



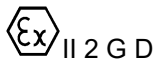
Type Examination Certificate **CML 19ATEX6119X Issue 0**

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Pulse Valve – 400 Series Pilot Remote Bleed (PV03 – PV06 – PV09)**
- 3 Manufacturer **MAC VALVES EUROPE INC.**
- 4 Address **Rue Marie Curie, 12
B-4431 Ans (Liège)
Belgium**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU.
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Annex VIII apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN ISO 80079-36:2016

EN ISO 80079-37:2016

- 10 The equipment shall be marked with the following:



Ex h IIC T5 Gb

Ex h IIIC T100°C Db

Ta = 0°C to +80°C

(The ambient temperature range is defined in the Specific Conditions of Use)

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11 Description

The MAC Pulse Valve-400 Series Pilot Remote Bleed - valve (PV-XX) is a 2/2 Way NC valve intended to be used for high flow applications in an external environment where an explosive atmosphere is likely to be present. The valve is available in 3 different sizes: PV03 – PV06 – PV09.

The MAC Pulse Valve (PV-XX) is intended to be mounted on a base, which does not form part of the certification. The MAC Pulse Valve (PV-XX) comprises two parts; the main valve (PV) and the pilot valve (41H).

The housing of the main valve consists of a semi-circular machined body and two bolted covers, which house the valve mechanism; the main valve is made from an aluminium alloy, which is coated with 'Water Reducible Black Matte' material. The main valve mechanism consists of a main spool and a mechanical return spring. The main spool is made of one piece called MAC bonded rubber spool operated on both sides by the air coming from the pilot valve.

The main valve is operated by the air coming from the pilot valve (pilot air); the main valve is connected to the main air, the pilot valve to the pilot air. The pilot air may come either from the main air or from an external pilot supply. Opening or closing the remote bleed port located on the remote bleed pilot allows the main valve to switch on or off. The opening/closing of the remote bleed port is operated by a 2/2-way valve.

The pilot valve (41H) comprises a main body, and the remote bleed pilot valve (HXA); the main body is of rectangular shape, it is manufactured from an aluminium alloy, and it houses the bleed pilot valve mechanism. The pilot valve mechanism consists of a pilot spool and a mechanical return spring. The pilot spool is made of one piece called MAC bonded rubber spool operated on both sides by the air coming from the remote bleed pilot valve.

The remote bleed pilot valve comprises the body and the remote bleed operator; the body is of rectangular shape, it is manufactured from an aluminium alloy, and it houses the remote bleed pilot mechanism. The remote bleed pilot mechanism consists of a poppet and a mechanical return spring. The poppet is made of one piece called MAC bonded rubber poppet and 2 D-seals. The poppet is operated on one side by the remote bleed operator, on the other side by the mechanical return spring.

The MAC Pulse Valve (PV-XX) series of valves may be used together with the electrically operated Pneumatic Solenoid Valves Series 200B, which are separately certified under CML 18ATEX1240X.

Fluid	Compressed air	
Main pressure range	0 to 800 kPa (0 to 8 bar)	
Pilot pressure range	280 to 800 kPa (2.8 to 8 bar)	
Lubrication	Lubricated for complete life duration.	
Filtration	40 µm	
Flow (at 6 bar, ΔP=1bar)	MAC PV03 Series	24000 NI/min (24 Cv)
	MAC PV06 Series	53200 NI/min (53.2 Cv)
	MAC PV09 Series	100000 NI/min (100 Cv)
Operation	Remote bleed pilot	



