



VALVES & CONTROLS

YOUR GOLD PROCESSING PARTNER

MINING | INDUSTRY OVERVIEW

PENTAIR VALVES & CONTROLS

English

Across the globe, gold production relies on Pentair Valves & Controls high quality valve and control solutions to meet their process requirements.

From the gold ore stockpile to the finished bullion, we have the complete product portfolio of manual and automated valve packages to meet your process needs.

Pentair products consistently outperform all others. Our reliability and increased cycle life saves you time and money in the operation of your plant.

Use our selection matrix as a guide to help you choose the right valve arrangement for the various gold process applications.

Spanish

Los productores de oro de todo el mundo confían en la gran calidad de las soluciones con válvulas y controles de Pentair Valves & Controls para cumplir los requisitos del proceso.

Desde la extracción del mineral de oro hasta la producción de lingotes, tenemos una completa cartera de paquetes de válvulas manuales y automatizados que satisfacen sus necesidades.

Los productos Pentair aventajan sistemáticamente a todos los demás. La fiabilidad y el aumento del ciclo de vida de nuestros productos permite ahorrar tiempo y dinero en las actividades de la planta.

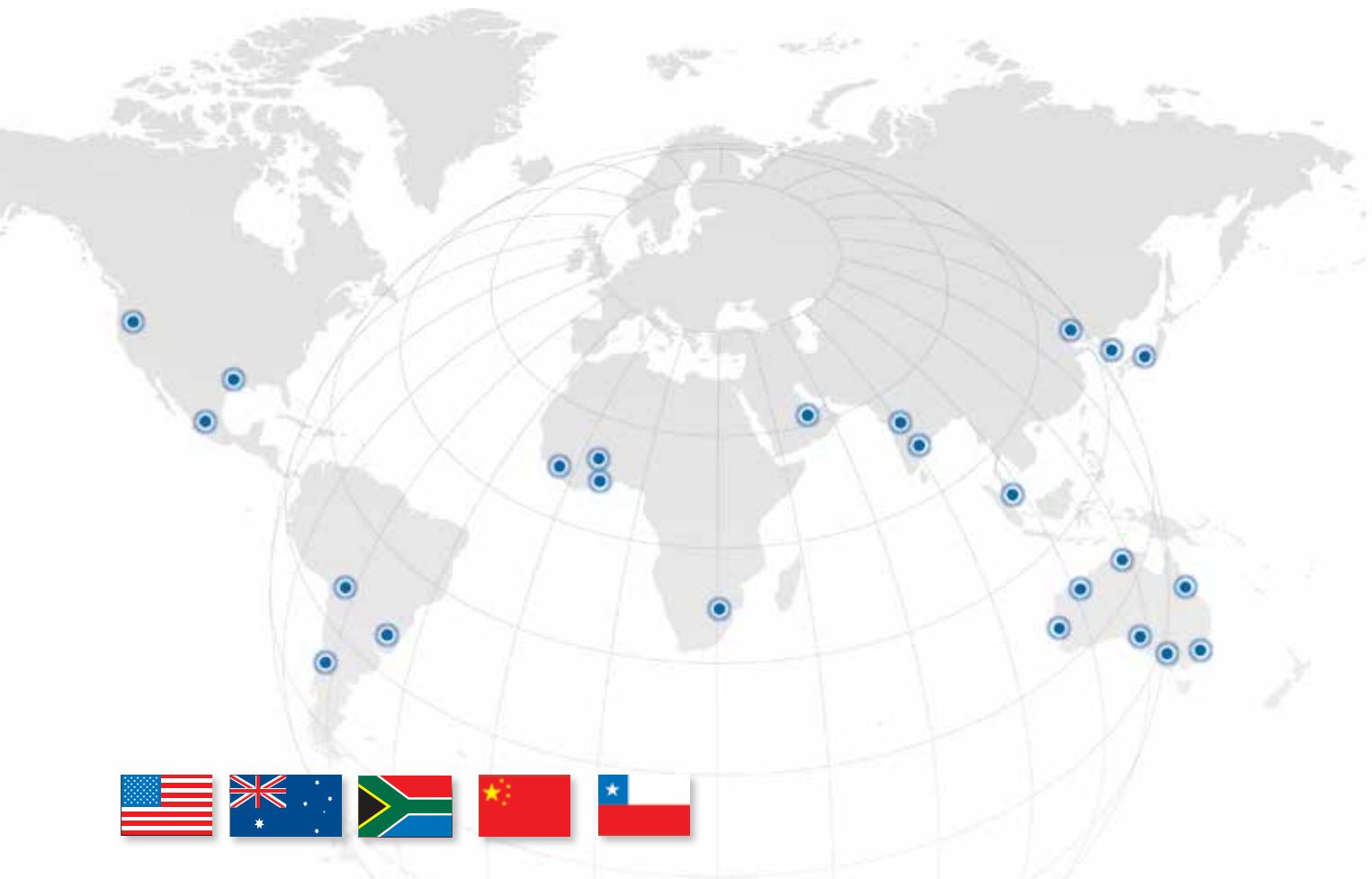
La tabla de selección le ayudará a elegir la combinación de válvulas correcta para varias aplicaciones de transformación del oro.

