Quick start guide

Rotary table control TIC v2.xx and v3.xx

TAKTOMAT

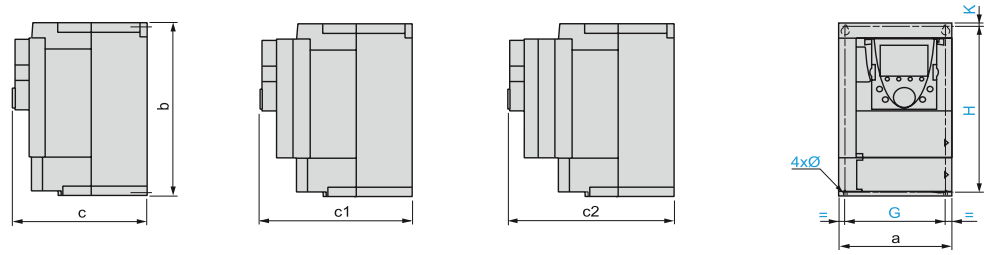
passion for automation

1. Dimensions

Frequency converter/Altivar 71 /Converter IP 20/UL Type 1

ATV 71H●●● M3, ATV 71HD11M3X, HD15M3X, ATV 71H075N4...HD18N4

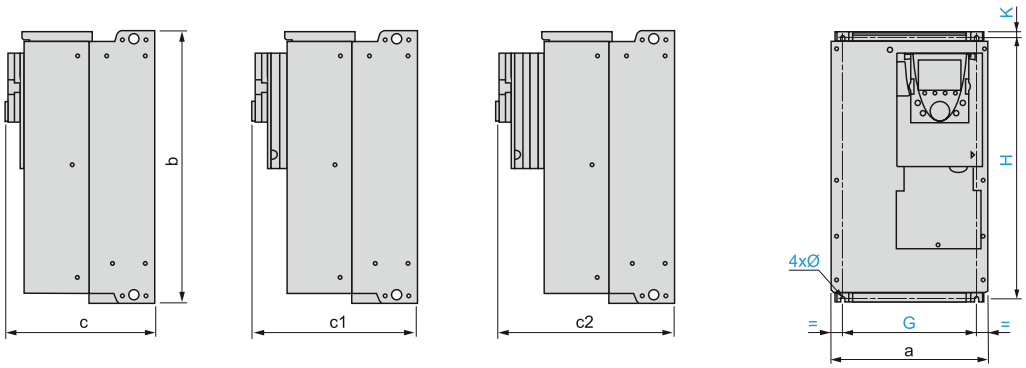
Without additional card | **1 additional card** *(1)* | **2 additional cards** *(1)* | **Joint front view**



ATV 71H	a	b	c	c1	c2	G	H	K	Ø	Weight kg
037M3...U15M3, 075N4...U22N4	130	230	175	198	221	113,5	220	5	5	3,000
U22M3...U40M3, U30N4, U40N4	155	260	187	210	233	138	249	4	5	4,000
U55M3, U55N4, U75N4	175	295	187	210	233	158	283	6	5	5,500
U75M3, D11N4	210	295	213	236	259	190	283	6	6	7,000
D11M3X, D15M3X, D15N4, D18N4	230	400	213	236	259	210	386	8	6	22,000

