

## 4.2 Electrical connection



### DANGER

To avoid the risk of electric shock or fire, make sure that the power supply has been switched off before connecting the equipment, and make sure the earth terminal is reliably grounded.

To avoid arcing and fire, tighten all terminals with the specified torque.

### Caution

For distances (pump to inverter) exceeding 15 m (50 ft), we recommend a sine wave filter with matching current ratings.

### 4.2.1 Output filters

Output filters are used for reducing the voltage stress on the motor windings and the stress on the motor insulation system as well as for decreasing acoustic noise from the frequency converter-driven motor.

One type of output filter is available as an accessory for the RSI:

- sine-wave filters.

### Use of output filters

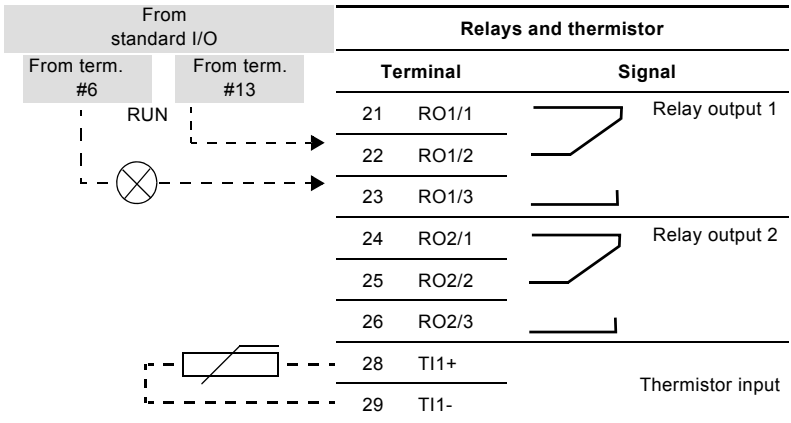
The table below shows when an output filter is required and the type to use. The selection depends on the following:

- pump type
- power cable length
- the required reduction of the acoustic noise from the motor.

Pump type	Shaft power, P2	Sine-wave filter
SP with motor voltage from 380 V and up	All	0-300 m*
Pumps with MG71 and MG80 up to and including 1.5 kW (2 hp)	Greater than 1.5 kW	0-300 m*
Reduction of noise emission, low reduction	All	-
Reduction of voltage peaks and noise emission, high reduction	All	0-300 m*

\* The lengths stated apply to the power cable.

### 4.2.2 Relay and thermistor input terminals



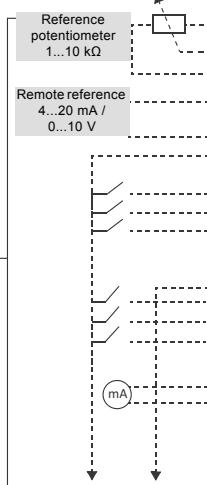
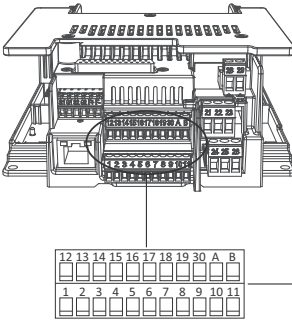
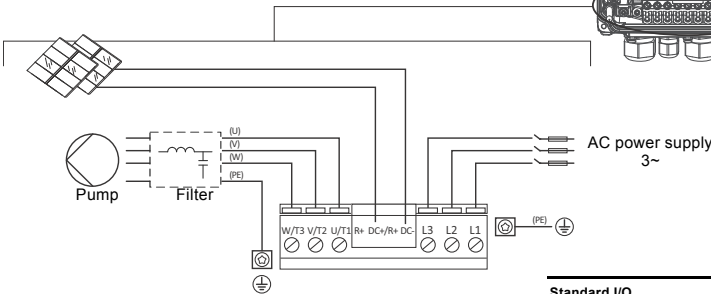
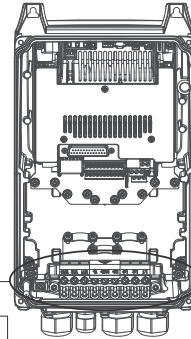
### 4.2.3 RSI input terminals

**WARNING**



Make sure that AC and DC power are never supplied to the RSI simultaneously. Grundfos recommends an interlocked change over switch.

Terminal	Description
L1 L2 L3	These terminals are the input connections for the power supply.
DC- DC+/R+ R-	DC bus terminal (DC- DC+) and break resistor terminals (R+ R-)
U/T1 V/T2 W/T3	These terminals are for motor connections.



Terminal	Signal/description
1	+10 Vref Reference output
2	AI1+ Analogue input, voltage or current
3	AI1- Analogue input, common
4	AI2+ Analogue input, voltage or current
5	AI2- Analogue input, common
6	24 Vout 24 V aux. voltage
7	GND I/O ground
8	DI1 Digital input 1, Start/stop
9	DI2 Digital input 2, Tank level switch
10	DI3 Digital input 3, Well level switch
11	CM Common for DI1-DI6
12	24 Vout 24 V aux. voltage
13	GND I/O ground
14	DI4 Digital input 4, Flow switch
15	DI5 Digital input 5, Flow meter
16	DI6 Digital input 6, AC operation
17	CM Common for DI1-DI6
18	AO1+ Analogue output, voltage or current
19	AO-/GND Analogue output ,common
30	+24 Vin 24 V auxiliary input voltage
A	RS485 Serial bus, negative
B	RS485 Serial bus, positive

Fig. 5 Position of terminals

TM06 6530 1914