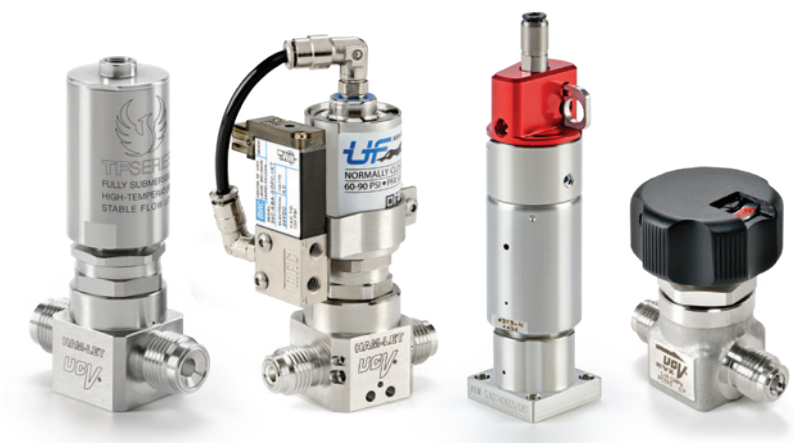
HAM-LET ULTRA CLEAN DIAPHRAGM VALVES

UCV®

- Electropolished Valves
- Variety of conections and surface mount
- Air operated and Manual valves



ULTRA-CLEAN DIAPHRAGM VALVES INDEX

STANDARD PERFORMANCE

METAL SEAT

HIGH PRESSURE

SURFACE MOUNT

STANDARD SERIES
HMS

COMPACT SERIES
HMSC

HIGH LIFE CYCLE SERIES
HCS

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HYPS

HYBRID VALVE
2LN

ECONOMICAL VALVES

REPLACEABLE SEAT MODEL
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GENERAL PURPOSE
EVZ

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HIGH-FLOW
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MULTI-PORT MONOBLOCK VALVE
HMB