Chinese

全球范围内的铜业生产都在依赖滨特尔阀门与控制的高品质阀门和控制解决方案来满足工艺的要求。从矿石开采到成品阴极铜，我们拥有的从手动型到自动型的完整产品组合能帮助您有效达成各种工艺需要。

滨特尔阀门与控制的定制型产品始终领先于其他竞争产品，可靠性和延长的使用寿命可为工厂的运营节省更多的时间和资金。

请参照产品应用表挑选各种适合您的铜工艺应用阀门产品的最佳配置。



A worldwide network of solution providers brings you a wealth of experience, research, design, service, development and manufacturing.

Working with site teams and engineers, consultants and contractors to bring solutions to your process challenges.

By understanding what you want to achieve and what your expectations are, we can provide you with the best possible solutions that fit your business.

Put us to the test and discover our commitment to add “real” value to your process.

CLARKSON

KEYSTONE

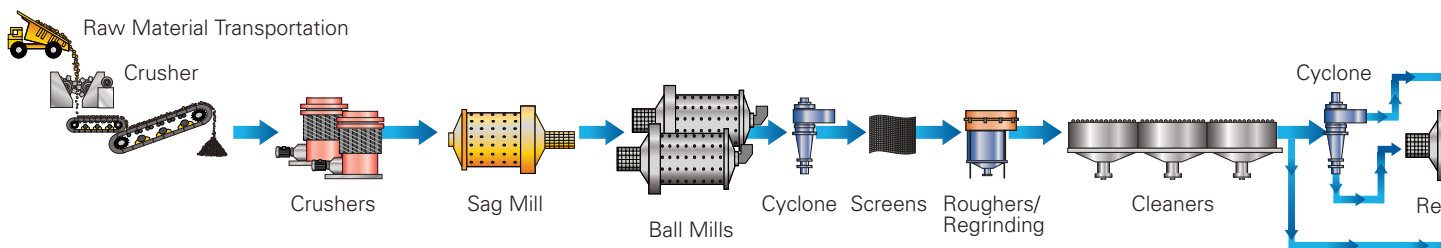
KTM

NEOTECHA

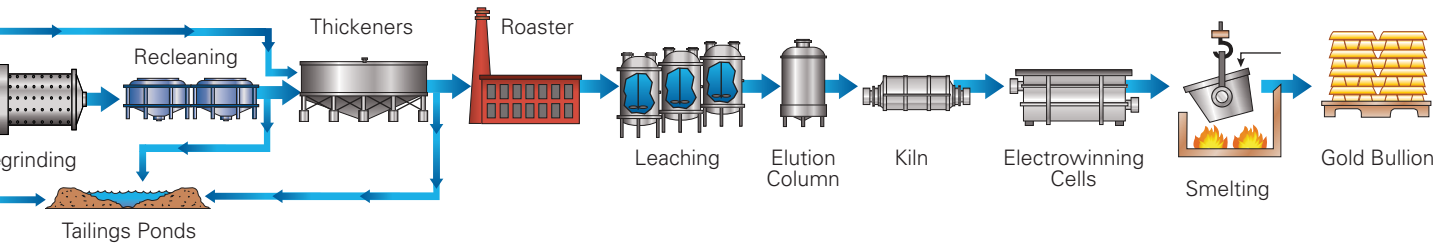
VANESSA

OUR PRODUCTS IN GOLD PROCESSING

Valve type	Brand	Dewatering services	Process/raw water	water	Water injection	Cyclones	Screens	Lime addition	Ore feed	Hopper storage
Butterfly valves										
Process control resilient seated	Keystone F990		•		•			•		
High performance	Keystone K-LOK, Winn HI-LOK		•	•				•		
High performance (exotic materials)	Keystone K-LOK, Winn HI-LOK			•				•		
General purpose resilient seated	Keystone GRW/GRL, AR1/AR2		•	•	•					
PTFE lined	NeoTecha Neoseal				•					
Double flanged resilient seated	Keystone F631, Sapag, RMI									
Triple offset valve	Vanessa 30,000				•					
Ball valves										
V-Port	KTM		•		•			•		
PTFE lined	NeoTecha NTB/NTC		•		•			•		
Trunion mounted	FCT HPA/HRA		•		•			•		
Metal seated	KTM M Series		•		•			•		
Check valves										
Dual disc	Gulf MB		•	•	•					
Wafer swing	Prince F809/F810/F813		•	•	•					
General purpose swing check	Keystone F85A/F86			•						
Knife gate valves										
Uni-directional resilient & metal seat	Keystone F951/F952	•	•	•	•	•	•			•
Ported slide gate	Keystone F955		•	•					•	•
Uni-directional metal seat	Roalve S20	•	•	•			•			
Bi-directional cartridge seal	Keystone PCS17	•	•	•	•		•			
Heavy duty slurry isolation	Clarkson KGD	•	•	•	•	•	•	•	•	•