ATV 71HD18M3X...45M3X, ATV 71HD22N4...HD37N4, ATV 71HU22Y…HD30Y

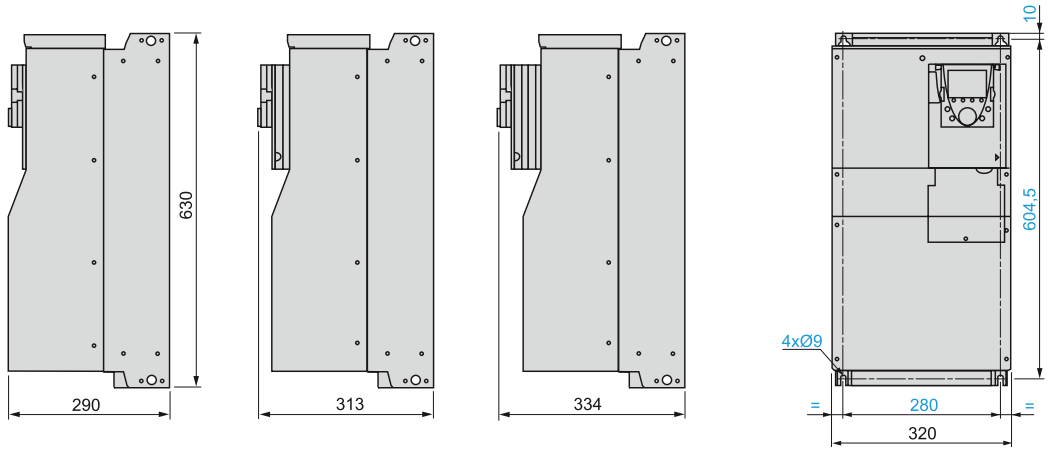
Without additional card | **1 additional card** *(1)* | **2 additional cards** *(1)* | **Joint front view**



ATV 71H	a	b	c	c1	c2	G	H	K	Ø	Weight kg
D18M3X, D22M3X, D22N4, U22Y…D30Y	240	420	236	259	282	206	403	10	6	30,000
D30N4, D37N4	240	550	266	289	312	206	529	10	6	37,000
D30M3X...D45M3X	320	550	266	289	312	280	524	10	9	37,000

ATV 71HD45N4...HD75N4, ATV 71HD37Y…HD90Y

Without additional card | **1 additional card** *(1)* | **2 additional cards** *(1)* | **Joint front view**



(1) Additional cards: E/A expansions cards, communication card or programmable „Drive Controller“ card.

ATV 71H	Weight kg
D45N4…HD75N4	44,000
D37Y…HD90Y	68,000

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2. Installation

3. Parameters

On commissioning or restoring to factory settings, the following parameters must be modified:

