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Schema di certificazione

CESI-ATEX

CERTIFICATE

[1] SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE

[2] **Category 3 Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

[3] Supplementary Type Examination Certificate number:

CESI 17 ATEX 013X /02

[4] Product: **Low voltage switchgear and control-gear assembly PSC2.. series**

[5] Manufacturer: **Pepperl+Fuchs SE**

[6] Address: **Lilienthalstraße 200, 68307 Mannheim (Germany)**

[7] This supplementary certificate extends Type Examination Certificate **CESI 17 ATEX 013X**, to apply to Product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] CESI certifies that this Product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of category 3 equipment intended for use in potentially explosive atmospheres given in Annex II to the European Union Directive 2014/34/EU of the European Parliament and Council of 26 February 2014.

The examination and test results are recorded in confidential report n. **EX-C3015249**.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50495:2010 **EN IEC 60079-0:2018** **EN 60079-1:2014** **EN 60079-5:2015**
EN IEC 60079-7:2015/A1:2018 **EN 60079-11:2012** **EN 60079-15:2010**
EN 60079-18:2017 **EN 60079-28:2015** **EN 60079-31:2014**
EN ISO 80079-36:2016 **EN ISO 80079-37:2016**

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the Product is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified Product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the Product shall include the following:

II 3G **Ex ec IIC** *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G **Ex nA IIC** *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3D **Ex tc IIIC** *or* **IIIB** *or* **IIIA T80°C** *or* **T95°C** *or* **T120°C Dc**

Date 26/02/2024 - Translation issued the 26/02/2024

Prepared	**Verified**	**Approved**
Adrián Lucas Vagni	Alessandro Fedato	Roberto Piccin

[13] # Schedule

[14] **SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE n. CESI 17 ATEX 013X /02**

[15] **Description of the variation**

Variation 2.1: Updating the manufacturing name from **Pepperl+Fuchs GmbH** to **Pepperl+Fuchs SE**
Variation 2.2: Updating the referenced standards
Variation 2.3: Introduction of the SR range of enclosures as a replacement for FXL. Introduction of the GR range of enclosures as a replacement for GL
Variation 2.4: Introduction of various combinations of heaters, coolers and thermostats to guarantee min/max Tamb inside the enclosure
Variation 2.5: Updating, reformatting and combining the list of separated certified devices
Unchanged other constructional characteristics and usage parameters (electrical, environmental, etc.) of Low voltage switchgear and control-gear assembly PSC2.. series.

Description of the equipment

The **PSC2..** is a family of general-purpose switchgear and controlgear assembly commonly called Industrial Control Panel (power distribution centers, control panel, process automation panels, motor control stations, indicating panel including HMI, etc.) made starting from empty enclosure in different sizes, certificate as Ex eb / Ex tb Component (made of polyester or stainless steel) and terminal blocks which are either “Ex nA” or “Ex ec” or “Ex tc” certified.

This equipment consists of assemblies (combination) of one or more power circuit devices such as motor controllers, overload relays, fused disconnect switches and circuit breakers, or control circuit devices such as pushbuttons, pilot lights, selector switches, timers and control relays, or a combination of power and control circuit devices, electronic process equipment (barriers, transmitters, Ethernet converters, signal conditioner and Wireless or Wi-Fi communication equipment) with associated wiring and terminals, heathers and draining valve. Intrinsically safe circuits and associated apparatus suitable to be used in Zone 2 as “nA” are also included in combination. Equipment with RF ignition source does not exceed the 2W for Group IIC in normal function, and 6W for Group III.
These devices are mounted on, or contained within, an enclosure or are mounted on a sub-panel as indirect entry to an explosion proof enclosure or multiple enclosure in a form of a complex panel board.
The main enclosure can house also Ex devices with type of protection Ex db IIC together with other Ex Equipment and Components with type of protection for Zone 1/21 as they have a higher level of protection even if used for EPL Gc / Dc. All the terminals and devices housed have a separate Ex Equipment or Ex Component certificate and the relevant Instructions and Specific Conditions of Use or Schedule of Limitations are applied to select and install them (use) in the enclosure assembled.
The Type series, depend mainly on the Empty Enclosure code as follows:
• GR series (in anti-static glass fiber reinforced polyester) subject of Ex Component certificate CML 17 ATEX 3084U (Ts -60°C to +85°C), and
• SR series (in stainless steel) subject of Ex Component certificate CML 20 ATEX 3118U (Ts -60°C to +120°C).
In the Manufacturer Documents are listed all the devices (equipment/components) having an separate ATEX certificate which can compose these **PSC2..** Equipment assemblies. There are two main situations:
• single device is certificated in accordance with the last edition of Standards;
• at least one applicable Standard is out of date, but the last edition of the Standard does not impact with major technical changes from the old edition of the Standard.