Heavy duty slurry isolation	Clarkson KGA	•	•	•	•	•	•	•	•	•
High pressure heavy duty	Clarkson KGF	•		•				•	•	
Polymer lined	L&M, M145/345/202		•	•					•	
Line blind										
Mansafe	Clarkson, KLB, KGL									
Control valves										
Slurry modulating	Clarkson "C" Control					•		•	•	•
V-Port control	KTM Single V/Dual V							•	•	
Metal seated butterfly	Keystone F634							•	•	
Heavy duty metal seated butterfly	Keystone F637/638							•	•	
V-Ported knife gate	Keystone F955-V port									
Actuation & controls										
Electric	Biffi F01/F02/2000		•	•					•	
Pneumatic, aluminium	Keystone F79U		•	•	•		•	•	•	•
Pneumatic, S/S or DI	Morin F79S/F79B		•	•	•		•	•	•	•
Positioners	Avid, Westlock, F793		•	•	•		•	•	•	•
Hydraulic	Keystone, Morin		•	•					•	



Sump isolation	Pump isolation	Tank blanking	Process slurry	Mill discharge	Flotation separators	Flocculent	Thickner underflow	Thickner isolation	Filters	Caustic cyanide	Loaded carbon	Heat exchange oil	Acid washing	Pregnant solution	Recirculation	Tailings	Tailings pump isolation	Paste fill plant & pipeline
						•				•			•	•				•
									•	•					•			
	•					•			•						•			•
						•			•									
•			•			•			•	•			•		•			
•						•			•	•			•		•			
•						•			•	•			•		•			•
•						•			•	•			•		•			
•	•				•	•			•	•			•	•	•			
•	•				•	•			•				•	•	•			
•	•				•	•			•				•	•	•			
•					•	•			•				•	•	•			
•	•		•		•	•			•		•		•	•	•			
•	•				•	•	•		•	•			•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			
•					•	•	•		•				•	•	•			•
•		•									•							



BUTTERFLY VALVES

Process control resilient seated

Brand/model:	Keystone F990
Size: DN (inches)	25 - 500 (1 - 20)
Pressure: kPa (psi)	1000 (150)
Temperature: °C (°F)	150 (300)
Flanges:	ASME 150, AS 2129
Features:	Wafer lugged style body. Bi-directional, bubble tight resilient seated valve. One piece disc stem. A range of seat and disc materials. EPDM, BUNA-N, PTFE & Urethane. Compact, light weight wafer style body Bi-directional bubble tight shut-off.