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UF

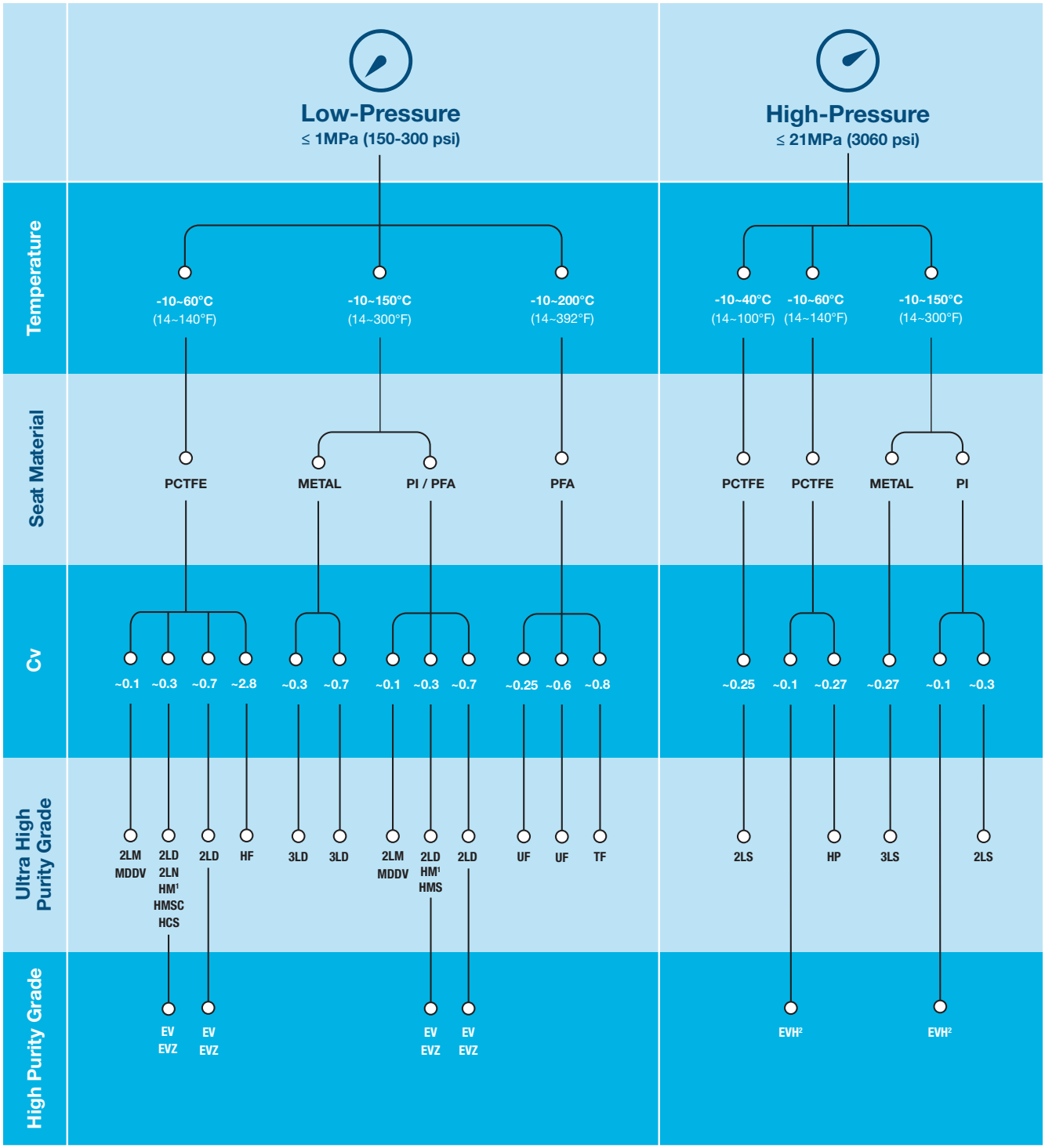
FULLY SUBMERSIBLE HIGH-TEMPERATURE
TF

CHECK VALVES

COMPACT WELDED CHECK VALVES
CMW

UCV MODEL SELECTION TABLE

Choose a solution based on the application parameters



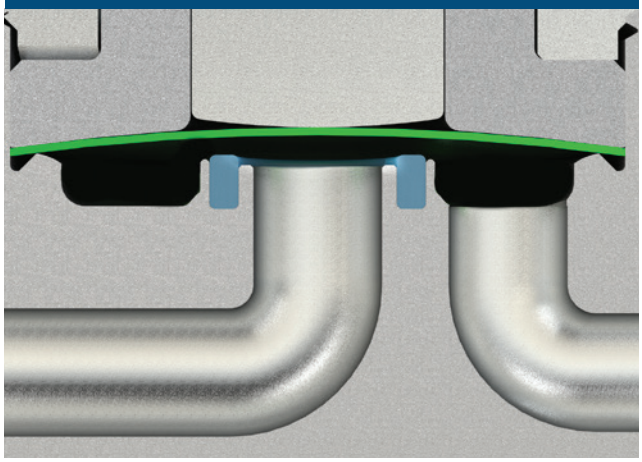
[1]300 PSI as an option.
[2]2300/3060 PSI as a standard

PCTFE - PolyChloroTriFluoroEthylene | **PI** - Polyimide | **PFA** - PerfluoroAlkoxy

BASIC UCV STRUCTURES

Ultra clean valves (UCVs) are diaphragm operated valves made from either SST316L or SST316L VAR or VIM/VAR body according to ASTM A276 per semi F20. The valve's diaphragm is made of a highly resistant Co-Cr-Ni Alloy. The diaphragm design minimizes the wetted surface area, dead volume and particle generation. UCVs available in high-purity (HP) or ultra-high purity (UHP) grades with 3 main valve structures:

