The 5 types · side-by-side

Distributor-facing reading. Each row gives best-for, key trade-off, capacity, price band, and how many of SPC's tier slots carry an option at that product type.

PRODUCT TYPE	BEST FOR	KEY TRADE-OFF	TYPICAL CAPACITY	PRICE BAND	BRANDS SPC CARRIES
Thermal Mass Flow Meter MEASURES ACTUAL DEMAND · CFM / SCFM ON THE HEADER	**The audit anchor: start every conversation here.** Energy audits, compressor sizing for replacement or expansion, leak-program baseline, department-level chargeback, sustainability / ESG reporting, VFD-compressor optimization. The first instrument that goes on the wall and the one every other monitoring decision anchors against.	ONE-TIME INSTALL · NEEDS STRAIGHT PIPE Capital purchase, not a consumable; pays for itself on the first compressor-sizing or leak-survey engagement. Thermal sensors need 15-20 pipe diameters of straight pipe upstream to read cleanly and can be noisy at very low flow turndowns: not a 100:1 turndown instrument on a single meter.	Inline (small pipe) · insertion-probe to ~DN 1000 hot-tap install on insertion · no shutdown required	$$ – $$$	1 / 5 · CS INSTRUMENTS ONLY
Ultrasonic Leak Detector FINDS AND PRICES LEAKS · 40 KHZ HANDHELD	**The dollar-figure machine for energy audits.** Plants losing 20-30% of compressed air to unrepaired leaks (which is most plants). Audit-service engagements, ESG / sustainability reporting, pre-compressor-purchase load verification, annual leak-survey programs. The instrument that produces the quantified leak report that sells the downstream repair work: fittings, couplers, FRLs, hose.	HANDHELD, NOT INSTALLED · SURVEY DISCIPLINE MATTERS Walk-through instrument, not a continuous monitor. Operator technique, consistent measurement distance, and the customer's electric rate all affect the dollar-figure output. Background ultrasonic noise (steam vents, electrical arcing, certain motors) can mask small leaks.	Handheld · plant-wide survey audio-only · acoustic-imaging camera variants	$ – $$$	1 / 5 · CS INSTRUMENTS ONLY

Dew Point Monitor VERIFIES THE DRYER · +50°F TO -80°C PDP	**The proof your dryer is actually working.** Every desiccant dryer install (a desiccant without a dew-point monitor is unverified equipment), refrigerated dryers feeding sensitive applications (paint, instrumentation, outdoor piping), wet-air complaint troubleshooting, new dryer commissioning, audit-driven dryer verification. Fixed transmitter for continuous monitoring; portable handheld for spot checks and audits.	ANNUAL CALIBRATION · RANGE MUST MATCH THE DRYER Polymer-capacitive sensors need annual calibration (factory swap-out, not field-calibratable to audit grade). Range must span the installed dryer's output: a refrigerated-grade meter on a desiccant install reads at the floor of its range with degraded accuracy. Wet-air upsets can damage even condensation-insensitive sensors over time.	+50°F PDP (refrigerated) → -80°C (deep desiccant) fixed transmitter · portable handheld	$$ – $$$	1 / 5 · CS INSTRUMENTS ONLY
ISO 8573-1 Air Quality Analyzer THREE-PARAMETER AUDIT · PARTICLES + WATER + OIL	**The audit record for regulated industries.** Pharmaceutical fill lines (FDA 21 CFR 211, USP <797>/<800>), food and beverage contact (GFSI, SQF, BRC), semiconductor and electronics fabrication, medical breathing air (NFPA 99), specialty chemical and biopharma. Any plant where compressed air touches product and an external auditor will ask for the purity record.	THREE-SENSOR SET · AUDIT-GRADE ONLY Not one instrument: a set of three (particle counter, dew point, oil sensor) consolidated through a logger. Significant upfront capital plus annual or semi-annual calibration on each sensor. The economical / import tier doesn't meaningfully exist at audit grade; lower-tier instruments cannot produce the calibration certificates the auditor requires.	Fixed (continuous certification) · portable (audit rounds) scope to compliance parameters · not all three by default	$$$	1 / 5 · CS INSTRUMENTS ONLY
Pressure Sensor STATUS, DIFFERENTIAL, CONTROL · GAUGE OR 4-20 MA / IO-LINK	**The workhorse, every filter, every compressor, every point of use.** Compressor discharge monitoring, system header readback, filter differential (the highest-payback application: converts calendar change-outs into condition-based), dryer outlet, critical points of use, compressor sequencer feedback, receiver tank monitoring. Multi-sensor programs the customer builds out one stage at a time.	MATCH THE SPEC TO THE JOB Wide accuracy range across the tier: economy gauge for status indication, Adsens electronic sensor for filter differential and control feedback, audit-grade transmitter only where reading accuracy materially affects plant behavior. Most quoting errors are mechanical-fit mistakes (wrong port, wrong range) rather than performance mistakes.	Vacuum (-101 kPa) through 40 MPa · most pneumatic 0-290 PSI gauge readout · 4-20 mA · IO-Link · Modbus	$ – $$	1 / 5 · ADSENS (ECONOMY/MIDDLE TIER)

Reading the brand bench column: the bar shows how many of SPC's tier slots (Industry Leader · Emerging · Economical · adjacent) carry an option at that product type. Monitoring is a deliberately narrow bench across the layer: CS Instruments dominates because the calibration discipline, condensation-insensitive sensing, and audit-grade documentation are the differentiators that separate audit instruments from shop-air instruments, and Adsens carries pressure because most pressure-sensor work doesn't need audit-grade calibration. Narrow benches here are the right answer, not a gap to fill.