High performance

Brand/model:	Keystone K-LOK, Winn HI-LOK
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	ASME 150, 300
Temperature: °C (°F)	535 (995)
Flanges:	ASME 150, 300 & AS 2129
Features:	Double offset disc-stem for reduced opening/closing torque. Range of interchangeable seat options. Cast steel or S/S body. Nickel edge disc. R.T.F.E. seats. U.H.M.W.P.E. seats.



High performance in exotic materials

Brand/model:	Keystone K-LOK, Winn HI-LOK
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	5100 (740)
Temperature: °C (°F)	535 (1000)
Flanges:	ASME 150, 300, AS 2129
Features:	Alloy 2205 & 2205 Duplex R.T.F.E. seat. Alloy 20 R.T.F.E. seat. Hastelloy® C276 R.T.F.E. seat. SMO 254 R.T.F.E. seat.



General purpose resilient seated

Brand/model:	Keystone GRW/GRL, AR1/AR2
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	1600 (235)
Temperature: °C (°F)	150 (300)
Flanges:	150 & AS 2129
Features:	Wafer and lugged style bi-directional, bubble tight resilient seated valve Top & bottom inboard bearings. Super duplex trim.



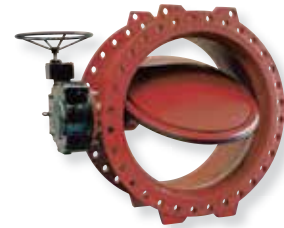
PTFE lined

Brand/model:	NeoTecha NeoSeal
Size: DN (inches)	40 - 900 (1½ - 36)
Pressure: kPa (psi)	1000 (150)
Temperature: °C (°F)	200 (390)
Flanges:	ASME 150, AS 2129
Features:	PTFE lined internals. Utilises mechanical stem seal. Wide PTFE sealing face. Suitable for shut-off or control of highly corrosive media.



Double flanged resilient seated

Brand/model:	Keystone F631, RMI, Dubex
Size: DN (inches)	150 - 4000 (6 - 160)
Pressure: kPa (psi)	PN16
Temperature: °C (°F)	104 (220)
Flanges:	PN10, PN16, PN25
Features:	Resilient seat in disc. Fully adjustable endless seat. In-line replacement & re-adjustable seat. Standard body seat ring 316 S/S; other materials on request. Uni or bi-directional sealing. Horizontal or vertical shaft mounting.



Triple offset valve

Brand/model:	Vanessa 30,000
Size: DN (inches)	80 - 3600 (3 - 142)
Pressure: kPa (psi)	15,513 (2250)
Temperature: °C (°F)	815 (1500)
Flanges:	ASME 150, 300, 600, 900
Features:	Unique triple offset metal seated valve. Zero leakage. One piece cast body. Stellited seat standard. Full range of actuators available.



BALL VALVES

V-Port control valve

Brand/model:	KTM V-Ball
Size: DN (inches)	25 - 200 (1 - 8)
Pressure: kPa (psi)	1965 (740)
Temperature: °C (°F)	260 (500)
Flanges:	ASME 150, 300
Features:	Full and reduced bore designs. V-Notch design allows equal percentage characteristics for precise control. One piece body design.



PTFE lined

Brand/model:	NeoTecha NTB/NTC
Size: DN (inches)	15 - 150 (½ - 6)
Pressure: kPa (psi)	1965 (740)
Temperature: °C (°F)	-40 to 210 (-104 to 410)
Flanges:	DIN PN16, ASME 150, JIS B 2212 10 K
Features:	PFA lining offers highest corrosion resistance. Full bore offers high Kv value equal to the pipe. One piece ball/stem, no possibility of damaging PFA lining on ball by the stem, no hysteresis, ideal for flow control applications.



Trunnion mounted

Brand/model:	FCT HPA/HRA
Size: DN (inches)	50 - 1500 (2 - 60) FB & RB
Pressure: kPa (psi)	1965 (10,000)
Temperature: °C (°F)	-321 to 752 (-196 to 400)
Flanges:	ASME B16.10, API 6D, API 6A
Features:	Design, manufacturing and materials comply with the Essential Safety Requirements of the 97/23/EC Directive (PED). All valves designed to API 6D (ISO 14313) or API 6A (ISO 10423). Body wall thickness complies with ASME B16.34 (forged and/or cast). Full and reduced bore valves available.