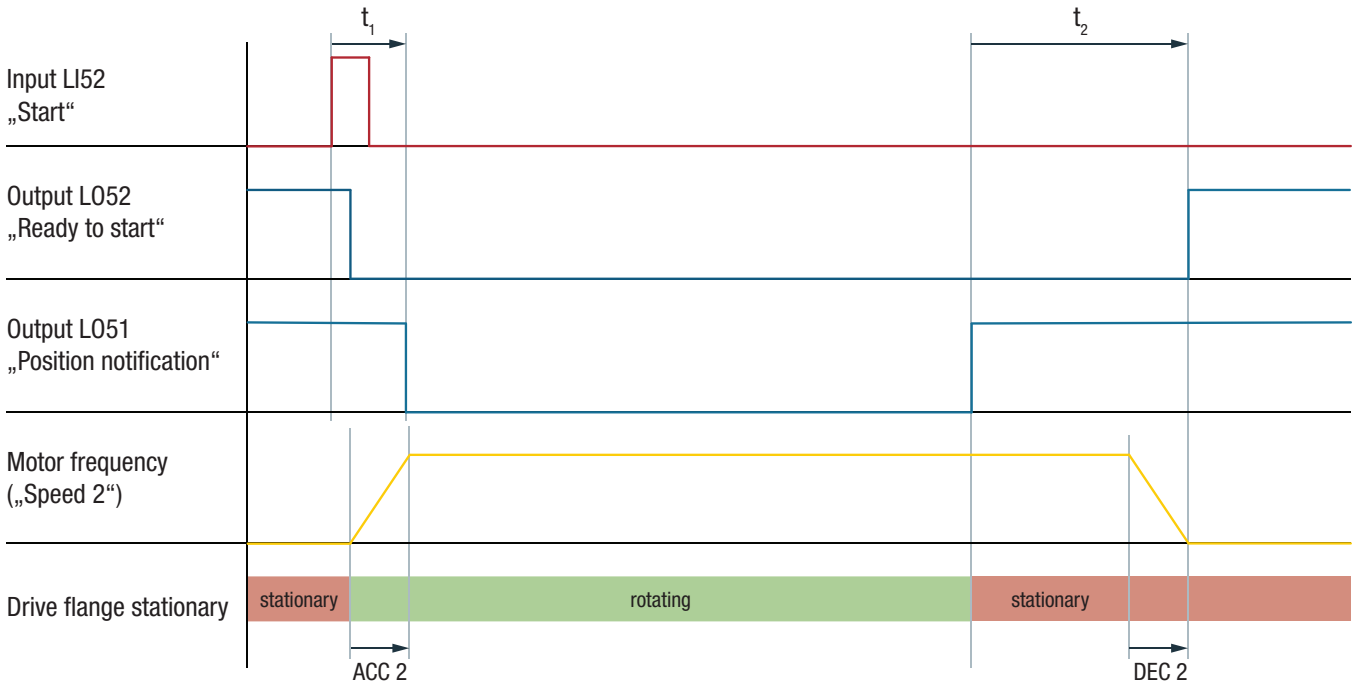
Menu	Designation	Setting
1.1 Quick start	Rated motor power	Copy from type plate
	Rated motor voltage	Copy from type plate
	Rated motor current	Copy from type plate
	Rated motor frequency	Copy from type plate
	Rated motor speed	Copy from type plate
	Low frequency	3 Hz
	High frequency	55 Hz
1.3 Settings	Resolution, ramp	0,01
	P-part v-control	40%
	I part speed cont	100%
	K filt P drv speed	100%
1.5 Inputs/outputs	Configuration R1	No
	Configuration R2	No fault
1.6 Control	Channel, nominal value 1	PLC card
	Profile	separated
1.14 Taktomat GmbH	Speed 1 Auto	25 Hz
	ACC1 Auto	0,02*
	DEC1 Auto	0,02*
	Speed 2 Auto	50 Hz
	ACC2 Auto	0,02*
	DEC2 Auto	0,02*
	Delay for stopping the drive	No
	Delay for stopping the drive %	50
	Time monitoring	t_m + 1s (t_m = Motor running time from start to stop)
	ACC Stop	1.5 s
	DEC Stop	0.3 s*

