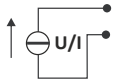
Electrical Installation

Flexible I/O configuration

Default setting
*P201.01
(configured AI1 as standard setpoint)



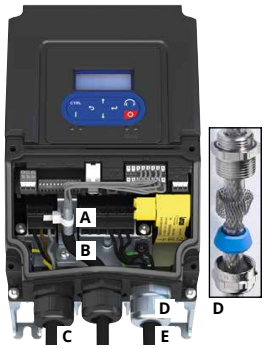
24E	Optional external 24 V supply (only i550)		
GND	GND for analog and digital signals		
AI1	Analog input 1	Config.:	*P430.01 **(0 ... 10 VDC signal)**
AI2	Analog input 2	Range [Hz]:	*P430.02 - *P430.03
AO1	Analog output 1		
10V	10 VDC, supply for potentiometer		
24V	24 VDC, 100 mA supply, reference for digital inputs		
DI1	Digital input 1		
DI2	Digital input 2		
DI3	Digital input 3		
DI4	Digital input 4		
DI5	Digital input 5		
DO1	Digital output 1		
GND	GND for analog and digital signals		

*P400.02 Start
*P400.04 Reset error

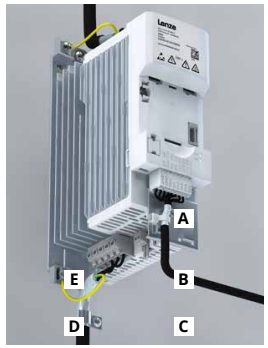
*P420.02 DO1 triggered when **Running**

*P420.01 Relay triggered when **Ready for operation set**

NO	Relay NO-contact
COM	Relay Middle contact
NC	Relay NC-contact



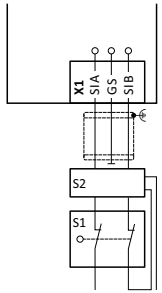
- **A** Shielding of control connections
- **B** Control cable
- **C** Mains cable
- **D** EMC cable gland
- **E** Low-capacitance motor cable

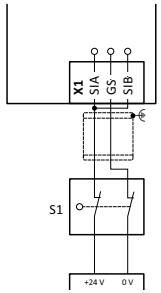


- **A** Shielding of control connections
- **B** Control cable
- **C** Mounting plate with conductive surface
- **D** Shield connection for motor cable (alternatively: shield connection on an optional motor shield plate)
- **E** Low-capacitance motor cable

Optional STO installation

STO

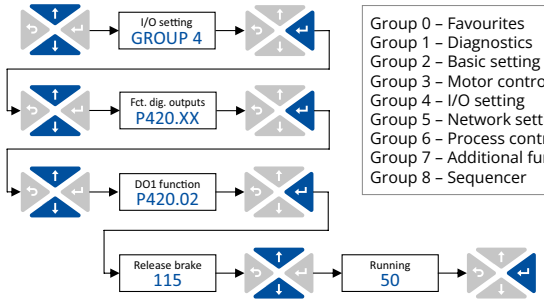




External power supply unit or 24 V output of X3

- The transmission of the pulse width modulation is safely switched off by STO. The power drivers do not generate a rotating field anymore.
- The motor is safely switched to torqueless operation

Keypad Control



Group 0 – Favourites
Group 1 – Diagnostics
Group 2 – Basic setting
Group 3 – Motor control
Group 4 – I/O setting
Group 5 – Network setting
Group 6 – Process controller
Group 7 – Additional functions
Group 8 – Sequencer

Group 0 - Favourites: Quick access to most important parameters (*)

↑ ↓	Navigation in the menu Parameter alteration
↵	Go to Menu/Parameters Confirm parameter
↩	Quit Menu/Parameters
CTRL	Keypad control
I	Start motor
R F	Change direction of rotation
O	Stop motor

Basic Set-Up (U/f-mode)