Metal seated

Brand/model:	KTM M Series
Size: DN (inches)	15 - 400 (½ - 16)
Pressure: kPa (psi)	1965 (740)
Temperature: °C (°F)	-270 to 788 (-454 to 1450)
Flanges:	ASME & AS 2129
Features:	Full and reduced bore designs. V-Notch design allows equal percentage characteristics for precise control. One piece body design.



CHECK VALVES

Dual disc check valve

Brand/model:	Gulf Valve, MB
Size: DN (inches)	50 - 1220 (2 - 48)
Pressure: kPa (psi)	1034 - 5102 (150 - 740)
Temperature: °C (°F)	Up to 594 (1100)
Flanges:	ASME 125 - 600
Features:	Wafer Design reduces size and unnecessary weight. Spring loaded dual disc provides a low cracking pressure.



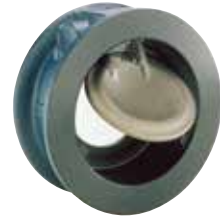
Wafer swing check valve

Brand/model:	Prince, 809, 810, 813
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	150 - 740 (1034 - 5102)
Temperature: °C (°F)	Up to 1000 (538)
Flanges:	ASME 125 - 300
Features:	Wafer design reduces unnecessary weight. Available in metal and resilient seats. External spring available to remove spring from flow path. Field replacable o-ring seat.



General purpose swing check valve

Brand/model:	Keystone F85A, F86
Size: DN (inches)	50 - 750 (2 - 30)
Pressure: kPa (psi)	Up to 1600 (232)
Temperature: °C (°F)	Up to 374 (190)
Flanges:	ASME & AS 2129
Features:	Wafer design, single flap, reduces size and weight. Low pressure shut-off. Spring loaded design.



KNIFE GATE VALVES

Uni-directional resilient & metal seated

Brand/model:	Keystone F951/F952
Size: DN (inches)	50 - 600 (2 - 24)
Pressure: kPa (psi)	1000 (150)
Temperature: °C (°F)	230 (446)
Flanges:	ASME, AS 2129
Features:	Wafer and lugged body. Self aligning gland box. One piece cast body and chest. Stainless steel valve body and trim.



Ported slide gate

Brand/model:	Keystone F955
Size: DN (inches)	50 - 750 (2 - 30)
Pressure: kPa (psi)	1600 (240)
Temperature: °C (°F)	120 (248)
Flanges:	ASME 150, AS 2129 C/D/E, DIN 6/10/16, JIS PN6/10
Features:	Ported slide gate design for superior slurry handling capabilities. Bi-directional sealing capabilities. A choice of both full bore models and reduced bore polyurethane seated versions matched to lined pipe bores. Stellited seat standard. Full range of actuators available.



Uni-directional metal seated

Brand/model:	Rovalve S20
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	1000 (150)
Temperature: °C (°F)	455 (883)
Flanges:	ASME, AS 2129
Features:	Cast stainless steel body. Shut-off to MSS SP-81.



Bi-directional cartridge seal

Brand/model:	Keystone PCS17
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	1000 (150)
Temperature: °C (°F)	205 (400)
Flanges:	ASME, AS 2129, DIN, PN
Features:	Bi-directional zero leakage valve. Field replaceable one piece cartridge seat. Four post yoke. Integral packing support bar with metal substrate.



Heavy duty slurry isolation

Brand/model:	Clarkson KGD
Size: DN (inches)	50 - 600 (2 - 24)
Pressure: kPa (psi)	1380 (200)
Temperature: °C (°F)	150 (300)
Flanges:	ASME, AS 2129, PN
Features:	Bi-directional shut-off. Wafer style body. Replaceable full port elastomer sleeves. No metal parts in the flow path.



Heavy duty slurry isolation

Brand/model:	Clarkson KGA
Size: DN (inches)	80 - 1500 (3 - 60)
Pressure: kPa (psi)	690 (100)
Temperature: °C (°F)	150 (300)
Flanges:	ASME, AS 2129
Features:	Bi-directional shut-off. Heavy duty slurry valve. Replaceable full port elastomer sleeves. No metal parts in the flow path (open position).



High pressure heavy duty

Brand/model:	Clarkson KGF (HP)
Size: DN (inches)	80 - 900 (3 - 36)
Pressure: kPa (psi)	5110 (740)
Temperature: °C (°F)	150 (300)
Flanges:	ASME, AS 2129
Features:	Bi-directional shut-off. Heavy duty slurry valve. Replaceable full port elastomer sleeves. No metal parts in the flow path open position.



