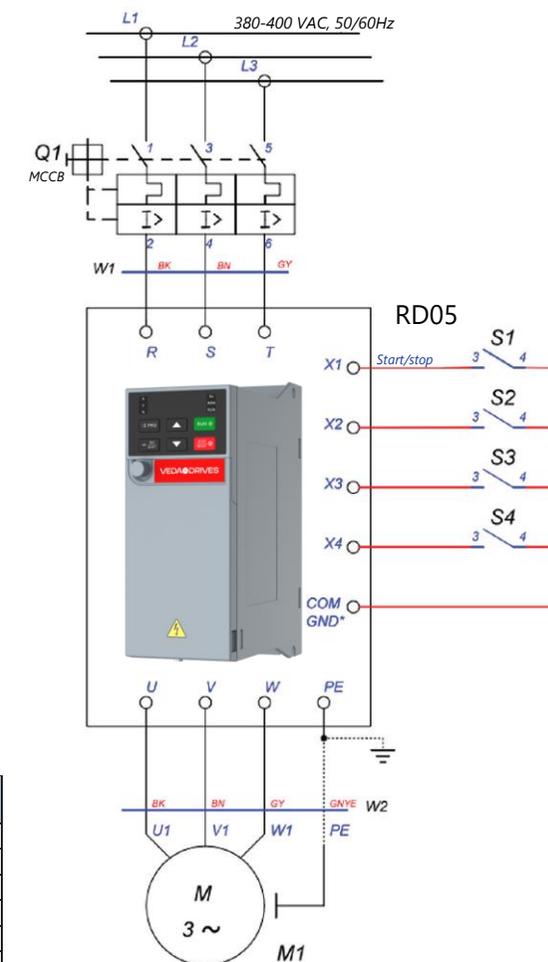
Preset speed selection table depending on the toggle switch on (0-off, 1-on).

| 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

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
F05.41	AI signal type	[1] Current - current loop 0...20 mA
F05.50	AI signal lower limit	[20] % – Lower range of AI (4 mA)
F05.52	Upper limit of AI signal	[100] % – Upper range of AI (20 mA)
F11.11	Display parameter	[0008] - PID setpoint display
F13.00	PID setpoint source	[0] - Panel control
F13.01	PID panel setpoint	[40]%, determined individually on site
F13.03	PID feedback source	[2] AI – AI 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
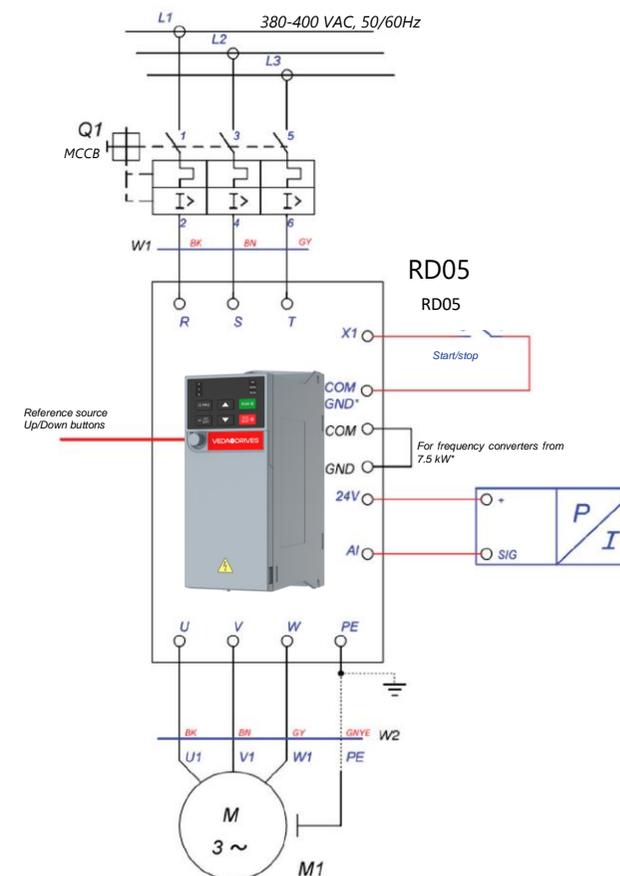
Before connecting pressure sensor, switch AI to current mode.
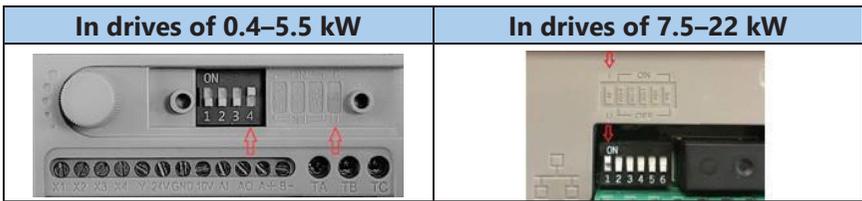
In drives of 0.4–5.5 kW	In drives of 7.5–22 kW