* Values dependent on size and/or load. Please query with Taktomat.

4. In and out assignment

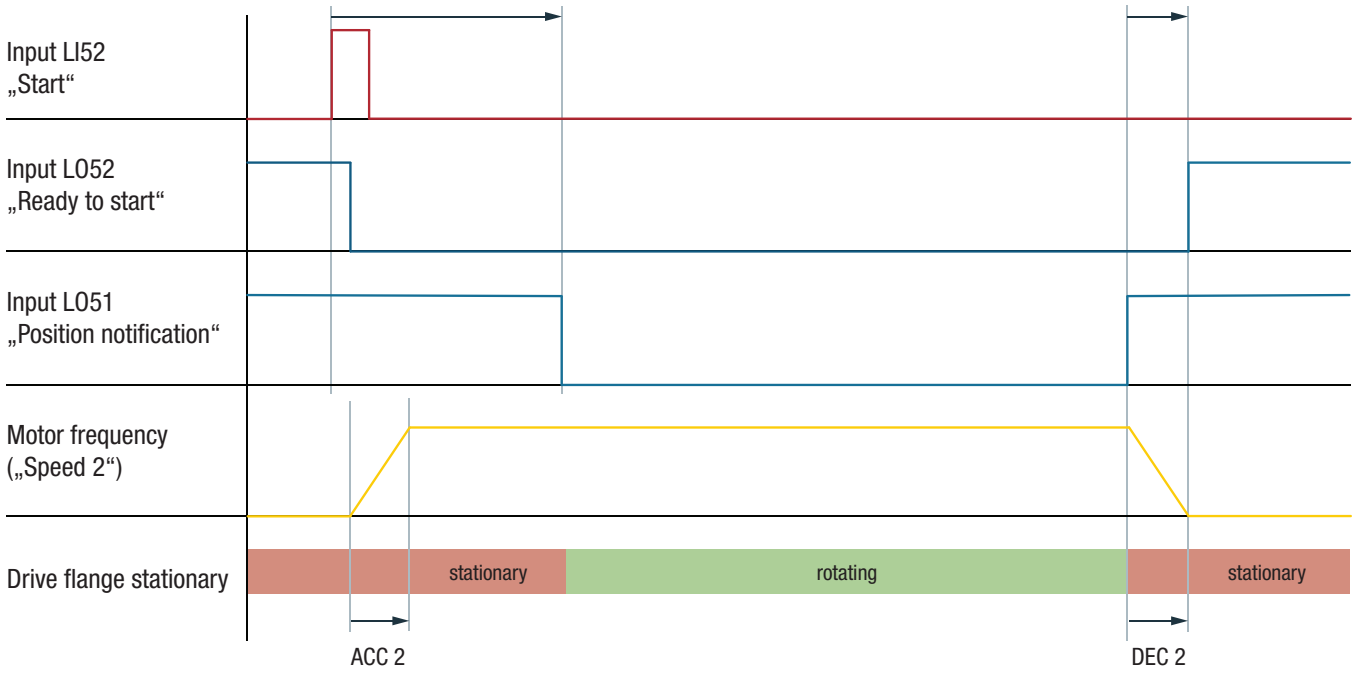
Terminal	Designation	Function
LI1		Bridge to LO55 Open for „personal safety stop“ function
LI2		Bridge to LO56 Open for „personal safety stop“ function
LI5	Monitoring of braking voltage	0 = fault, power supply to brake 1 = power supply to brake OK
LI51	Position sensor	0 = rotary table not in position 1 = rotary table in position
LI52	Start	In automatic mode, flank 0 1 = complete cycle In manual mode 0 = no response In manual mode 1 = rotation at speed 1
LI53	Direction	0 = ccw 1 = cw
LI54	Operating mode	0 = manual mode, speed 1, ramps 1 1 = automatic mode, speed and ramps can be selected via LI56
LI55	Measurement run	Flank 0 --> 1 starts measurement run
LI56	Speed in automatic mode	0 = slow (speed 1, ramps 1) 1 = fast (speed 2, ramps 2)
LI57	Reset fault	Flank 0 --> 1 clears fault memory
LI58	Stop	Flank 1 --> 0 immediate stop ramp 0 = driving operation not possible 1 = driving operation possible
LO51	Position notification	0 = rotary table not in position 1 = rotary table in position
LO52	Ready to start	0 = drive rotating or converter not ready (fault) or LI54 = 0 1 = ready for next start in automatic mode
LO53	Fault, cycle time	0 = no fault 1 = cycle time exceeded
LO54	Fault, position overrun	0 = no fault 1 = moved from dwell position in automatic mode without prior start signal
LO55		Bridge to LI1 Open for „personal safety stop“ function
LO56		Bridge to LI2 Open for „personal safety stop“ function
R1A/R1C	Fault, braking voltage (see LI5)	Relay not switched = no fault Relay switched = no 24V DC supply for brake on LI5
R2A/R2C	Motor brake output (24V DC)	Relay not switched = brake applied Relay switched = brake not applied