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12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	10 Jan 2020	R12210A/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. The operating temperature range of the equipment is 0°C to +80°C; the equipment shall not be employed outside this temperature range.
- ii. The full model number defining the specific design variant of each unit shall be marked.
- iii. The equipment may be supplied together with the Pneumatic Solenoid Valve Series 200B (CML 18ATEX1240X). Only design variants of the Pneumatic Solenoid Valve Series 200B which have a T5 Temperature class and a T100°C assigned maximum surface temperature shall be provided; design variants which have a T4 Temperature class and a T135°C assigned maximum surface temperature are not permitted.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. The enclosure is manufactured from aluminium. In rare cases, ignition sources (mechanical sparks) due to impact and/or friction could occur. It is the user's responsibility to ensure that the equipment is protected in service by location or suitable guarding. Furthermore, it is the user's responsibility to maintain the external parts of the equipment in accordance with the manufacturer's instructions.
- ii. Regular cleaning of the enclosure shall be carried out to avoid deposit of a dust layer; refer to the manufacturer's User's Manual.
- iii. It is the user's responsibility to ensure that the supplied air is from a non-hazardous area, and it is clean, dry, oil free and dust free.
- iv. The operating (service and ambient) temperature range of the equipment is 0°C to +80°C; it is the user's responsibility to ensure that the intended application does not exceed the specified upper and lower temperature limits.
- v. Hazardous electrostatic charges of metallic and non-metallic parts and/or hazards from stray currents shall be prevented. This can be achieved by connection to the local equipotential bonding; it is the user's responsibility to ensure that the equipment is connected to earth appropriately.
- vi. As specified by the manufacturer, the equipment is not user serviceable; the equipment shall be returned to the manufacturer for repairs, maintenance and/or modifications.
- vii. It is the user's responsibility to ensure that any conditions and/or limitations specified by the manufacturer regarding the use and operation of the equipment, are observed prior to installing and commissioning the products and during service as appropriate.



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- viii. When the equipment, i.e. the MAC Pulse Valve (PV-XX) series of valves, is used together with the electrically operated Pneumatic Solenoid Valves Series 200B (CML 18ATEX1240X), the operating (service and ambient) temperature range of the equipment is limited to 0°C to +40°C.

The Pneumatic Solenoid Valves Series 200B have a temperature class of T5 or T4 and an assigned maximum surface temperature of T100°C or T135°C, depending on the design variant. The equipment, i.e. the MAC Pulse Valve (PV-XX) series of valves, shall only be used with the Pneumatic Solenoid Valve Series 200B design variant that has a temperature class of T5 and an assigned maximum surface temperature of T100°C.

Certificate Annex

Certificate Number CML 19ATEX6119X
Equipment Pulse Valve – 400 Series Pilot Remote Bleed
(PV03 – PV06 – PV09)
Manufacturer MAC VALVES EUROPE INC.



The following documents describe the equipment or component defined in this certificate:

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Drawing No	Sheets	Rev	Approved date	Title
41HB-00A-HX-RBXX	1 of 1	C	08 Jan 2020	Assembly, 400 remote bleed for PV'S
21230	1 of 1	A	08 Jan 2020	Spool return spring
21325	1 of 1	B	08 Jan 2020	Memory spring
21326	1 of 1	A	08 Jan 2020	Return spring
21369	1 of 1	A	08 Jan 2020	Memory spring
2019-12-10-MVE-CAT-PV ATEX Electrical	1 to 13	01	08 Jan 2020	MAC Pulse Valve Series Catalogue ATEX Electrical Operation
2019-12-10-MVE-CAT-PV ATEX Remote Bleed	1 to 13	01	08 Jan 2020	MAC Pulse Valve Series Catalogue ATEX Remote Bleed Operation
14511	1 of 1	C	08 Jan 2020	Marking plate "ATEX"
HXA-RBXX	1 of 1	B	08 Jan 2020	Assembly, HX remote bleed for PV'S
PV09B-XXX-41X-DXXV- YZZ RAXX RBXX	1 of 1	D	08 Jan 2020	PV09 Valve Assembly, 400 Pilot
SIRE1552F-101	1 of 1	-	08 Jan 2020	HXA-RBXX Pilot ATEX Assessment
SIRE1552F-102	1 of 1	-	08 Jan 2020	41HB-00A-HX-RBXX PILOT PVXX ATEX Assessment Material
SIRE1557A-200-101	1 of 1	-	08 Jan 2020	200 SERIES PILOT PV & 400 PILOT ATEX Assessment Calculations
SIRE1557A-200-102	1 of 1	-	08 Jan 2020	200 SERIES PILOT PV03 & 400 ATEX Assessment Material
SIRE1557A-200-103	1 of 1	-	08 Jan 2020	200 SERIES PILOT PV06 ATEX Assessment Material
SIRE1557A-200-104	1 of 1	-	08 Jan 2020	200 SERIES PILOT PV09 ATEX Assessment Material