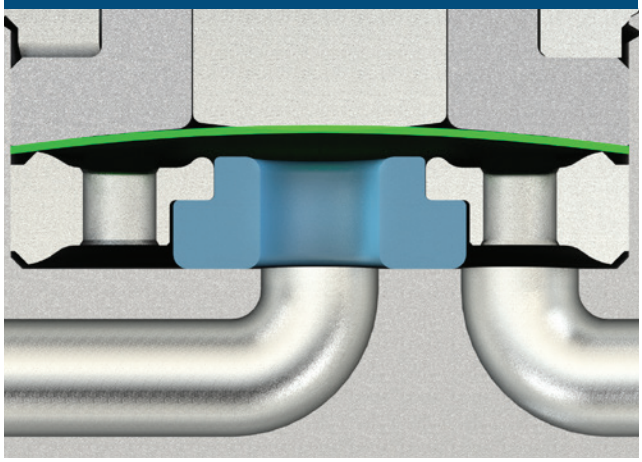
A. PRESS FIT SEAT VALVE



Press fit seat valves (available in HP and UHP grades)

These valves use smaller sized seats made of either PCTFE, PFA or Polyimide that are tightly pressed to fit the valve body. In general, these valve types tend to be more economical, less complex and more reliable. In addition, minimized seat volumes ease the problems of outgassing and seat creeping.

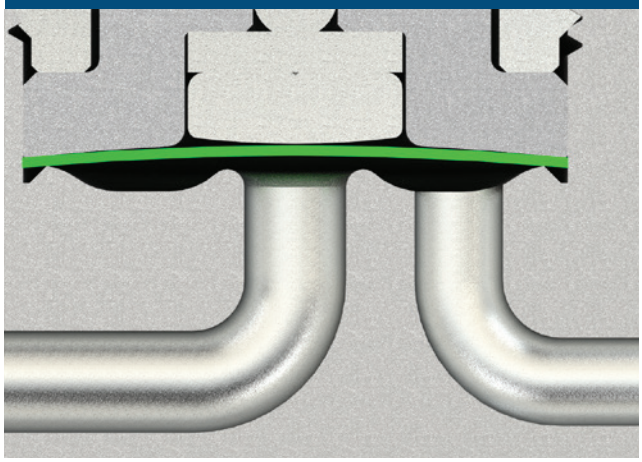
B. SOFT SEAT VALVE



Soft replaceable seat (available in HP and UHP grades)

Our standard line of valves using seats made of either PCTFE, PFA or Polyimide.
The seat holder design minimizes the dead volume on the seat bottom offering better sealing capabilities and extends the valve's life cycle by the possibility to easily exchange (rebuild[1]) worn-out seats.

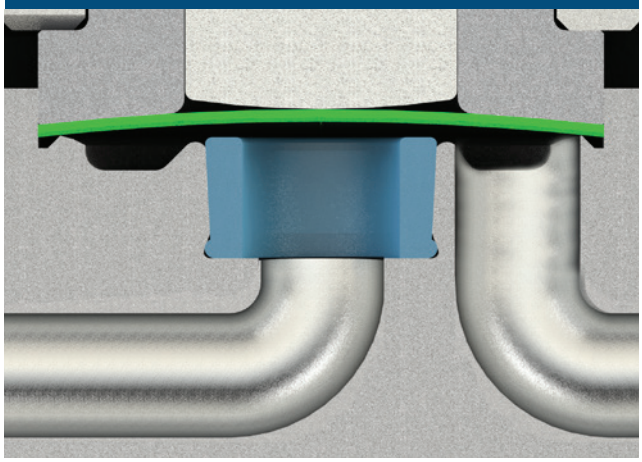
C. ALL-METALLIC VALVE



All-metallic valves (available only in UHP grade)

UHP valves with electropolished wet surfaces as a default. In these valves, the diaphragm directly seals the valve's inlet. These valves do not have any polymeric materials in their wetted surfaces. Therefore, such valves are ideally suited for use with highly reactive media. Also, the lack of polymeric seats enables work at elevated temperatures.

D. SOFT REPLACEABLE PLUG-IN SEAT (HP SERIES)



Standard line of valves using seats made of PCTFE

In general, these valve types tend to be more economical, less complex and more reliable. The special design minimizes the dead volume on the seat bottom without the presence of a seat holder. Soft replaceable plug-in seat offers the possibilty to easily exchange (rebuild) seats.