5. Automatic mode, complete cycle, with delay for stopping the drive„Start”



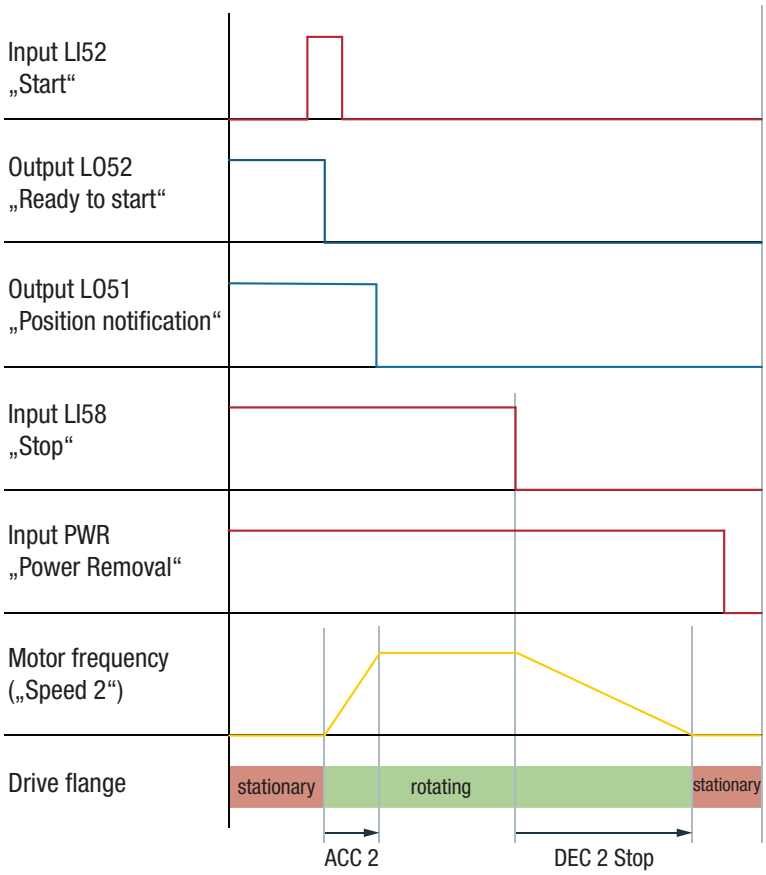
t_1 = time for leaving the position cam
t_2 = time between detecting the position cam and stopping

6. Automatic mode, complete cycle, without delay for stopping the drive

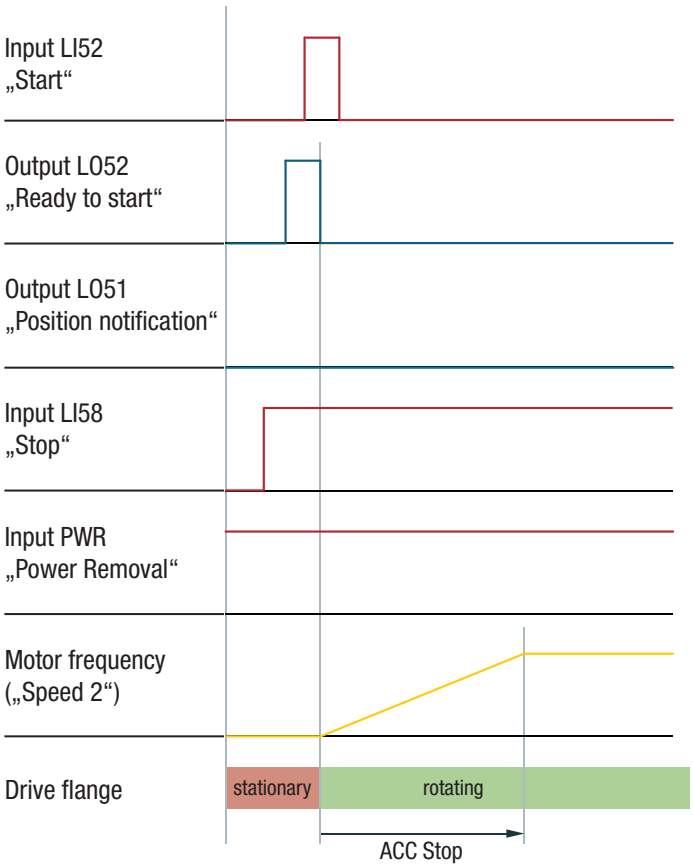


t_1 = time for leaving the position cam
t_2 = time between detecting the position cam and stopping