Polymer lined

Brand/model:	L&M M345 (HP)
Size: DN (inches)	50 - 1500 (2 - 60)
Pressure: kPa (psi)	8270 (1200)
Temperature: °C (°F)	180 (350)
Flanges:	ASME, AS 2129
Features:	Three piece replaceable polymer liner. Bi-directional flow. Full port design.



LINE BLINDS

Mansafe

Brand/model:	Clarkson KLB/KGL
Size: DN (inches)	50 - 900 (2 - 36)
Pressure: kPa (psi)	150 - 740 (1034 - 5102)
Temperature: °C (°F)	Up to 538 (1000)
Flanges:	ASME 125 -300
Features:	Wafer design reduces unnecessary weight. Available in metal and resilient seats. External spring available to remove spring from flow path. Field replaceable o-ring



CONTROL VALVES

Slurry modulating

Brand/model:	Clarkson "C" Control
Size: DN (inches)	25 - 250 (1 - 10)
Pressure: kPa (psi)	700 (100)
Temperature: °C (°F)	150 (300)
Flanges:	ASME, AS 2129
Features:	Designed specifically for slurry throttling. No metal parts in flow path. Abrasive resistant elastomer sleeve.



V-Port control valve

Brand/model:	KTM V-Ball
Size: DN (inches)	25 - 200 (1 - 8)
Pressure: kPa (psi)	1965 (740)
Temperature: °C (°F)	260 (500)
Flanges:	ASME 150, 300
Features:	Full and reduced bore designs. V-Notch design allows equal percentage characteristics for precise control. One piece body design.



Metal seated butterfly

Brand/model:	Keystone F637/F638
Size: DN (inches)	80 - 600 (3 - 24)
Pressure: kPa (psi)	10,210 (1480)
Temperature: °C (°F)	230 (445)
Flanges:	ASME 150, 300, 600
Features:	Series 2 and Series E extended body design protects downstream pipeline. Replaceable liner. Choice of trim options. Modular actuator mounting.



Heavy duty metal seated butterfly

Brand/model:	Keystone F634
Size: DN (inches)	40 - 600 (1½ - 24)
Pressure: kPa (psi)	1960 (285)
Temperature: °C (°F)	230 (445)
Flanges:	ASME 150
Features:	Wafer style body. Robust Construction. Bi-direction isolation. Adjustable gland packing. Fully repairable asset with replaceable internals. Available in various coating options to improve performance.



V-Ported knife gate

Brand/model:	Keystone F955 V-Port
Size: DN (inches)	40 - 600 (1½ - 24)
Pressure: kPa (psi)	1960 (285)
Temperature: °C (°F)	230 (445)
Flanges:	ASME 150, AS 2129
Features:	Wafer style body. Robust Construction. Bi-direction isolation. Adjustable gland packing. Fully repairable asset with replaceable internals. Available in various coating options to improve performance.



ACTUATORS & CONTROLS

Electric actuators

Brand/model:	Keystone, Biffi F01/F02/2000
Type:	¼ turn, Multi turn
Torque: Nm (lbf-ft)	Up to 2160 (1593)
Voltage:	Single and three phase
Temperature: °C (°F)	60 (140)



Pneumatic aluminium

Brand/model:	Keystone, Biffi F79U, MRP
Type:	Double acting, Spring return
Torque: Nm (lbf-ft)	Up to 250,000 (184,390)
Supply Pressure:	
kPa (psi)	1050 (150)
Temperature: °C (°F)	90 (195)



Pneumatic S/S & DI

Brand/model:	Morin F79S, F79B
Type:	Double acting, Spring return
Torque: Nm (lbf-ft)	Up to 250,000 (184,390)
Supply Pressure:	
kPa (psi)	1050 (150)
Temperature: °C (°F)	85 (185)



Hydraulic actuators

Brand/model:	Keystone, Morin Series HP
Type:	Linear, ¼ turn
Torque: Nm (lbf-ft)	Up to 400,000 (7,116)
Supply Pressure:	
kPa (psi)	10,345 (1500)
Temperature: °C (°F)	100 (212)