[1]In some models with proper training

UCV GRADES AND SPECIFICATIONS

UHP[1] GRADE, 3L SERIES

Type	Size (inch)	Cv	Max. Working Pressure	Working Temp.	Application	Drive	Feature
3LD	1/4, 1/2	0.25, 0.7	1MPa/150psi	-10~150°c	On-Off	Manual and pneumatic	Multiuse
3LS	1/4, 1/2	0.23, 0.25	21MPa/3060 psi	-10~150°c	On-Off	Manual and pneumatic	High-pressure high-flow

UHP[1] GRADE

Type	Size (inch)	Cv	Max. Working Pressure	Working Temp.	Application	Drive	Feature
2LM	1/4	0.05, 0.1	1MPa/150 psi	-10~60°c	Flow control	Graduated manual	Compact
2LD	1/4, 1/2, 3/4	0.3, 0.7, 2.2	1MPa/150 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
2LS	1/4, 1/2	0.25, 0.27	15.9MPa/2300 psi Option: 21MPa/3060 psi	-10~60°c	On-Off	Manual and pneumatic	High-pressure use
HM	1/4"	0.3	1MPa/150 psi Option: 2MPa/300 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
HMS	1/4	0.3	1MPa/150 psi Option: 2MPa/300 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
HMSC	1/4	0.27	1MPa/150 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
HCS	1/4	0.3	1MPa/150 psi	-10~60°c	On-Off	Pneumatic	Multiuse
2LN HB	1/4	0.3	1MPa/150 psi Option: 2MPa/300 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
HMB	1/4	0.3	1MPa/150 psi Option: 2MPa/300 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
HP	1/4	0.27	21MPa/3060 psi	-10~60°c	On-Off	Manual and pneumatic	High-pressure use
HF	3/4	2.8	1.7MPa/250 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
UF	1/4, 1/2	0.25, 0.6	1MPa/150 psi	-10~200°c	On-Off	Manual and pneumatic	Multiuse
TF	1/2	0.8	1MPa/150 psi	-10~200°c	On-Off	Manual and Pneumatic	Multiuse

HP[2] GRADE, EV & EVZ SERIES

Type	Size (inch)	Cv	Max. Working Pressure	Working Temp.	Application	Drive	Feature
EV	1/4, 1/2	0.3, 0.7	1MPa/150 psi	-10~60°c	On-Off	Manual and pneumatic	Multiuse
EVH	1/4	0.1	15.9MPa/2300 psi Option: 21MPa/3060 psi	-10~60°c	On-Off	Manual and pneumatic	High-pressure use
EVZ	1/4, 1/2	0.27, 0.65	1MPa/150 psi	-10~80°c	On-Off	Manual	Multiuse

[1]**UHP** - Ultra-High Purity
[2]**HP** - High Purity
NOTE: Polyimide (PI) seat is optionally selectable. Working temperature: -10 to 150°C

UCV MANUAL VALVE HANDLES

UCT offers its customers a variety of handles for efficient and excellent solutions.