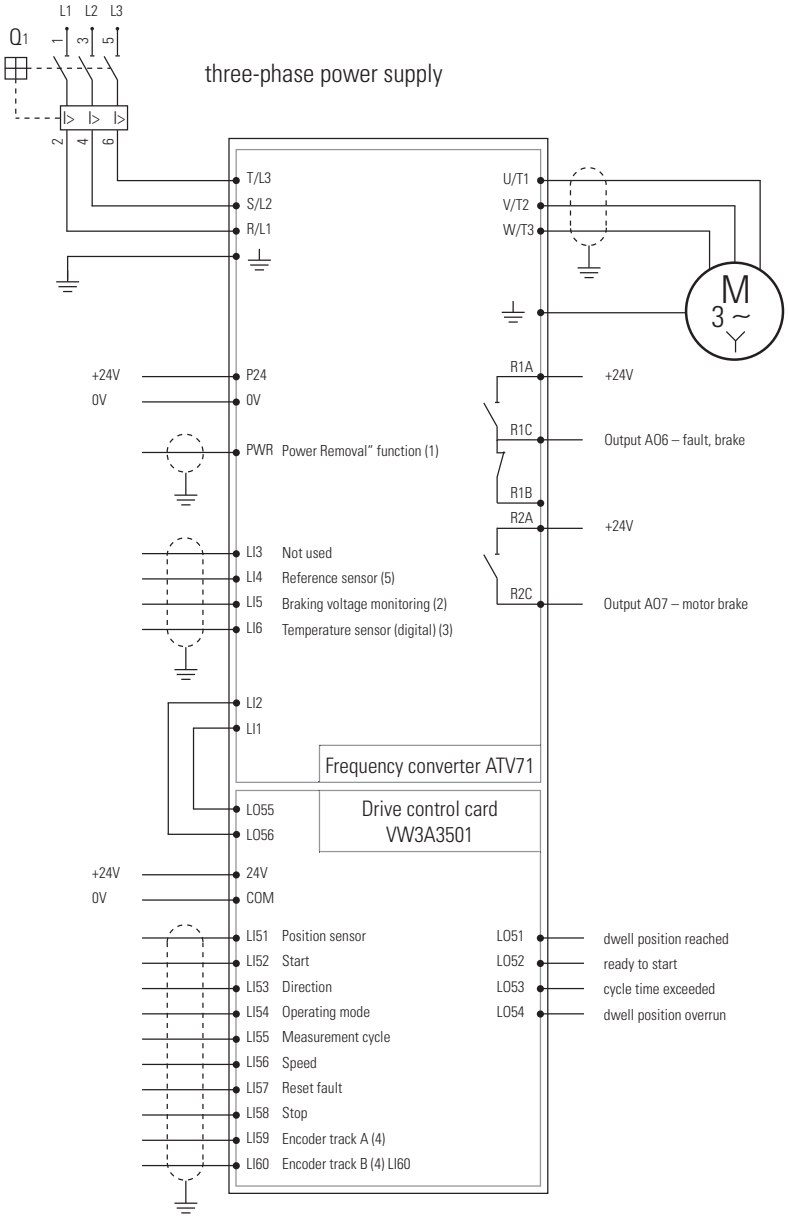
7. Automatic mode, stop during rotation



8. Automatic mode, start from intermediate position



9. Circuit diagram TIC v2.xx and TIC v3.xx without safety module for „personal safety stop“



(1) Standard coax cable, type RG174/U in accordance with MIL-C17 or KX3B in accordance with NFC93-550, external diameter 2.54 mm, max. 15 m long.
The cable shield must be connected to earth.
For further description of the „Power Removal" function, please read the original documentation for frequency converter type Altivar 71.

