

APTech GAS CONTROL NEWS

QUALITY – RELIABILITY – SAFETY

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New Lower Cost Regulators – A to Z

The AZ family is being expanded beyond tool hook up and line regulators to include an array of source cylinder regulators. In addition, new optional features are being added for all models within the series. The AZ product offering now provides lower cost alternatives for delivering gases from the supply source through to point of use.

We are pleased to announce that the AZ 1100, AZ 1500 and AZ 1400T are each now available. As with the AZ 1000 and AZ 1200, first introduced in 2004, the primary difference between their AP series equivalents is single melt 316L stainless steel (SS) body material instead of double melt, VAR. The material; a few non-wetted, non-critical subtle differences and a less stringent electropolishing (EP) process combine to create the cost savings. In terms of performance, ratings and other specifications, there are no differences between the AP and AZ series.

The use of single melt SS material reduces the material cost and enhances the machine ability. As the saying goes, nothing is free, meaning there are tradeoffs. Lower cost comes at the expense of material impurity clusters associated with single melt. These clusters affect the appearance of the polished surface and can cause issues in corrosive service (please refer to PN 414).

The standard, and only, surface finish for the AZ has been a 10 Ra average. A new surface finish option, designated Q after the material, is a 25 Ra average providing a lower cost option for less demanding applications.



Porting has been limited to 2PW and 3PW configurations. The 4PW is now being offered for all AZ models because of the broader focus to include source applications.

Another new addition is the SHP option of Hastelloy®C-22® internals. Already available on AP series, SHP provides Hastelloy C-22 diaphragm and poppet for corrosion resistance (refer to PN 414 regarding use of single melt material in corrosive gas service). SHP may now be specified for the AZ 1000, AZ 1100, AZ 1200 and AZ 1500 series.

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AP Tech, an SMC Company

A personal note from Rene Zakhour, Founder and CEO

It has been almost one and a half years since AP Tech was acquired by SMC. Though we did our best to explain that nothing would change, many were skeptical. As the sayings go 'time will tell' and 'seeing is believing', I would hope that everyone now sees that our promise of 'business as usual' held true. We have today all the same people doing the same jobs on your behalf. We are independently operated but have the help and strength of SMC behind us. From my perspective, I would say now that it is 'business better than usual' although it may not be apparent, SMC is helping us in many positive ways.

We appreciate your continued support and look forward to exceeding your high expectations of AP Tech.

Thank you,



Tech Briefs – anything but

The Tech Briefs section of our web site contains a wide variety of information ranging from technical papers to flow curve libraries to product operating instructions. It is accessed by simply clicking the Tech Briefs button on the horizontal, home page tool bar. To those who have not yet explored this technical oasis, a diverse array of information awaits you. Technical papers include explanations of tied diaphragm regulators, supply pressure effect and surface finish studies. To those already familiar, please periodically revisit and scroll through the site, as new information is added without fanfare or announcement.

If there are topics you would appreciate being addressed with a paper or information added, please send your suggestion via the 'contact us' button on the home page. ❖



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M60 and M80 – Crossover with pressure based simplicity

The M60 is a simple crossover device which provides pressure based cylinder switchover. It automatically switches from one cylinder to another when the primary cylinder empties. The M60 is the cost effective solution for delivering high pressure gases when an automated system is not warranted. The M60 is the building block of the AK M80 manifold system.

The operation of the M60 is as easy as turning a knob. The system is comprised of two pressure regulators – one preset (fixed) and one adjustable – both housed in a common body. Turning the knob to point to one cylinder or the other, directs which cylinder will be drawn from until it is empty. Turning the knob to point to one cylinder or the other adjusts the regulator to be either higher pressure (delivering gas) than the preset side or lower pressure (standby). The gas always flows from the side with the higher pressure. When the primary side (arrow pointing towards) cylinder empties, the pressure will fall below the pressure of the standby side, and gas will start to flow from that side.



The M60 is available in both the AK and AP series. An AK M60 has ¼ inch NPT connections and AK features, whereas the AP M60 has welded face seal connections and features of the AP series.

The M80 adds a second stage regulator and mounting bracket to the M60 regulator. The second stage eliminates supply pressure effect to enable constant delivery pressure, even with decreasing inlet pressure as the cylinder is depleted. Unlike the M60, the M80 is only available in the AK series.

The M60 is a component of a gas delivery system, albeit the heart, and the M80 has more features, but neither is a complete system unto itself. A proper system should also have cylinder connection pigtails, shut off valves and check valves in addition to mounting hardware. ❖

New Lower Cost Regulators – A to Z *Continued from page 1*

There is no need to specify it for the AZ 1400T series, as it is standard with this feature.

Part of the magic of the AZ's cost effective manufacturing has been limiting the options. Fewer options equates to larger production runs because total volume is not fractured between various options. The available fitting sizes, face to face dimensions and porting configurations will still be limited to those listed in the data sheets. Tube stubs are the exception though, as they are not listed but they are available.

Data sheets for the entire AZ product offering are posted online at www.aptech-online.com and printed copies may be requested. ❖



10,000 Pounds Delivered!

The KT series is an exciting new line of regulators that step our pressure ratings up to an entirely new level. The inlet pressure ratings range up to 10,000 psig (690 bar) and amazingly enough, the outlet pressure achieves the same. The regulators utilize piston sensing elements to accommodate the high delivery pressure, as a typical diaphragm is less than optimal above 500 psig (53 bar) delivery. Materials of construction are 300 series stainless steel and brass. A self relieving feature is standard, which safely vents pressure to atmosphere as a lower pressure is adjusted without flow through the device. Non-relieving is optionally available.



The first of the growing family are:

KT 10, low flow with inlet/outlet pressure ratings to 10,000 psig (690 bar) depending upon configuration. The flow coefficient is standard at 0.06 C_v with a 0.12 C_v option available. Connections are NPT or MS 33649.



KT 10-Welded, a 316L SS version of the KT 10 with welded face seal connections. The inlet/outlet pressure ratings are limited to 4,000 psig (280 bar) due to the pressure rating limitation of the fittings. The finish is electropolished and passivated. The internal components are the same as the KT 10 – the only difference is the body and fittings.



KT 12, high flow with 6,000 psig (414 bar) inlet and up to 2,500 psig (172 bar) outlet pressure depending upon configuration. The flow coefficient is standard at 0.8 C_v with a 2.0 C_v option available. Connections are NPT.

The applications for the KT series are far ranging – just like their pressure delivery. High pressure is used in testing, automation, diving, aerospace and petro-chemical industries to name a few. ❖
