

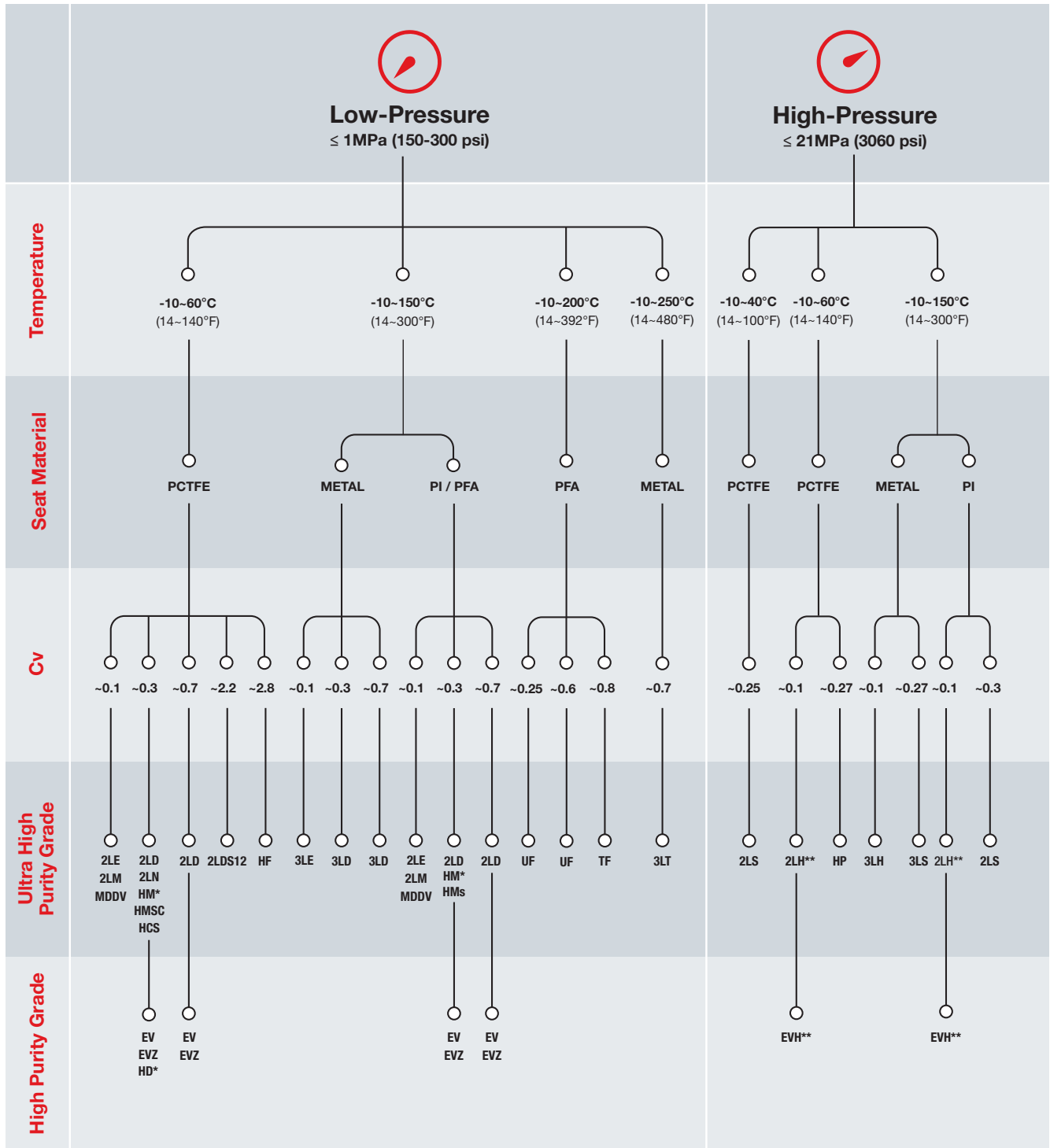
ULTRA CLEAN DIAPHRAGM VALVES

UCV[®]



UCV MODEL SELECTION TABLE

Make the initial choice, taking the application parameters into account



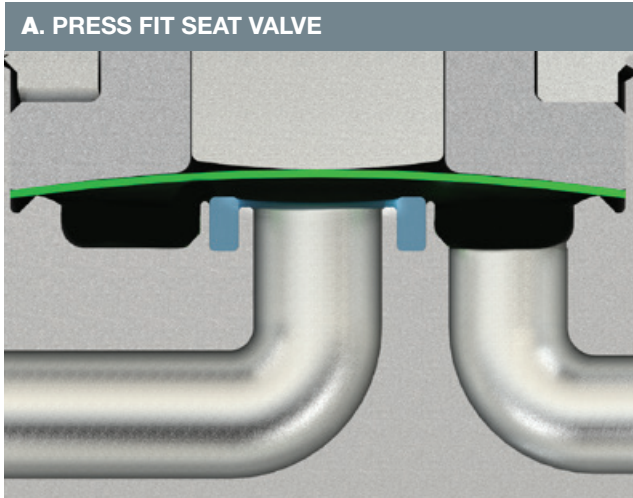
* 300 PSI as an option.
** 2300 / 3060 PSI as a standard.