Attention!
In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."
In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."

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.

To switch the logic of PNP digital inputs, reposition the jumper near the terminal block.
This method is available for frequency converters of 7.5–22 kW.
In frequency converters of 0.4–5.5 kW, only NPN logic is available.

Attention!
In drives of 0.4–5.5 kW, the common point for inputs/outputs is "GND."
In drives of 7.5–22 kW, the common point for inputs/outputs is "COM."
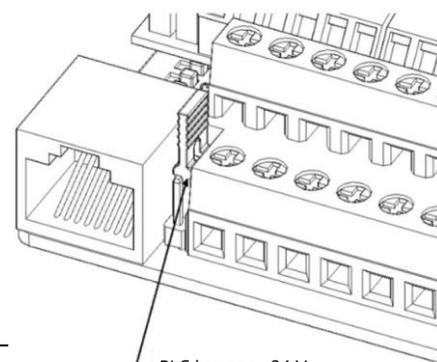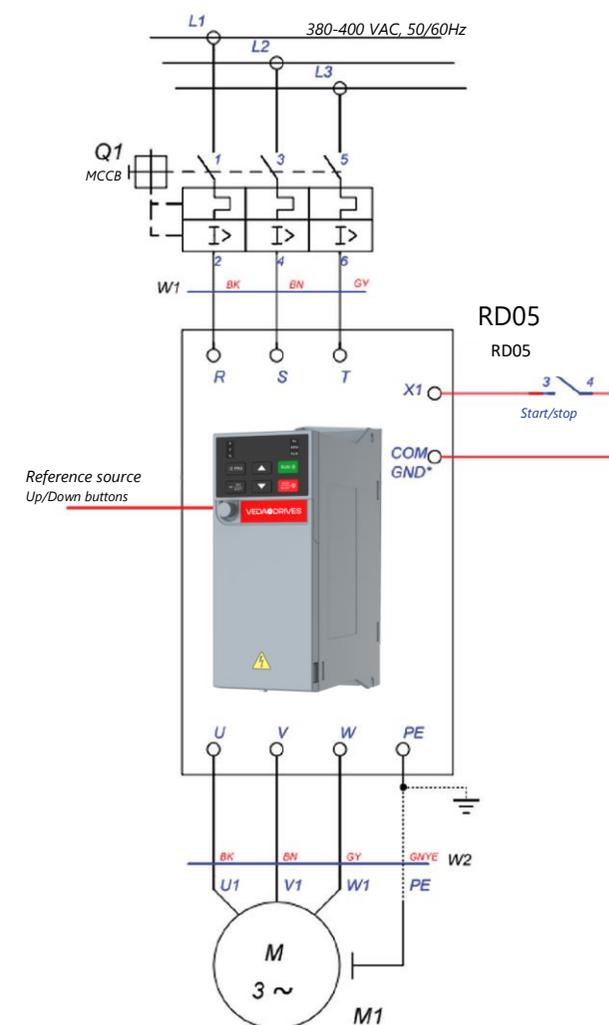
This guide does not replace the operating instructions for the RD05 frequency converter.

VEDA-IN DRIVES has tested and verified the information in this manual.
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