Round Handle
240 Turn

Oval Directional
Handle 90 Turn

Loto Handle
Islt 90 Turn

Vernier Multi
Turn Handle

Lever Handle
90 Turn

Round Handle
90 Turn Label
Indicator

Loto Hybrid
Handle 90 Turn

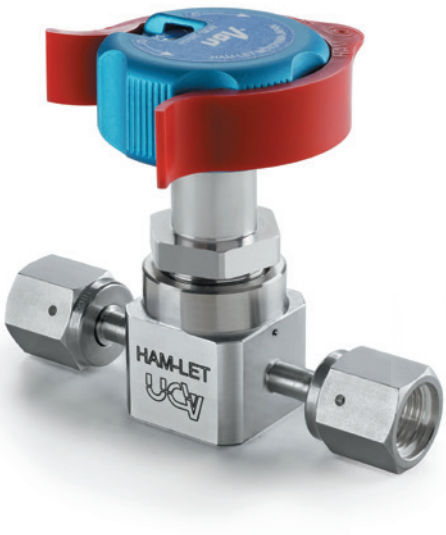
Ultra-Clean Diaphragm Valves		TYPE SERIES						
Type Series	Size inch	Round Handle 240 Turn	Oval Directional Handle 90 Turn	LOTO Handle-ISLT 90 Turn	Vernier Handle	Lever Handle 90 Turn	Round Handle 90 Turn Label Indicator	Hybrid ISLT
2LM	1/4				B			
2LD	1/4	B / K / R / W / Y	B / K / R / G	B / K / R / G				
	3/8	B / K	B	R				
	1/2	B / R	B	R				
HF	3/4	B		R				
EV	1/4	B / K / R		R				
	3/4	B / K						
	1/2	B / K						
EVZ	1/4	B / K		B				
	3/8	B / R						
	1/2	K / R		R				
2LS	1/4	B	B	R				
	3/8	B						
	1/2	B / R						
2LN	1/4							R
EVH	1/4	B / K						
HM	1/4	B / K / R	B / K / R / G / O	R				R
	1/2	B		R				
HMS	1/4		B	R				
HMSC	1/4			R				
	1/2			R				
HD	1/4						B	
HP	1/4	B				B		
3LD	1/4	B						
	1/2	B						
3LS	1/4	B						
MDDV	1/4	B			B			

• For more information, please contact one of our field representatives.
• For customization of handles: colors, sizes and new designs, please contact your local representative.
B: Blue | **K**: Black | **R**: Red | **G**: Green | **W**: White | **Y**: Yellow | **O**: Gold

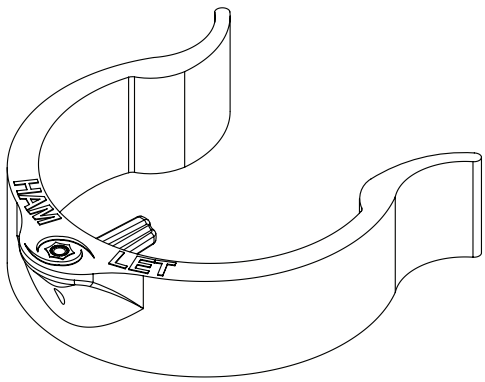
UCV SAFE DEVICE

UCT offers its customers a safety plastic feature which locks the round handle in position.

- Easy to connect & disconnect
- Can be ordered with the requested UCV or separately
- Works only with round handle 240° - 270° turn



Round Handle
240° Turn



ORDERING INFORMATION - SAFE DEVICE

Valves Description Example

2LD	-	S	-	4	-	R	-	BV	-	SD
Valve Series		Valve Type		Body Size		Actuation Device		End Connection		Feature

Feature	
P	- Polyimide
SD	- Safe Device
LD	- Lock Device

SEAT MATERIAL SELECTION

Gas	Molecular Formula	State of Matter[1]	Seat Materials[2] Diaphragm Valve		
			PCTFE	PI	Metal
AMMONIA	NH_3	LIQUEFIED GAS	A	C	A
BORON TRICHLORIDE	BCl_3		B	C	A
CHLORINE	Cl_3		B	D	A
DICHLORO SILANE	SiH_2Cl_2		B	C	A
DI-CHLORO DI-FLUORO METHANE	CCl_2F_2		A	C	A
DIETHYLZINC (DEZN) HEXANES	$(C_2H_5)_2Zn$		A	A	A
HEXA-FLUORO METHANE	C_2F_4		A	A	A
HYDROGEN CHLORIDE	HCl		B	D	A
HYDROGEN SULFIDE	H_2S		B	D	A
MONO-CHLORO TRI-FLUORO METHANE	$CClF_3$				
NITOROGEN OXIDE	N_2O		C	B	A
SILICON TERACHLORID	$SiCl_4$		B	C	A
SULFER HEXAFLORIDE	SF_6		B	B	A
TUNGSTEN HEXAFLUORIDE	WF_6		B	C	A
TRI FLUORO METHANE	CHF_3				
TETRAKIS (DIETHYLAMINO)TIN(IV) (TDMASN)	$[(C_2H_5)_2N]_4Sn$		B	C	A
TRIMETHYL ALUMINUM (TMA)	Al_2Me_6		B	C	A
ARGON	Ar	GAS	A	A	A
DISILANE	Si_2H_6		B	B	A
HELIUM	He		A	A	A
HYDROGEN	H_2		A	A	A
HYDROGEN SULFIDE	H_2S				
NITOROGEN	N_2		A	A	A
NITOROGEN TRIFLUORIE	NF_3		A	A	A
OXIGEN	O_2		A	A	A
PHOSPHINE	PH_3 PURE & MIX		B	B	A
SILANE	SiH_4		B	B	A
TETRA FLUORO METHANE	CF_4		A	A	A
ARSINE	ASH_3	COMPRESSED GAS	A	A	A
BORON TRICHLORIDE	BF_3		B	C	A
DIBORANE	B_2H_6		B	B	A
HYDROGEN BROMIDE	HBr		C	D	A