PCTEE - PolyChloroTriFluoroEthylene | PI - Polyimide | PFA - PerfluoroAlkoxy

BASIC UCV STRUCTURES

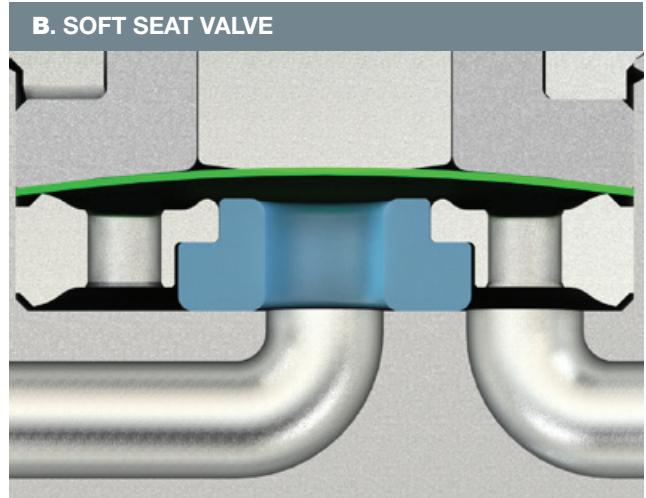
Ultra clean valves (UCVs) are diaphragm operated valves made from either SS316L or SS316L VAR or VIM/ VAR body according to ASTM A276 per semi F20 The valve's diaphragm is made of a highly resistant Co-Cr-Ni Alloy. The diaphragm design minimizes the wetted surface area, dead volume and particle generation.

HAM-LET's UCVs are available high-purity (HP) or ultra-high purity (UHP) grades with three main valve structures:



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

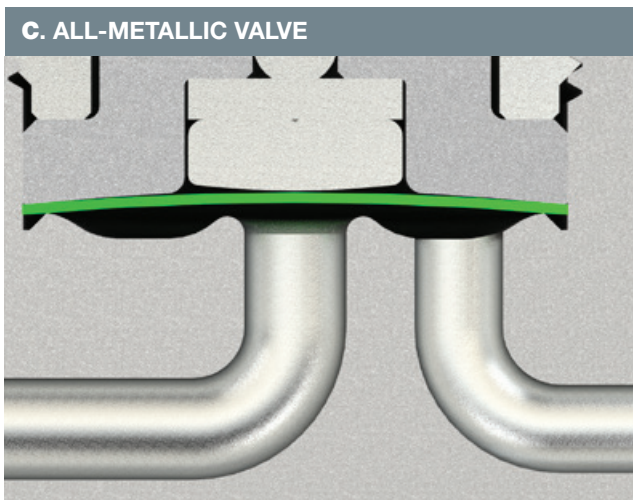
These valves use smaller sized seats made of either PCTFE, PFA or Polyimide that are tightly pressed to fit the valve body. In general, these valve types tend to be more economical, less complex and more reliable. In addition, minimized seat volumes ease the problems of outgassing and seat creeping.



Soft Replaceable seat (available in HP and UHP grades)

HAM-LET standard line of valves using seats made of either PCTFE, PFA or Polyimide.

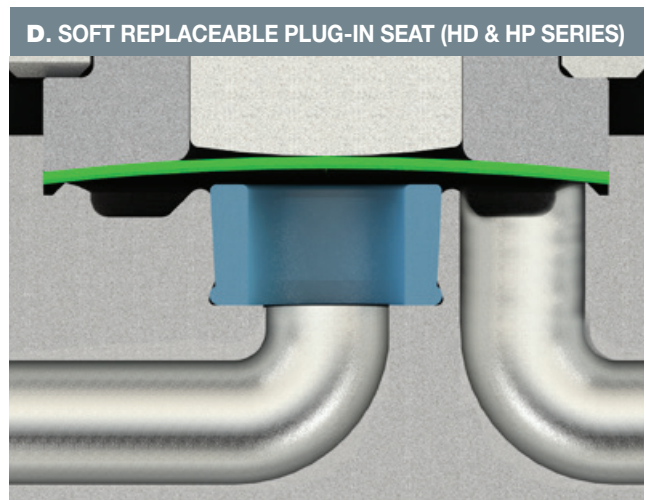
The seat-seat holder design minimizes even further the dead volume on the seat bottom, offers better sealing capabilities and extends the valve's life cycle by the possibility to easily exchange (rebuild*) worn-out seats.