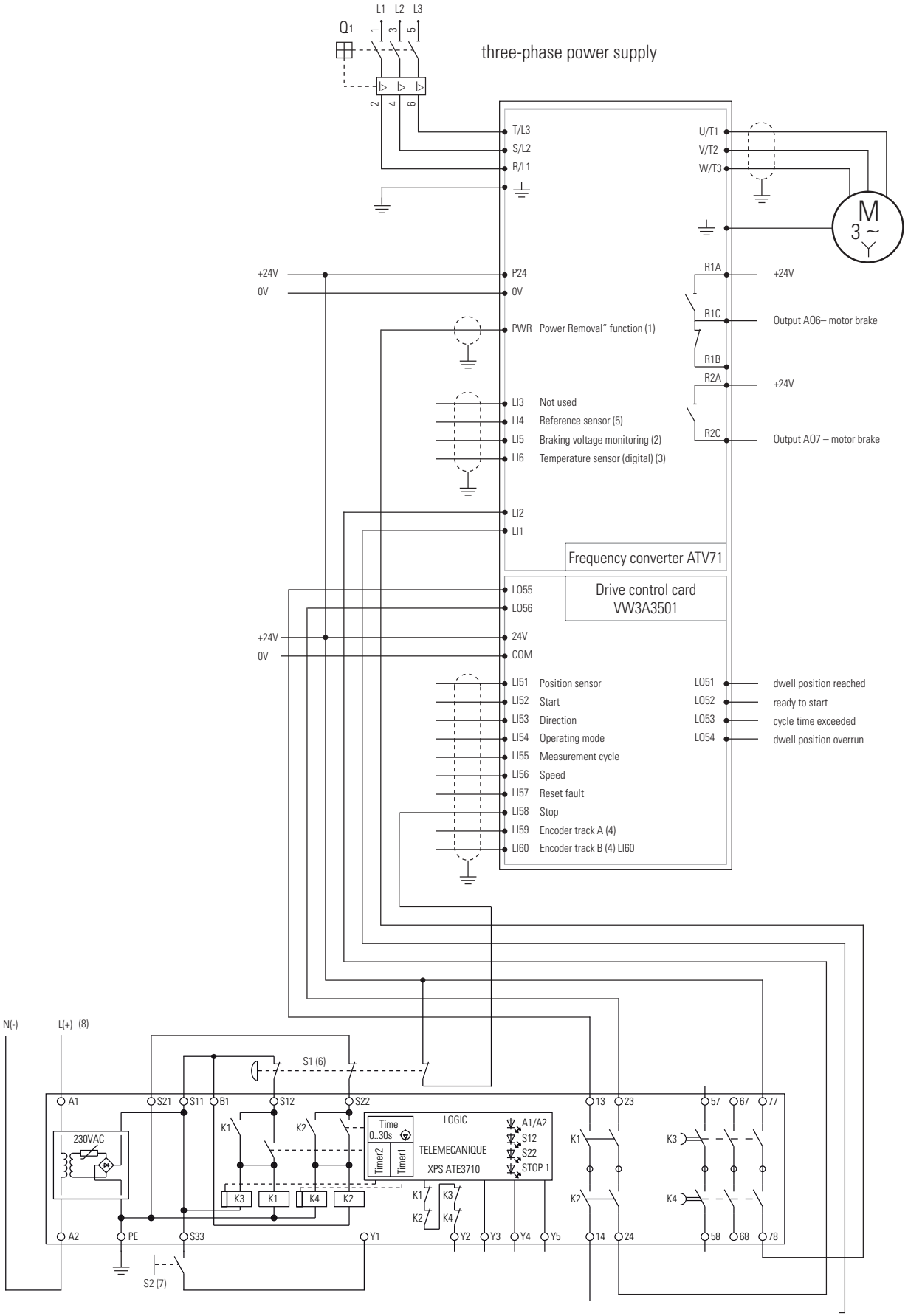
(2) For motor brakes with 24V DC coil voltage, a bridge must be made to R2A.
For motor brakes with other coil voltages, or for operation without a brake, this input must be hard-wired with +24V. In this case, braking voltage monitoring is not possible.

(3) Only digital temperature sensors (thermoclick) are monitored. Analogue thermo sensors cannot be analysed.
When using analogue thermo sensors or for operation without thermo sensors, this input must be hard-wired with +24V. In this case, temperature monitoring is not possible.

(4) Only on rotary tables with „Pitch error compensation" option. On all other rotary tables and stepping gears, these two inputs are left blank.

(5) Only on rotary tables with „Pitch error compensation" option. On all other rotary tables and stepping gears, this input is left blank.

10. Circuit diagram, TIC v2.xx and TIC v3.xx with safety module XPS ATE for „personal safety stop“



S1 Emergency off switch
S2 ON button
(6) „STOP" and „Power Removal" request
(7) Restoration of safety module
(8) Power supply, dependent on type 24 DC, 24 AC, 115 AC, 230 AC

For further clarification, always read the original documentation provided by Schneider Electric (www.schneider-electric.de).

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