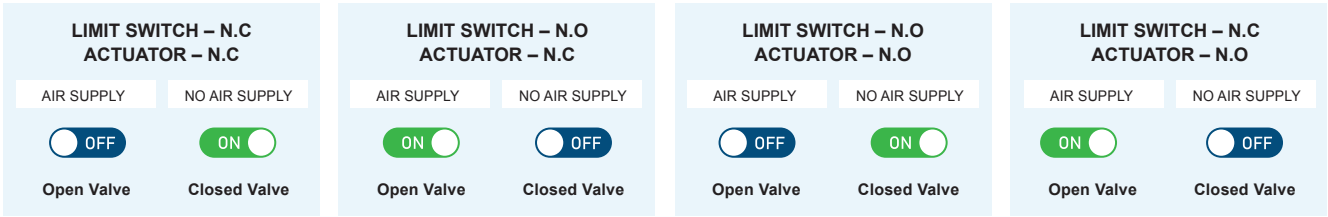
[1]State of Matter
[2]Seat Materials - **A**: Very Good **B**: Good **C**: Caution **D**: Poor

Warning! For your safety

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

LIMIT SWITCH

- Air Operated UCV can be indicated by a limit switch.
- The indicator will be according to the open or closed state of the actuator and the valve.
- Inductive and mechanical limit switch are part of the portfolio.