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 don't have any polymeric materials in their wetted surfaces. Therefore, such valves are ideally suited for use with high-reactivity media and the lack of polymeric seats also enables the possibility to work in elevated temperatures (up to 250°C in some cases).

*In some models with proper training



HAM-LET 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 even further the dead volume on the seat bottom without presence of seat holder. the Soft Replaceable plug-in seat offers the possibility to easily exchange (Factory rebuild) worn-outs seats.

UCV GRADES AND SPECIFICATIONS

UHP** 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
3LH	1/8- 1/4	0.1	15.9MPa/2300 psi	-10~150°C	On-Off	Manual and Pneumatic	High-Pressure Use
3LE	1/8- 1/4	0.05-0.1	1MPa/150 psi	-10~150°C	On-Off	Manual and Pneumatic	Compact

UHP** GRADE

Type	Size (inch)	Cv	Max. Working Pressure	Working Temp.	Application	Drive	Feature
2LE	1/4	0.05 - 0.1	1MPa/150 psi	-10~60°C	On-Off	Manual and Pneumatic	Compact
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
2LH	1/4	0.05 - 0.1	15.9MPa/2300 psi Option: 21MPa/3060 psi	-10~60°C	On-Off	Manual and Pneumatic	High-Pressure Use
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
HMC	1/4	0.25	1MPa/150 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
2LDS12	3/4	2.2	1MPa/150 psi	-10~60°C	On-Off	Manual and Pneumatic	Multiuse
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* 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
HD	1/4	0.3	1MPa/150 psi Option: 2MPa/300 psi	-10~60°C	On-Off	Manual and Pneumatic	Multiuse

*HP - High Purity

**UHP - Ultra High Purity

Note: Polyimide (PI) seat is optionally selectable: working Temperature: -10 to 150°C

UCV MANUAL VALVES HANDLES

HAM-LET OFFERS ITS CUSTOMERS A VARIETY OF HANDLES FOR AN EFFICIENT AND EXCELLENT SOLUTION. CHOOSE THE APPROPRIATE HANDLE ACCORDING TO THE FOLLOWING CHART.



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 Round Handle 90 turn LOTO Hybrid handle 90 turn

Ultra-Clean Diaphragm Valves		TYPE SERIES							
Type Series	Size	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	Round Handle 90 turn - 2LE	Hybrid ISLT
2LE	1/4		B					B	
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					
2LDS12	3/8	B							
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					
2LH	1/4	B / R	B						
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					
HMC	1/4	B	B	R					
HD	1/4						B		
HP	1/4	B				B			
3LD	1/4	B							
	1/2	B							
3LE	1/4	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

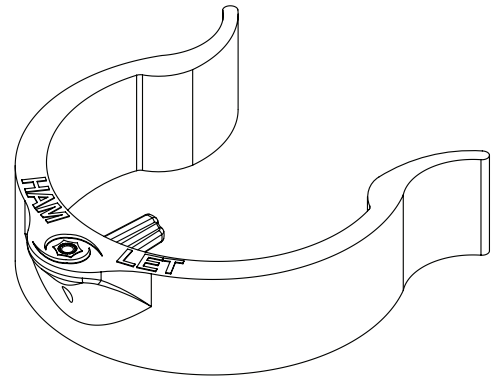
HAM-LET OFFERS ITS CUSTOMERS A VARIETY OF HANDLES FOR AN EFFICIENT AND EXCELLENT SOLUTION.

Hat-Let offers its customers a safety plastic feature which locks the round handle in a certain position.

