

## TB101 (Rev1) - ATC I/O Specifications

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### ATC I/O Specifications for Umbrella ATC

The following inputs and outputs are required:

Input	Specification (RED/GRN refer to color of input bit when viewing in PLC live debugger)
TOOL COUNTER	+24VDC PNP shielded 3-wire inductive proximity switch open (RED) after a tool change
CAROUSEL IN	+24VDC Normally Open (NO) 2-wire magnetic switch, closed (GRN) when carousel is in
CAROUSEL OUT	+24VDC Normally Open (NO) 2-wire magnetic switch, closed (GRN) when carousel is out
CLAMPED	Normally Open (NO) mechanical switch, closed (GRN) when clamped
UNCLAMPED	Normally Open (NO) mechanical switch, closed (GRN) when unclamped
MANUAL CLAMP	Normally Open (NO) momentary push button, close (GRN) to activate clamp
ORIENT COMPLETE	Transistor open collector output from inverter 0V orient complete (GRN), + 24 not oriented (RED).
ZERO SPEED/RUN	Transistor open collector output from inverter 0V at zero speed (GRN), +24 when running (RED)
AIR LOW	Normally Closed (NC) switch, open (RED) when air pressure is low *

\* Low air gauge must be labeled in Bar/kpa and psi. Minimum air supply to machine must equal 95psi and use a 3/8" airline, and cannot be more than 10ft from a larger main supply line.

Output	Specification
CAROUSEL OUT SOLENOID	120VAC Solenoid, momentary activation until input sensor closed
CAROUSEL IN SOLENOID	120VAC Solenoid, momentary activation until input sensor closed
UNCLAMP	120VAC Solenoid, when activated, tool is unclamped
AIR BLOW	120VAC Solenoid, always on at the same time as UNCLAMP
ORIENT START	Dry relay contact closure interfaced to the inverter.
CAROUSEL MOTOR	3-phase AC at control working voltage. Motor must have brake.

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### Inverters

Only the Mitsubishi FR-A500 series inverter with FR-A5AP option card is supported for use in Centroid ATC controls. Other makes and models of inverter are not supported.

Model Number	Working Voltage	Power rating
FR-A520-xxK-NA	3-phase 200VAC	xx Kw
FR-A540-xxK-NA	3-phase 400VAC	xx Kw

## ATC I/O Specifications for Swing-arm ATC

The following inputs and outputs are required:

Input	Specification (RED/GRN refer to color of input bit when viewing in PLC live debugger)
TOOL COUNTER	+24VDC PNP shielded 3-wire inductive proximity switch (RED after tool change)
TOOL POT UP	+24VDC Normally Open (NO) 2-wire magnetic switch, closed (GRN) when pot is up
TOOL POT DOWN	+24VDC Normally Open (NO) 2-wire magnetic switch, closed (GRN) when pot is down
CLAMPED	Normally Open (NO) mechanical switch, closed (GRN) when clamped
UNCLAMPED	Normally Open (NO) mechanical switch, closed (GRN) when unclamped
MANUAL CLAMP	Normally Open (NO) momentary push button, close (GRN) to activate clamp
ORIENT COMPLETE	Transistor open collector output from inverter 0V orient complete (GRN), + 24 not oriented (RED)
ZERO SPEED/RUN	Transistor open collector output from inverter 0V at zero speed (GRN), +24 when running (RED)
AIR LOW	Normally Closed (NC) switch, open (RED) when air pressure is low *
ARM HOME	+24VDC PNP 3-wire inductive proximity switch, open (RED) when arm is in home position
ARM STOP	+24VDC PNP 3-wire inductive proximity switch, open (RED) when arm is in home position
ARM CLAMP	+24VDC PNP 3-wire inductive proximity switch, closed (GRN) when arm is in home position

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Output	Specification
TOOL POT UP SOLENOID	120VAC Solenoid, momentary activation until input sensor closed
TOOL POT DOWN SOLENOID	120VAC Solenoid, momentary activation until input sensor closed
UNCLAMP	120VAC Solenoid, when activated, tool is unclamped
AIR BLOW	120VAC Solenoid, always on at the same time as UNCLAMP
ORIENT START	Dry relay contact closure interfaced to the inverter.
CAROUSEL MOTOR	3-phase AC brake motor at control working voltage.
ARM MOTOR	3-phase AC at control working voltage. <b>Motor and mechanical gears must work such that the motor does not have to be reversed to cycle the arm through the entire tool change sequence.</b>

## Inverters

Only the Mitsubishi **FR-A500** series inverter with **FR-A5AP** option card is supported for use in Centroid ATC controls. Other makes and models of inverter are not supported.

<b>Model Number</b>	<b>Working Voltage</b>	<b>Power rating</b>
FR-A520-xxK-NA	3-phase 200VAC	xx Kw
FR-A540-xxK-NA	3-phase 400VAC	xx Kw

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### Document History

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