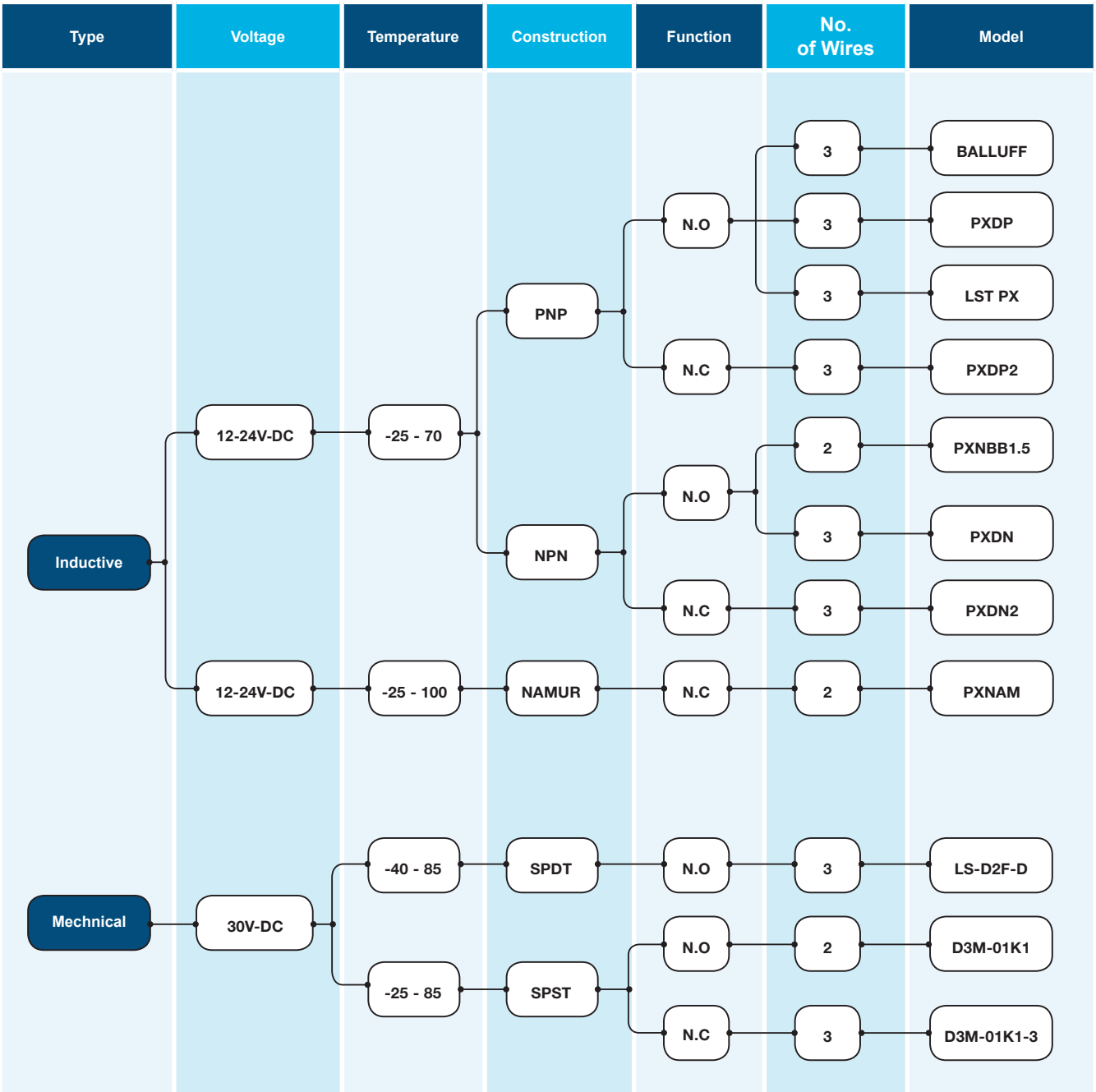
SERIES LIMIT SWITCH

		Inductive							Mechanical		
Series Valves	Size	PXDN	PXDN2	PXDP	PXDP2	PXNAM	PXNBB1.5	LST PX	BALLUFF	LST M5	LS-D2F
2LD	1/2"										Open / Closed
EV	1/4"										Closed
	3/8"										Closed
	1/2"										Open / Closed
EVZ	1/4"	Open / Closed	Open / Closed	Open / Closed	Open / Closed	Closed	Open / Closed	Open / Closed			
	1/2"	Open / Closed	Open / Closed	Open / Closed	Open / Closed	Closed	Open / Closed	Open / Closed			
2LS	1/4"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			
	1/2"										Closed
EVH	1/4"										Closed
3LD	1/2"	Open / Closed	Open / Closed	Open / Closed	Open / Closed	Closed	Open / Closed	Open / Closed			
3LS	1/4"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			Closed
HM	1/4"	Closed	Open / Closed	Open / Closed	Closed	Closed	Closed	Open / Closed		Closed	Open / Closed
	1/2"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			
HMS	1/4"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			
HMSC	1/4"	Closed	Open / Closed	Open / Closed	Closed	Closed	Closed	Open / Closed		Closed	
HP	1/4"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			Open / Closed
HMB	1/4"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			Closed
UF	1/4"								Closed		
	1/2"								Closed		
UFS	1/4"								Closed		
	1/2"								Closed		
TF	1/2"	Closed	Closed	Closed	Closed	Closed	Closed	Closed			

*For other options and configurations contact an authorized sales and service representative.

LIMIT SWITCH MODEL SELECTION TABLE

Make the initial choice taking the application parameters into account



N.O - Normally open
N.C - Normally close
NAMUR - Atex approved