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

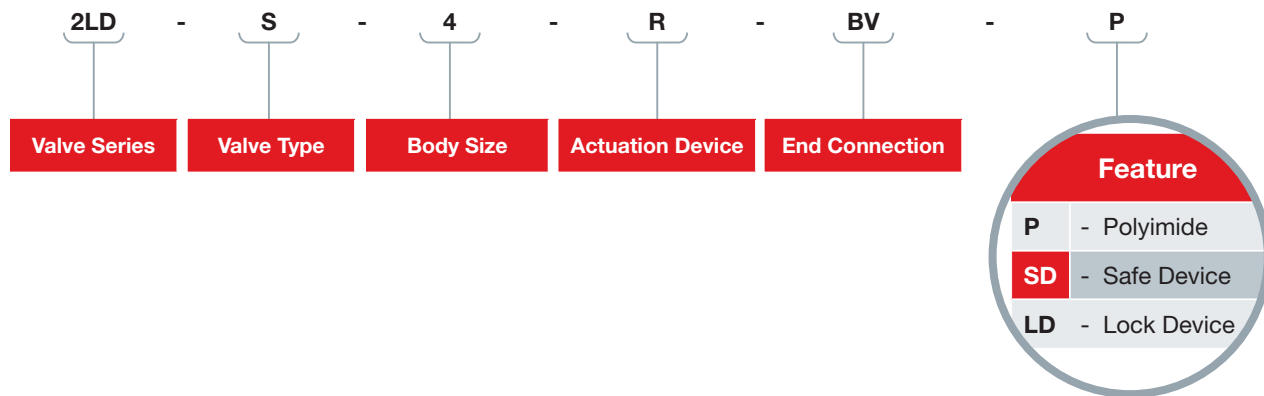


Round Handle
240 turn



SAFE DEVICE ORDERING INFORMATION

Valves Description Example:



SEAT MATERIAL SELECTION

Gas	Molecular Formula	State*	Seat Materials** Diaphragm Valve		
			PCTFE	PI	Metal
AMMONIA	NH ₃	LIQUEFIED GAS	A	C	A
BORON TRICHLORIDE	BCl ₃		B	C	A
CHLORINE	Cl ₂		B	D	A
DICHLORO SILANE	SiH ₂ Cl ₂		B	C	A
DI-CHLORO DI-FLUORO METHANE	CCl ₂ F ₂		A	C	A
DIETHYLZINC (DEZN) HEXANES	₂ Zn(C ₂ H ₅)		A	A	A
HEXA-FLUORO METHANE	C ₂ F ₄		A	A	A
HYDROGEN CHLORIDE	HCl		B	D	A
HYDROGEN SULFIDE	H ₂ S		B	D	A
MONO-CHLORO TRI-FLUORO METHANE	CClF ₃				
NITROGEN OXIDE	N ₂ O		C	B	A
SILICON TETRACHLORIDE	SiCl ₄		B	C	A
SULFUR HEXAFLORIDE	SF ₆		B	B	A
TUNGSTEN HEXAFLUORIDE	WF ₆		B	C	A
TRI FLUORO METHANE	CHF ₃				
(TETRAKIS (DIETHYLAMINO)TIN(IV) (TDMASN	₄ Sn[₂ N(C ₂ H ₅)]		B	C	A
(TRIMETHYL ALUMINUM (TMA	Al ₂ Me ₆		B	C	A
ARGON	Ar		GAS	A	A
DISILANE	Si ₂ H ₆	B		B	A
HELIUM	He	A		A	A
HYDROGEN	H ₂	A		A	A
HYDROGEN SULFIDE	H ₂ S				
NITROGEN	N ₂	A		A	A
NITROGEN TRIFLUORIDE	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	A		A	A
BORON TRICHLORIDE	BF ₃	COMPRESSED GAS	B	C	A
DIBORANE	B ₂ H ₆		B	B	A
HYDROGEN BROMIDE	HBr		C	D	A

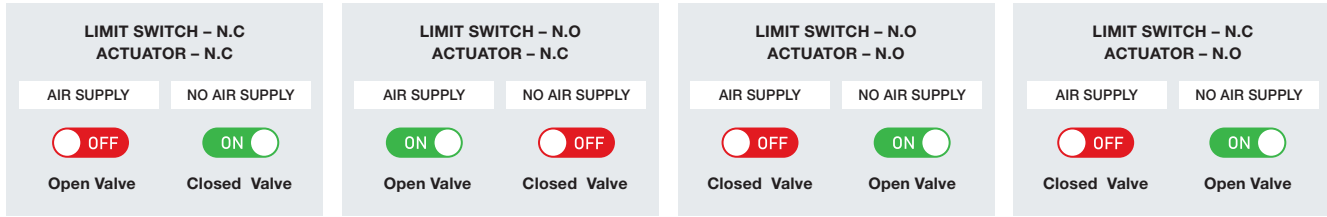
** SEAT MATERIALS - A: VERY GOOD B: GOOD C: CAUTION D: POOR

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 close state of the actuator and the valve.
- Inductive and mechanical limit Switch are part of the portfolio.



