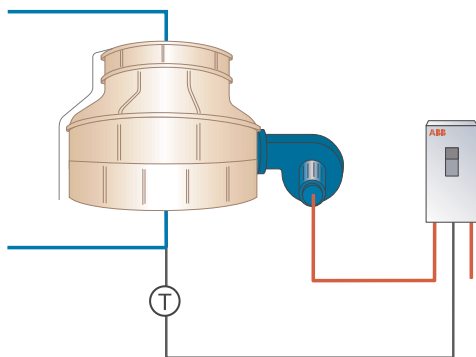## 4. Cooling tower fan

This application macro is for cooling tower fan applications where fan speed is controlled according to the signals received from the transducer. See the following figure.
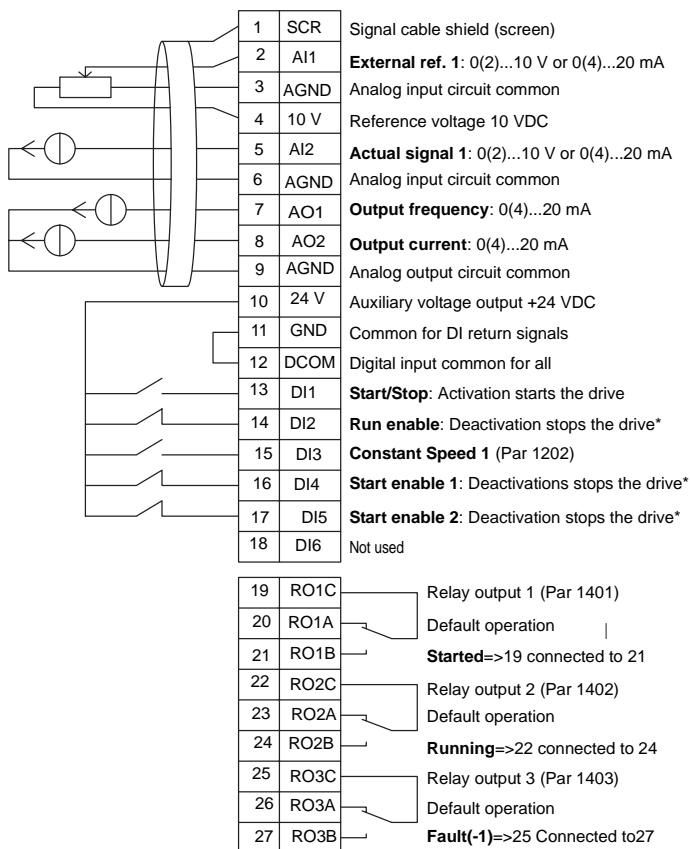
When using a direct speed reference in AUTO mode, the speed reference must be connected to analog input 1 (AI1) and the START command is given with digital input 1 (DI1). In HAND/OFF mode, the speed reference and START command are given through the control panel.

If process PI(D) is used, the feedback signal must be connected to analog input 2 (AI2). Setpoint is set from the control panel as default but it also can be changed to analog input 1. Process PI(D) must be commissioned and adjusted with parameters (Group 40) or using the PID control assistant (recommended).

©ABB

Cooling tower fan

1	SCR	Signal cable shield (screen)
2	AI1	**External ref. 1**: 0(2)...10 V or 0(4)...20 mA
3	AGND	Analog input circuit common
4	10 V	Reference voltage 10 VDC
5	AI2	**Actual signal 1**: 0(2)...10 V or 0(4)...20 mA
6	AGND	Analog input circuit common
7	AO1	**Output frequency**: 0(4)...20 mA
8	AO2	**Output current**: 0(4)...20 mA
9	AGND	Analog output circuit common
10	24 V	Auxiliary voltage output +24 VDC
11	GND	Common for DI return signals
12	DCOM	Digital input common for all
13	DI1	**Start/Stop**: Activation starts the drive
14	DI2	**Run enable**: Deactivation stops the drive*
15	DI3	**Constant Speed 1** (Par 1202)
16	DI4	**Start enable 1**: Deactivations stops the drive*
17	DI5	**Start enable 2**: Deactivation stops the drive*
18	DI6	Not used
19	RO1C	Relay output 1 (Par 1401)
20	RO1A	Default operation
21	RO1B	**Started**=>19 connected to 21
22	RO2C	Relay output 2 (Par 1402)
23	RO2A	Default operation
24	RO2B	**Running**=>22 connected to 24
25	RO3C	Relay output 3 (Par 1403)
26	RO3A	Default operation
27	RO3B	**Fault(-1)**=>25 Connected to27

*Disable/enable with parameters 1601,1608 and 1609

Note! Drive starts only if possible protection functions (Run enable or Start enable 1 and 2) are activated from I/O or disabled with parameters.

5