Positioners

Brand/model:	Keystone, Avid, Westlock, F793
Type:	Analogue, programmable
Supply Pressure:	
kPa (psi)	827 (120)
Temperature: °C (°F)	85 (185)



PROCESS AUTOMATION



	H1	HSE	DP	PA	SDS	AS-i Interface
Typical Applications:	Process industry, smart instrumentation, factory automation	Process industry, factory automation	Process industry, factory automation	Process industry, smart instrumentation	Process industry, factory automation	Process industry, factory automation
Data Rates (bits/sec):	31.25k	100M	9.6K-12M	31.25k	125/250/500K	167k
Communication technique:	Single master/multi master	Ethernet	Master/slave peer to peer	Gateway	Producer/consumer peer to peer	Master/slave
Media access algorithm:	Token passing	Token passing	Token passing	Token passing	CSMA/CD/NDA	Cyclic polling
Supported media:	Optical fiber, radio propagation (planned), twisted pair	Optical fiber, radio propagation (planned), twisted pair	Optical fiber, twisted pair	Twisted pair	Optical fiber, twisted pair	Pair
Maximum number of nodes:	32 per segment	-	127 per network	32 per segment	64 per network	62 per network
Deterministic:	Yes	Yes	Yes	Yes	Yes	Yes
Intrinsic safety:	Yes	No	No	Yes	No	No
Bus powered:	Yes	No	No	Yes	No	Yes
ASIC available:	Planned	Planned	Yes	Yes	Yes	Yes
Physical-layer standard:	IEC 61158-2 IEC 61784	IEC 61158	IEC 61158 IEC 61784	IEC 61158-2 IEC 61784	IEC 62026-3	IEC 62026-2
Applicable standards:	IEC 1158 ISA S50	IEC 1158 ISA S50	EN 50170 (part 2) DIN 19245	DIN 19245	ISO 11898	IEC 947-5-2D, EN 60947, DIN VDE 0660/208

Notes:

H1 and H2 are Foundation Fieldbus terms that the IEC does not use.

Profibus-DP also has an extended command set called DPV1, described in extensions to EN 50170, Version 1.0, November 1996.

DeviceNet and SDS are application-layer utilities that use CAN for the physical layer.

CSMA/CD: Carrier sense multiple access/collision detection; NDA: nondestructive bit wise arbitration.



SERVICE SOLUTIONS

Valve and actuator repairs

Remove, overhaul, install and re-commission.
Documentation – the entire repair process of each valve is documented and dispatched with a detailed report.

Control valves

Support of all common interfaces (PROFIBUS, DeviceNet™ and AS-i®).
Loop check, calibration, reconditioning and testing.
Trouble shooting.

Instrumentation

Servicing and calibration devices such as pH, temperature, flow, conductivity, and pressure
Most voltages/pressures
Trouble shooting.

Safety relief valves

Repair and service all manufacturers' safety relief valves from steam, gas, air and liquid service.
Accredited testing facility.
Pilot operated – both soft seat and hard seat.
Direct spring – conventional or balanced.
Tank vacuum/pressure relief.
Safety selector valves.
Anderson Greenwood and Crosby repair and testing centre.
Workshop or on-site testing, repairs and calibration.

ISO and NATA pressure

Pressure test to most international API and ASME standards.

Pump equipment

This includes the supply and retro-fit of high efficiency impellers, upgrading of wet end materials.
Components and sealing devices.
Additional services include hard facing and metal spraying to increase resistance to erosion and corrosion.

Pneumatic / hydraulic equipment

The complete refurbishment and servicing of hydraulic pumps, motors and power packs, along with linear actuators including seals, piston rods and re-chroming.

Field services

Installation, commissioning, service, repair and ongoing maintenance.
Repacking.
Calibration.
In-situ safety relief valve.
Testing ASME I.
In-situ valve lapping.
Emissions monitoring.



VALVES & CONTROLS

PENTAIR FLOW CONTROL PTY LIMITED

ABN: 83 000 922 690

www.pentair.com/valves

All Pentair trademarks and logos are owned by Pentair, Ltd. All other brand or product names are trademarks or registered marks of their respective owners.

Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice. Pentair is an equal opportunity employer.

G10B/5/13 © 2013 Pentair, Ltd. All Rights Reserved