Parameter	Description	Default	Proposal	Comment
P700:001	Load factory defaults	0	1	
P210.000	Minimum Frequency	0.00	25.00	
P211.000	Maximum Frequency	50.00	70.00	
P220.000	Acceleration Ramp 1	5.00	0.80	Fast acceleration for correct lubrication till 25 Hz.
P221.000	Deceleration Ramp 1	5.00	2.00	
P222.000	Acceleration Ramp 2	5.00	10.00	
P223.000	Deceleration Ramp 2	5.00	10.00	
P224.000	Auto Changeover Threshold Acceleration Ramp 2	0.00	25.00	
P316.002	V/f Voltage Boost	0.00	Feb 50	For quicker start-up
P320.004	Motor Parameter: Rated Speed	1450	1450	According to the motor plate
P320.005	Motor Parameter: Rated Frequency	50	50	According to the motor plate
P320.007	Motor Parameter: Rated Voltage		400 / 480V	According to the motor plate
P322.000	Max. Motor Speed	6075	2450	According to the motor plate
P323.000	Motor Parameter: Rated Current	variable	45.70	According to the motor plate
P400.001	Enable Inverter	0	1	
P400.002	Run	0	11	Digital input 1
P420.01	Digital outputs function: Relay	51	51	Ready for operation
P420.02	Digital outputs function: DO	115	50 Alternatively: 155	Inverter is “running” Alternatively: STO active
P700.0.03	Save User Data	0	1	Saves Parameters to Memory

Optimization

Parameter	Description	Default	Proposal	Comment
P300.000	6	4	Motor Control Mode	SLVC (Sensorless Vector Mode)
P301.000	2	1	SLVC Operating Mode	Change from Speed to Torque Mode
P327.004	0	1	Autotuning	Activation

Diagnostics

Diagnostics		
*P100.00 Output frequency [Hz] P102.00 Frequency setpoint [Hz]	*P103.00 Actual current [%] (100 % = Rated motor current)	P125.01 Active control source P125.02 Active setpoint source

LED “RDY” (blue)	LED “ERR” (red)	State/meaning
off	off	No supply voltage
		Initialisation (inverter is started)
 blinking	off	Safe torque off (STO) active. The inverter has been disabled by the integrated functional safety. (Optional, i550 only)
	 blinking fast	Safe torque off (STO) active, warning present. The inverter has been disabled by the integrated functional safety. (Optional, i550 only)
 blinking	off	Inverter disabled
	 blinking fast	Inverter disabled, warning present.
		Inverter disabled, error active.
	 on briefly every 1.5 s	Inverter disabled, no DC-bus voltage.
	off	Inverter enabled. The motor rotates according to the specified setpoint or quick stop active.
	 blinking fast	Inverter enabled, warning present. The motor rotates according to the specified setpoint or quick stop active.
	 blinking	Inverter enabled, quick stop active as response to a fault.

Error message	Cause (W. = Warning, T. = Fault, F. = Error)	Remedy
.2382/.2383	Ixt error/Ixt warning	Reduce load, adapt ramps
.3210/.3211	Overvoltage DC bus/ Warning Overvoltage DC bus	Reduce dynamic performance of the load profile, check mains voltage, check settings for brake energy management
.3220/.3221	Undervoltage DC bus/ Warning Undervoltage DC bus	Check mains voltage, check DC-bus voltage (P105.00), check mains settings, check fuses
.3222	DC-bus voltage to low for switch-on	
.4310	Motor overtemperature problem (PTC)	Check ambient temperature and motor load
.6280	Trigger/functions incorrectly connected	In the case of **Flexible I/O configuration** (*P200.01), **Inverter enable** (*P400.01) or **Start** (*P400.02) must have been assigned to an I/O. Do not use **Start forwards/reverse** and **Run forwards/reverse** at the same time!
.FF37	Automatic start inhibited	Deactivate starting command and reset error