Model identification

PSC2.①②.③-Y④
① Product family (Zone 2/22 Low voltage switchgear and control-gear assembly)
② Application type (e.g. CP as control panel, DB as distribution board)
③ Enclosure type (e.g. SR stands for enclosure SR approved Ex e)
④ Unique number #PN (e.g. Y264244 stands for unique article number)

[13] # Schedule

[14] **SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE n. CESI 17 ATEX 013X /02**

Marking options

The following marking codes are listed below as possible non-exhaustive options:

II 3G Ex ec IIC *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex nA IIC *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex ec ia *or* **ib IIC** *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex ec db IIC *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex nA db IIC *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex nA nC IIC *or* **IIB** *or* **IIA T6** *or* **T5** *or* **T4 Gc**

II 3G Ex ec db mb IIC T4 Gc

II 3D Ex tc IIIC *or* **IIIB** *or* **IIIA T80°C** *or* **T95°C** *or* **T120°C Dc**

II 3D Ex tc [ia Da] IIIC *or* **IIIB** *or* **IIIA T80°C** *or* **T95°C** *or* **T120°C Dc**

As well as other combinations of the type of protection symbols and levels of protection based on the relevant marking of devices certificate actually selected in combination are available, following the requirement of EN IEC 60079-0. Optical protected equipment (splitter, converter, etc.) conform to EN 60079-28 can be combined as well and the type of protection « op pr » or « op is » shall be written in the combination accordingly.

Electrical characteristics

Rated voltage (typical):	660/690 Vac; 60 Vdc, 250 Vdc.
Ui/Uo or Um:	according to the relevant intrinsically safe parameters (entity) of the intrinsically safe associated apparatus following the Control Dwg. / System Document Description.
Rated current:	630 A maximum depending on the type of actual devices used and ratings.
Rated cross sections:	up 300 mm^2.

The ratings specified are maximum values. Actual values will be subject to the devices used from case to case. Depending on the system conditions, the mode of operation, the utilization category, the definitive rating which will be within the range of these limiting values and will comply with the relevant standards, will be defined.

Ambient temperature range

with Polyester enclosure:	-60 ÷ 85°C (GR series);
with Stainless steel enclosure:	-40°C ÷ +120°C (SR series with BR099 or BR962 gasket); -60°C ÷ +120°C (SR series with EMI-01-255SAB, EMI-401-255FR or FERMASIL gasket).

The temperatures indicated above correspond to the admitted temperatures of the enclosures used. The ambient temperature will be marked depending on the combination of enclosure U-certificates and the thermal design verification.
In order to allow the installation of the equipment in an area with ambient temperature below the internal devices rating, the enclosure may incorporate temperature control (heaters) and temperature monitoring (thermal switches) systems to ensure internal devices become powered within their rated ambient temperature range. In any case, the minimum ambient temperature could not be marked below the unpowered device manufacturer's specifications.

[13] # Schedule

[14] **SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE n. CESI 17 ATEX 013X /02**

Degree of Protection

The enclosure of the **PSC2..** assembly have a minimum degree of protection of IP6X according to EN 60529 and EN IEC 60079-0. The final assembled solution combination will have the IP of the lowest external device IP rate.

Warning labels

In case of internal circuits or equipment with type of Protection "i" and live maintenance is permitted by the Instructions, in accordance with EN 60079-11 within the enclosure, either a) and b):

a) the cover of the enclosure permitting access to energized non-intrinsically-safe circuits or apparatus will have a label with the following:

WARNING – DO NOT OPEN WHEN NON-INTRINSICALLY SAFE CIRCUITS ARE ENERGIZED

b) all bare live parts not protected by the type of Protection "i" will have a separate internal cover providing at least the degree of protection IP30 when the enclosure of the equipment is open. In addition, the internal cover will have a label with the following:

WARNING – DO NOT OPEN WHEN ENERGISED

The cover of the enclosure of the equipment will have a label with the following:

WARNING – NON-INTRINSICALLY SAFE CIRCUITS PROTECTED BY INTERNAL IP30 COVER

In case of the temperature under rated conditions exceeds 70 ºC at the cable or conduit entry point, or 80 ºC at the branching point of the conductors (whereby XX°C is the value determined by the equipment manufacturer):

WARNING – USE CABLE WITH OPERATING TEMPERATURE ≥ XX°C

When external non-metallic parts (including painting) of enclosures are present and don't meet the other options listed in the standard EN IEC 60079-0 clauses 7.4.2 and/or 7.4.3:

WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS

[16] **Report n. EX-C3015249**

Routine tests

The manufacturer shall carry out the dielectric test (on wired device) prescribed at clause 7.1 of EN IEC 60079-7.
The manufacturer shall carry out the Design Verifications (and document them according its own Quality Management System) necessary to ensure that the electrical equipment produced complies with the documentation annexed by the approved method of thermal verification which cover the following main conditions:
• to verify that the maximum temperature class of **PSC2..** (T6, T5 or T4) will be limited according the power loss, the thermal resistance of enclosure/equipment and the ambient temperature; however the most common temperature class according the method will be T4, based on the type of heaters; and,
• to verify that the temperature-rise limits specified for the different parts of the **PSC2..** will not exceed the service temperature and/or ambient temperature of the Equipment/Components assembled in the combination.

