ABB V18345-2010421001

01 Function and selected configuration

Product function

ABB V18345-2010421001 closes the valve-position loop by comparing actuator position with the electrical setpoint. Its I/P stage meters air through a pneumatic amplifier, reducing air flow once the target position is reached.

Selected configuration

mechanical position indicator, double-acting fail-safe output, NPT connections and analog feedback. The 20 housing option provides mechanical position indication and supports NAMUR linear or VDI/VDE 3845 rotary mounting with the appropriate attachment kit. Auto Adjust establishes the control behavior for the connected actuator.

Functional path

4–20 mA setpoint

Position control

I/P and air outputs

Actuator feedback

Actuation	Double acting with fail-safe pneumatic action
Signals	4–20 mA setpoint and analog position feedback
Connections	1/2-14 NPT cable entry and 1/4-18 NPT air ports

This code selects local LCI communication without the optional FSK module for HART over the current loop. On loss of electrical power, the fail-safe pneumatic version depressurizes output 1 and pressurizes output 2; verify the resulting valve direction against the actuator design.

V18345-2010421001 / Technical operating envelope

02 Technical operating envelope

Setpoint input	4–20 mA, two-wire
Position feedback	4–20 mA, two-wire plug-in module
Local communication	LCI adapter connection
Pneumatic output	Double acting, fail safe
Air supply pressure	1.4 to 6 bar; respect actuator maximum
Pneumatic output range	0 to 6 bar
Air consumption	<0.03 kg/h, independent of supply pressure
Cable-entry thread	1/2-14 NPT
Air-port thread	1/4-18 NPT
Position indication	Mechanical indicator and LCD
Linear-actuator operating angle	25° to 45°

Minimum configured travel span	>20% of total travel
Travel-time prolongation	0 to 200 seconds per direction
Characteristic deviation	≤0.5%
Configurable dead zone	0.1 to 10%
Tolerance band	0.3 to 10%
Conversion resolution	>16,000 steps
Sampling interval	20 ms
Air particle size	5 µm maximum
Air oil concentration	1 mg/m³ maximum
Pressure dew point	10 K below operating temperature
Housing protection	IP65 / NEMA 4X; no overhead mounting for NEMA 4X

The selected double-acting configuration must be evaluated separately from single-acting SIL application data. Family-level HART, remote-sensor and hazardous-area options are not automatically included.

V18345-2010421001 / System integration and applications

03 System integration and applications

Double-acting valve positioning

Control both actuator chambers while retaining the selected fail-safe pneumatic response.

Linear valve actuators

Use an appropriate DIN / IEC 534 / NAMUR attachment with valid linkage travel and feedback angle.

Rotary valve actuators

Fit a VDI / VDE 3845 attachment and confirm rotational direction during Auto Adjust.

Analog loop integration

Integrate the setpoint and position feedback as separate 4–20 mA loops in the control system.

System and supply context

This positioner requires a matched pneumatic actuator, suitable attachment kit and clean instrument air. External mounting accessories and air-treatment assemblies are included only when itemized.

Application boundary

The selected device is double acting and has no explosion-protection option. Its application must match the full order code; do not apply family-level single-acting SIL claims or optional HART features to this configuration.

What happens to the air outputs of V18345-2010421001 if electrical power fails?

The selected double-acting fail-safe arrangement depressurizes output 1 and pressurizes output 2. The resulting valve movement depends on the actuator connections and must be verified during a controlled test.

V18345-2010421001 / Engineering selection decisions

04 Engineering selection decisions

Does V18345-2010421001 include HART communication over the setpoint loop?

No. Input option 1 selects the two-wire 4–20 mA input and LCI connector. The FSK module for HART over the current loop belongs to a different input option.

Are the setpoint and feedback of V18345-2010421001 the same circuit?

No. The positioner receives a 4–20 mA setpoint, while the selected plug-in module supplies a separate two-wire 4–20 mA position-feedback circuit. Preserve the terminal assignment and polarity of each loop.

How does Auto Adjust help commission V18345-2010421001?

It automatically determines control parameters for the connected actuator. Select the correct linear or rotary actuator type and clear the travel area before starting the adjustment.

Which threads must be matched when reconnecting V18345-2010421001?

The cable entry is 1/2-14 NPT and the air ports are 1/4-18 NPT. Use the correct fittings and do not force metric or parallel-thread fittings into the NPT connections.

Match NPT fittings	Use the specified cable and air-port thread types.
Verify fail-safe direction	Check output 1 depressurization and output 2 pressurization against actual valve motion.

V18345-2010421001 / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

The current manufacturing and OEM support stages for V18345-2010421001 require confirmation from ABB. Apter Power availability is confirmed separately.

Replacement assessment

Match both pneumatic outputs, the fail-safe response, 4–20 mA input and feedback circuits, NPT connections and actuator linkage. Do not infer HART or hazardous-area approval from the TZIDC family name.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains configuration and selection boundaries. The independent installation guide organizes preparation, connection, testing and handover. It does not replace the applicable manufacturer installation instructions.

Technical basis

ABB TZIDC Digital Positioner, DS/TZIDC-EN Rev. I.

Related product navigation

- ABB V18345-1010261001
- ABB AI810 3BSE008516R1
- ABB AO810 3BSE008522R1

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries