



EU Type Examination Certificate CML 15ATEX1185X Issue 1

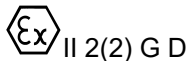
- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Purge Controller**
- 3 Manufacturer **PPI Engineering Ltd**
- 4 Address 44 Rose Lane
Norwich
NR1 1PN
UK
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 to the Directive.

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 EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 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 60079-0:2012 EN 60079-1:2014 EN 60079-2:2014
EN 60079-7:2007 EN 60079-11:2012 EN 60079-18:2015
EN 60079-31:2014

- 10 The equipment shall be marked with the following:

Purging System Models:

PP1214.1.1, PP1214.2.1, PP1214.3.1 and PP1214.4.1



II 2(2) G D

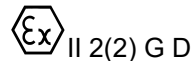
Ex db eb mb [ib] [pxb] IIC T4 Gb

Ex tb [pxb] [ib] IIIC T135°C Db

Ta = -40°C to +55°C

Purging System Models:

PP1214.1.2, PP1214.2.2, PP1214.3.2 and PP1214.4.2



II 2(2) G D

Ex db eb [ib] [pxb] IIC T4 Gb

Ex tb [pxb] [ib] IIIC T135°C Db

Ta = -20°C to +55°C

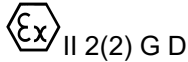
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Prestart Ventilation Models:

PP1214.PV.3.1 and PP1214.PV.4.1



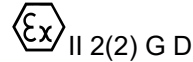
Ex db eb mb [ib] IIC T4 Gb

Ex tb [ib] IIIC T135°C Db

Ta = -40°C to +55°C

Prestart Ventilation Models:

PP1214.PV.3.2, PP1214.PV.4.2 and PP1214.PV.5



Ex db eb [ib] IIC T4 Gb

Ex tb [ib] IIIC T135°C Db

Ta = -20°C to +55°C

11 Description

The Purge Controller is comprised of two separate assemblies, the inlet unit and outlet unit.

The inlet unit is comprised of a flameproof enclosure, an intrinsically safe pressure sensor, two increased safety enclosures, regulator, filter, proportional solenoid valve and purge solenoid valve (if supplied as a pre-start purge controller the proportional solenoid valve is removed as no leakage compensation is required).

The flameproof enclosure is used to house the microcontroller and intrinsically safe interface. It has a window through which an LCD is visible and this shows status information such as purging time and estimated leakage compensation air flow.

One increased safety enclosure houses the switch and indicators (control station) whilst the second enclosure is used for field connections and connections to the outlet unit.

The outlet unit is comprised of an actuator or solenoid valve (depending on model number), intrinsically safe pressure sensor, safety valve, particle barrier and an increased safety enclosure.

All parts are mounted on a stainless steel frame and the inlet unit has a protective stainless steel cover with cut-outs in order to access the control station.

The outlet unit has a stainless steel cover sealed to the frame which houses the particle barrier.

In addition to the indicators, dry electrical outputs are provided to indicate purge status and provide a facility to de-energise the purged equipment should a purge failure be detected.

Remote operation is achievable when connecting dry contacts to the appropriate field connections.

The model numbers for purge control are constructed as follows:

PP1214.y.z

y = inlet unit version (1 to 4)

z = outlet unit version (1 or 2)

The model numbers for pre-start purge control are constructed as follows:

PP1214.PV.a.z

PP1214.PV.5

a = inlet unit version (3 or 4)



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Variation 1

This variation introduces the following modifications:

1. Extension of ambient temperature range to -20/-40°C to +55°C
2. Changes to mechanical arrangement
3. Introduction of alternative outlet solenoid valve
4. Amendment to markings

12 Certificate history and evaluation reports

Issue	Date	Associated reports	Notes
0	20 May 2016	R382A/00	Report for the issue of the prime certificate
		R382B/00	Report covering intrinsic safety assessment for the prime certificate issue. Relates to R382A/00.
1	18 Apr 2018	R11518A/00	Introduction of Variation 1
		R11518B/00	Report covering assessment of the encapsulated solenoid, relating to report R11518A/00.

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.

- 13.1 Where the product incorporates certified parts or safety critical components, the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- 13.2 A dielectric strength test shall be performed on each of the increased safety enclosures at 500 V r.m.s. for at least 60 seconds, as per EN 60079-7, clause 7.1. No breakdown shall occur.
- 13.3 A functional test of the system shall be performed on each purge controller in accordance with EN 60079-2, clause 17.1.
- 13.4 The pressure regulator shall be set no higher than 3.5 bar if the Proportional Valve Type 64 is fitted, and no higher than 5.5 bar the Proportional Valve Type 64 is not fitted.
- 13.5 For purge controllers marked with a minimum ambient temperature of -40°C, the flameproof enclosure shall be subjected to the routine overpressure test of EN 60079-1:2014, Clause 16.1, at a pressure of at least 19.34 bar (1.5 x reference pressure of 12.89 bar). There shall be no permanent deformation or damage to the enclosure.
- 13.6 The PPI solenoid P479-057 shall undergo a routine visual inspection in accordance with EN 60079-18:2015, Clause 9.1. There shall be no cracks in the compound, exposure of parts, flaking, shrinkage, swelling, decomposition, failure of adhesion or softening.



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- 13.7 The PPI solenoid P479-057 shall undergo a routine dielectric strength test between the electrical connections and the metallic enclosure in accordance with EN 60079-18:2015, Clause 9.2. A test voltage of 500Vrms or 700Vdc shall be applied for at least 1 second. Alternatively, a test voltage of 600Vrms or 840Vdc shall be applied for at least 100 ms. There shall be no breakdown or flashover.

14 Special Conditions for Safe Use (Conditions of Certification)

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

- 14.1 The purge controller has the ability to vary the purge time depending on the flow rate of air through the outlet unit. If this facility is used, the equipment to be purged shall be approved with this facility taken into account.
- 14.2 The installer/user shall ensure that the purge controller is installed in accordance with the equipment certificate that covers the combination of the pressurised enclosure and purge controller.
- 14.3 The values of the safety parameters shall be set in accordance with the equipment certificate that covers the combination of the pressurised enclosure and purge controller.
- 14.4 The purge controller shall be incorporated into equipment and the appropriate Conformity Assessment Procedures applied to the combination as defined by Directive 2014/34/EU. This certificate does not cover the combination.

Certificate Annex

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Equipment Purge Controller

Manufacturer PPI Engineering Ltd.



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

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
PQ286-150	1 of 1	A	20 May 2016	Prestart Ventilation Schematic (PP1214.PV.3.2) (SCHISHEK)
PQ286-151	1 of 1	A	20 May 2016	Prestart Ventilation Schematic (PP1214.PV.4.2) (SCHISHEK)
PQ286-152	1 of 1	A	20 May 2016	Prestart Ventilation Schematic (PP1214.PV.5) (SCHISHEK)
PQ286-157	1 of 1	B	20 May 2016	P&P Schematic (PP1214.1.2) (SCHISHEK)
PQ286-158	1 of 1	B	20 May 2016	P&P Schematic (PP1214.2.2) (SCHISHEK)
PQ286-159	1 of 1	A	20 May 2016	P&P Schematic (PP1214.3.2) (SCHISHEK)
PQ286-160	1 of 1	A	20 May 2016	P&P Schematic (PP1214.4.2) (SCHISHEK)
PB286-140	1 of 1	B	20 May 2016	Prestart Ventilation inlet unit Assembly All models:- PP1214.PV1.1 PP1214.PV.2.1 PP1214.PV3.2 PP1214.PV4.2 PP1214.PV5
PH286-141	1 of 1	A	20 May 2016	Prestart Ventilation Pipework Assembly
PH286-142	1 of 1	B	20 May 2016	Prestart Ventilation inlet unit Cable Connections
PH286-166	1 of 1	B	20 May 2016	Backplate Assembly (P.V outlet unit)
PQ286-164	1 of 1	A	20 May 2016	Outlet Unit Cooler Interface Plate (PV Model all versions)
PQ286-165	1 of 1	C	20 May 2016	Back plate Gasket (P.V outlet unit)
PH286-167	1 of 1	B	20 May 2016	Purging system pre-ventilation outlet unit
PH286-163	1 of 1	A	20 May 2016	Back plate Template (P.V outlet unit)
PB286-134	1 of 1	E	20 May 2016	Top Level Assembly PP1214.1.2
PB286-135	1 of 1	E	20 May 2016	Top Level Assembly PP1214.2.2
PB286-136	1 of 1	F	20 May 2016	Top Level Assembly PP1214.3.2
PB286-137	1 of 1	F	20 May 2016	Top Level Assembly PP1214.4.2
PB286-145	1 of 1	B	20 May 2016	Top Level Assembly PP1214.PV.3.2
PB286-146	1 of 1	B	20 May 2016	Top Level Assembly PP1214.PV.4.2
PB286-147	1 of 1	B	20 May 2016	Top Level Assembly PP1214.P.5
PC286-086	1 of 1	A	20 May 2016	Ribbon cable 1
PC286-087	1 of 1	A	20 May 2016	Ribbon cable 2

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Drawing No	Sheets	Rev	Approved date	Title
PC286-088	1 of 1	A	20 May 2016	Ribbon cable 3
PC286-089	1 of 1	A	20 May 2016	Ribbon cable 4
PC286-090	1 of 1	A	20 May 2016	Ribbon cable 5
PQ286-070	1 of 1	A	20 May 2016	LCD module
PQ286-071	1 of 3	A	20 May 2016	Dry contacts schematic
PQ286-071	2 of 3	B	20 May 2016	Dry contacts nomenclature
PQ286-071	3 of 3	B	20 May 2016	Dry contacts PCB details
PQ286-074	1 of 3	A	20 May 2016	Inlet unit schematic
PQ286-074	2 of 3	B	20 May 2016	Inlet unit nomenclature
PQ286-074	3 of 3	C	20 May 2016	Inlet unit PCB details
PQ286-123	1 of 1	A	20 May 2016	Intrinsically safe PCB shield
PQ286-124	1 of 1	A	20 May 2016	Intrinsically safe PCB shield
PQ286-138	1 of 1	B	20 May 2016	PCB arrangement sectional
PB286-113	1 of 1	C	20 May 2016	Outlet box assembly motor purging system (model no. Pp14.2)
PC286-110	1 of 1	C	20 May 2016	Backplate gasket outlet box motor purging system
PC286-111	1 of 1	C	20 May 2016	Cable bracket gasket outlet box motor purge system
PH286-095	1 of 1	B	20 May 2016	Cover lid
PH286-098	1 of 1	A	20 May 2016	Back plate outlet box motor purging system (model no. Pp14.1)
PH286-105	1 of 1	A	20 May 2016	Back plate outlet box motor purging system (model no. Pp14.2)
PH286-106	1 of 1	A	20 May 2016	Outlet box pipe assembly
PH286-107	1 of 1	B	20 May 2016	Backplate assembly outlet box motor purging system (model no. Pp14.2)
PH286-108	1 of 1	B	20 May 2016	Backplate assembly outlet box motor purging system (model no. Pp14.1)
PQ286-109	1 of 1	B	20 May 2016	Purge and pressurise system cooler interface plate
PB286-099	1 of 1	A	20 May 2016	Inlet unit chassis plate template
PH286-100	1 of 1	A	20 May 2016	Inlet unit chassis plate fabrication
PB286-101	1 of 1	A	20 May 2016	Inlet unit cover box template
PH286-102	1 of 1	A	20 May 2016	Inlet unit cover box fabrication
PC286-103	1 of 1	A	20 May 2016	Inlet unit pipe support bracket template

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Drawing No	Sheets	Rev	Approved date	Title
PC286-117	1 of 1	A	20 May 2016	Control station support boss
PQ286-104	1 of 1	A	20 May 2016	Inlet box pipe bracket
PH286-114	1 of 1	D	20 May 2016	Inlet unit piping arrangement (all versions)
PH286-115	1 of 1	C	20 May 2016	Inlet unit cable connections
PB286-116	1 of 1	C	20 May 2016	Purging System Inlet Unit Assembly All Models: PP12.1 PP12.2 PP12.3 PP12.4
PQ286-118	1 of 1	B	20 May 2016	Purging System Inlet Unit Mounting Arrangement
PC286-119	1 of 1	A	20 May 2016	PCB enclosure support boss
PB286-122	1 of 1	A	20 May 2016	CZ0240/3 control panel layout
PC480-048	1 of 1	C	20 May 2016	Purging system label – template
PH286-168	1 of 1	A	20 May 2016	Purging system logic functionality
PQ286-162	1 of 1	B	20 May 2016	Funnel purging system exhaust outlet
PH286-182	1 of 1	B	20 May 2016	Inlet unit cable connections
PC286-125	1 of 1	B	20 May 2016	Zener barrier circuit
PC286-126	1 of 1	B	20 May 2016	Zener barrier circuit nomenclature
PC286-127	1 of 1	B	20 May 2016	Top copper
PC286-128	1 of 1	B	20 May 2016	Bottom copper
PC286-129	1 of 1	C	20 May 2016	Top silk
PC286-139	1 of 1	A	20 May 2016	Intrinsically safe IP20 terminal cover
PQ286-148	1 of 1	A	20 May 2016	Prestart Ventilation Schematic (PP1214.PV.1.1) (GRANTA)
PQ286-149	1 of 1	A	20 May 2016	Prestart Ventilation Schematic (PP1214.PV.2.1) (GRANTA)
PQ286-153	1 of 1	B	20 May 2016	P&P Schematic (PP1214.1.1) (GRANTA)
PQ286-154	1 of 1	B	20 May 2016	P&P Schematic (PP1214.2.1) (GRANTA)
PQ286-155	1 of 1	A	20 May 2016	P&P Schematic (PP1214.3.1) (GRANTA)
PQ286-156	1 of 1	A	20 May 2016	P&P Schematic (PP1214.4.1)(GRANTA)
PB286-144	1 of 1	B	20 May 2016	Top Level Assembly PP1214.PV.2.1
PB286-130	1 of 1	C	20 May 2016	Top Level Assembly PP1214.1.1
PB286-131	1 of 1	C	20 May 2016	Top Level Assembly PP1214.2.1
PB286-132	1 of 1	D	20 May 2016	Top Level Assembly PP1214.3.1

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Drawing No	Sheets	Rev	Approved date	Title
PB286-133	1 of 1	D	20 May 2016	Top Level Assembly PP1214.4.1
PB286-143	1 of 1	B	20 May 2016	Top Level Assembly PP1214.PV.1.1
PB286-112	1 of 1	E	20 May 2016	OUTLET BOX ASSEMBLY MOTOR PURGING SYSTEM (MODEL No. PP14.1)

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This drawing list supersedes the drawing list from the previous issue.

Drawing No	Sheets	Rev	Approved date	Title
P286-200	1 of 1	B	18 Apr 2018	Purge & Pressurisation Inlet Unit, Manual Leakage & Local Control (PP1214.2.1)
P286-201	1 of 1	B	18 Apr 2018	Purge & Pressurisation Inlet Unit, Manual Leakage & Remote Control (PP1214.1.1)
P286-202	1 of 1	B	18 Apr 2018	Purge & Pressurisation Inlet Unit, Automatic Leakage & Remote Control (PP1214.3.1)
P286-203	1 of 1	B	18 Apr 2018	Purge & Pressurisation Inlet Unit, Automatic Leakage & Local Control (PP1214.4.1)
P286-204	1 of 1	A	18 Apr 2018	Purge & Pressurise Outlet Unit General Arrangement (PP14)
P286-205	1 of 1	A	18 Apr 2018	Prestart ventilation schematic (PP1214.PV.3.1)
P286-206	1 of 1	A	18 Apr 2018	Prestart ventilation schematic (PP1214.PV.4.1)
P286-208	1 of 1	A	18 Apr 2018	P&P schematic (PP1214.1.1)
P286-209	1 of 1	A	18 Apr 2018	P&P schematic (PP1214.2.1)
P286-210	1 of 1	B	18 Apr 2018	P&P schematic (PP1214.3.1)
P286-211	1 of 1	B	18 Apr 2018	P&P schematic (PP1214.4.1)
P286-212	1 of 1	B	18 Apr 2018	Inlet Unit Prestart Ventilation, Local Control (PP1214.PV.4.1)
P286-213	1 of 1	B	18 Apr 2018	Inlet Unit Prestart Ventilation, Remote Control (PP1214.PV.3.1)
P286-214	1 of 3	A	18 Apr 2018	Dry contacts schematic
P286-214	2 of 3	A	18 Apr 2018	Dry contacts nomenclature
P286-214	3 of 3	A	18 Apr 2018	Dry contacts PCB Details
P286-215	1 of 3	A	18 Apr 2018	Inlet unit schematic
P286-215	2 of 3	B	18 Apr 2018	Inlet unit nomenclature

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Drawing No	Sheets	Rev	Approved date	Title
P286-215	3 of 3	B	18 Apr 2018	Inlet unit PCB Details
P286-216	1 of 1	A	18 Apr 2018	Zener barrier circuit nomenclature
P286-217	1 of 1	C	18 Apr 2018	Purging system name plate template
P286-218	1 of 1	A	18 Apr 2018	Outlet Unit Cover Box Template
P286-219	1 of 1	A	18 Apr 2018	Outlet Unit Chassis Plate Template
P286-220	1 of 1	A	18 Apr 2018	Inlet Unit Chassis Plate Template
P286-221	1 of 1	A	18 Apr 2018	Inlet Unit Cover Box Template
P479-057	1 of 1	E	18 Apr 2018	Outlet Solenoid
Outlet Solenoid – Parts List	1 of 1	E	18 Apr 2018	Outlet Solenoid – Parts List
PQ286-152	1 of 1	B	18 Apr 2018	Prestart Ventilation Schematic (PP1214.PV.5)
PQ286-158	1 of 1	C	18 Apr 2018	P&P Schematic (PP1214.2.2) (SCHISHEK)
PH286-105	1 of 1	B	18 Apr 2018	Back Plate Outlet Box Motor Purging System (Model No. PP14.2)
PB286-099	1 of 1	B	18 Apr 2018	Inlet Unit Chassis Plate Template
PB286-116	1 of 1	D	18 Apr 2018	Purging System Inlet Unit Assembly All Models
PC286-128	1 of 1	C	18 Apr 2018	Bottom Copper
PB286-112	1 of 1	E	18 Apr 2018	Outlet Box Assembly Motor Purging System (Model No. PP14.1)
PC480-048	1 of 1	D	18 Apr 2018	Purging System Name Plate
PB286-101	1 of 1	A	18 Apr 2018	Inlet unit cover box template
PB286-113	1 of 1	C	18 Apr 2018	Outlet box assembly motor purging system (model no. Pp14.2)
PB286-122	1 of 1	A	18 Apr 2018	CZ0240/3 control panel layout
PB286-140	1 of 1	B	18 Apr 2018	Prestart Ventilation inlet unit Assembly All models:- PP1214.PV1.1, PP1214.PV.2.1, PP1214.PV3.2, PP1214.PV4.2, PP1214.PV5
PH286-095	1 of 1	B	18 Apr 2018	Cover lid
PH286-168	1 of 1	A	18 Apr 2018	Purging system logic functionality
PQ286-071	1 of 3	A	18 Apr 2018	Dry contacts schematic
PQ286-071	2 of 3	B	18 Apr 2018	Dry contacts nomenclature
PQ286-071	3 of 3	B	18 Apr 2018	Dry contacts PCB details
PQ286-074	1 of 3	A	18 Apr 2018	Inlet unit schematic
PQ286-074	2 of 3	B	18 Apr 2018	Inlet unit nomenclature

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Drawing No	Sheets	Rev	Approved date	Title
PQ286-074	3 of 3	C	18 Apr 2018	Inlet unit PCB details
PQ286-123	1 of 1	A	18 Apr 2018	Intrinsically safe PCB shield
PQ286-124	1 of 1	A	18 Apr 2018	Intrinsically safe PCB shield
PQ286-138	1 of 1	B	18 Apr 2018	PCB arrangement sectional
PQ286-150	1 of 1	A	18 Apr 2018	Prestart Ventilation Schematic (PP1214.PV.3.2) (SCHISHEK)
PQ286-151	1 of 1	A	18 Apr 2018	Prestart Ventilation Schematic (PP1214.PV.4.2) (SCHISHEK)
PQ286-157	1 of 1	B	18 Apr 2018	P&P Schematic (PP1214.1.2) (SCHISHEK)
PQ286-159	1 of 1	A	18 Apr 2018	P&P Schematic (PP1214.3.2) (SCHISHEK)
PQ286-160	1 of 1	A	18 Apr 2018	P&P Schematic (PP1214.4.2) (SCHISHEK)
PQ286-162	1 of 1	B	18 Apr 2018	Funnel purging system exhaust outlet
PQ286-163	1 of 1	A	18 Apr 2018	Back plate Template (P.V outlet unit)