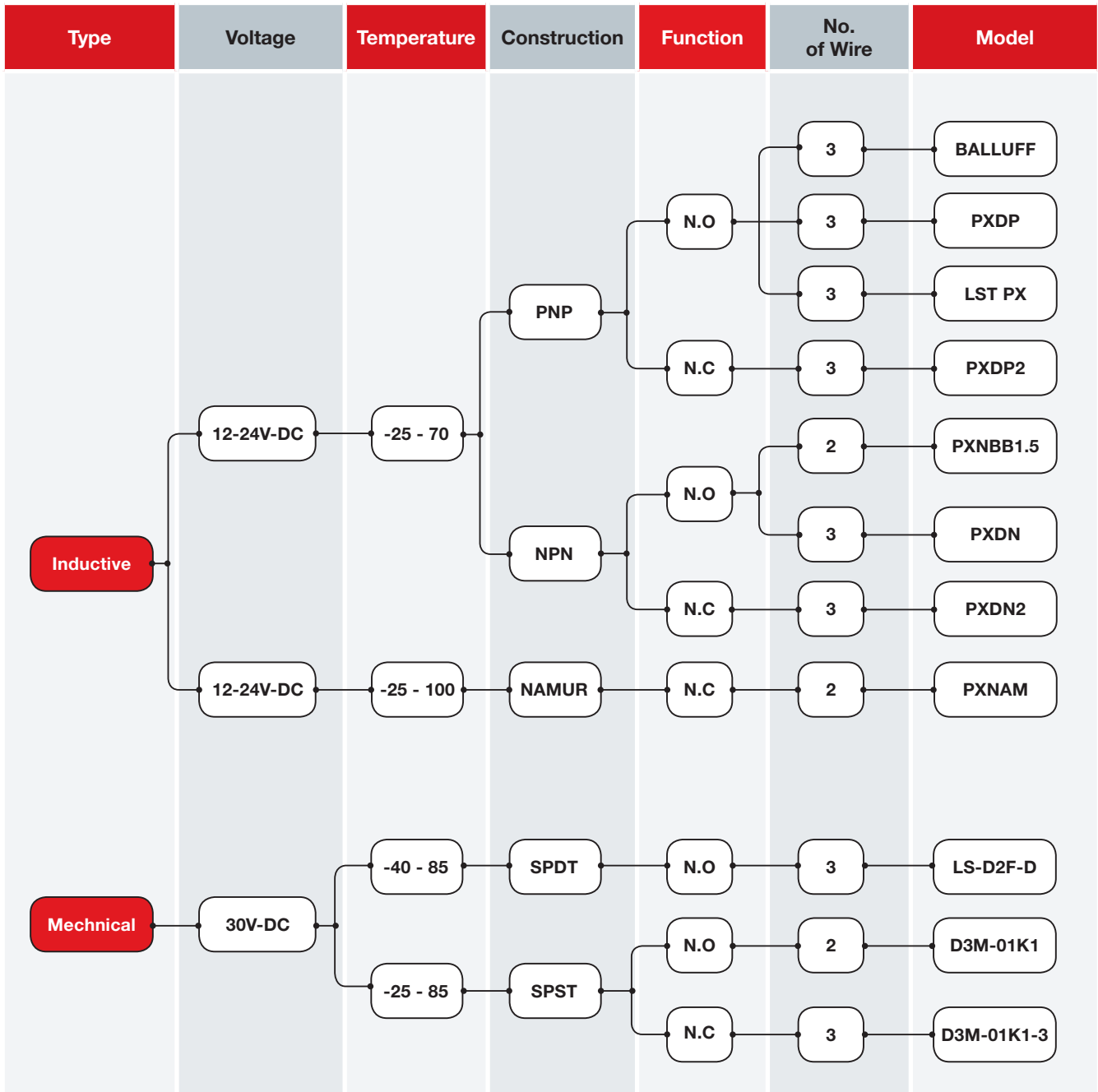
SERIES LIMIT SWITCH

		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			
2LH	1/4	Closed	Closed	Closed	Closed	Closed	Closed	Closed			
2LS	1/4	Closed	Closed	Closed	Closed	Closed	Closed	Closed			
	1/2										Closed
EVH	1/4										Closed
3LT	1/2										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
3LH	1/4	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	
HMC	1/4	Open / Closed	Open / Closed	Open / Closed	Open / Closed	Closed	Open / Closed	Open / Closed			
HD	1/4	Closed	Closed	Closed	Closed	Closed	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 authorized Ham-Let 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

UCV[®]