5 inputs determine the right sensors & switche.

A distributor-facing pre-quote checklist. If the customer answers most of these at the first call, the second call is the quote.

01 **Which variable does the machine need to confirm, cylinder position, air pressure, or vacuum grip?**

This is the root sort. **Rod position** → cylinder position sensor (magnetic auto-switch on the cylinder body). **System or filter pressure** → pressure sensor (single-point or differential). **Pick-and-place grip** → vacuum sensor / switch. Each watches one physical variable; there's no one device that covers all three.

02 **What's the output type and voltage on the PLC input card?**

The most common cause of a dead sensor at commissioning is a mismatched signal type. **PNP vs. NPN, switched vs. analog vs. IO-Link, and the supply voltage** all have to match the input card. Pull the card spec sheet before quoting: and on safety circuits, confirm normally-open vs. normally-closed.

03 **For a position sensor, what cylinder series is it mounting on, and what's the duty cycle?**

The sensor is **selected to the cylinder series, not chosen independently**: the mount (groove / T-slot, or band / strap) and the piston magnet match a specific family. Then set reed vs. solid-state by duty: solid-state for high-cycle and safety-critical motion, reed for lower-cycle, cost-sensitive work.

04 **For a pressure sensor, single-point reading, or a differential across a filter?**

Single-point system pressure needs one tap; **filter differential needs two taps** (a pair, or one differential sensor). It changes the count and the part. Then size to the working-pressure range and the port thread at the install point, and pick gauge output for status-only vs. an electrical signal where it feeds control logic.

05 **For a vacuum switch, what's the steady-state vacuum, and does the circuit also run positive blow-off?**

Set points sit relative to steady-state vacuum (grip-confirm and drop-detect), and **they re-verify whenever the workpiece changes** because cup volume and surface shift the thresholds. If the same line alternates vacuum grip with positive pressure, spec the **compound variant**: a vacuum-only switch faults on positive pressure.