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[14] **SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE n. CESI 17 ATEX 013X /02**

Conditions of manufacture

The manufacturer shall carry out the design verifications (following its own documented manufacturing process and following the standard EN 61439-2) necessary to ensure that the electrical equipment produced complies with the schedule drawing by selecting devices from the approved device list document 16-1425CE-02 and using methods of thermal, mechanical and electrical verifications which cover the following main conditions:
• maintain the creepage and clearance distances;
• reduction in rating of adjacent devices shall be observed according document 16-1425CE-02;
• verify that all the Specific Conditions of Use "X" of the Ex Equipment and that all the Schedule of limitations of Ex Components are implemented according the pertinent certificate and Instructions.

In case of internal devices and circuits protection "i", manufacturer shall keep the separation distance between the enclosure and between different intrinsically safe circuits as required by EN 60079-11.

In case of internal devices with type of protection "nA" or "nC", provisions shall be made to prevent the rated voltage and current from being exceeded by transient disturbances.

In case of interlock loop (heaters and thermostats) used to guarantee the min/max ambient temperature inside the enclosure, the minimum temperature shown on the Marking Plate shall be no lower than the highest minimum storage temperature of any of the installed devices. A calculation shall be performed to ensure that the heater system fitted is sufficiently powerful to raise the internal temperature from the marked minimum ambient temperature to above the switch on temperature of the system. Therefore, the storage temperature must be known and documented. The position of the safety thermostat must be close to the device with the highest Tmin. Furthermore, the position must account for the effects of thermal mass such that the system is not switched on before all internal devices are above their certified Tmin. Additionally, the switch on temperature for the system shall be at least 5 °C above the certified Tmin of all devices.

The product covered by this certificate is an assembly which incorporate separately certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with this device and any variations introduced by their manufacturer(s). If any introduced variations to those devices affect the compliance of the product that is subject of this certificate, the manufacturer is required to have this certificate updated.

[17] **Special conditions for safe use (X)**

• The pertinent special condition for safe use "X" of the actual enclosure certificate and the actual certificate of the devices used in the combination assembled, especially the condition relevant to the heaters, anti-condensation heaters, thermal switch and HMI have to be strictly followed.
• When terminals and Equipment / Components for intrinsically safe circuits "i" are used, even if the terminals are Ex e, they are installed in such a way that the clearances and creepage distances between intrinsically safe and non-intrinsically safe circuits as set forth in EN 60079-14 and EN 60079-11 Standards are duly accounted for.
• When using more than one intrinsically safe circuit, the rules and regulations for interconnections required by EN 60079-14, EN IEC 60079-7 and EN 60079-11 Standards shall be observed.
• When the temperature under rated conditions exceeds 70 ºC at the cable or conduit entry point, or 80 ºC at the branching point of the conductors, the temperature specification of the selected cable shall be in compliance with the actual measured temperature values.
• Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

[13] # Schedule

[14] **SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE n. CESI 17 ATEX 013X /02**

[18] **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are ensured by compliance with the Harmonized Standards referred to in paragraph [9], by the manufacturer's risk assessment and by compliance with the safety instructions provided with the equipment.

[19] **Descriptive documents (prot. EX-C3015262)**

*16-1425CEA Schedule Drawing for ATEX and IECEx Approval (4 pag.)	dated	26/04/2023
*16-1425CE-00 Description for Certification Rev.A (28 pag.)	dated	26/04/2023
*16-1425CE-01 Method Rev.- (6 pag.)	dated	30/06/2016
*16-1425CE-02 Approved Preferred Device List Rev.B (2+4 pag.)	dated	26/04/2023
*16-1425CE-04 PSC Assembly general arrangement Rev.A (10 pag.)	dated	26/04/2023
*16-1425CE-09 Installation & Maintenance Manual (abstract) Rev.A (4 pag.)	dated	26/04/2023
*16-1425CE-10 Type Label Examples Rev.A (5 pag.)	dated	26/04/2023
*16-1425CE-14 Update description Rev.B (5 pag.)	dated	26/04/2023

*Note: an * is placed before the title of documents which are new or revised, annexed to this supplement.*
One copy of all documents mentioned above is kept in CESI files.

Certificate history

Issue nr	Issue Date	Summary description of variation
00	29/09/2018	First Issue of the Certificate.
01	26/03/2019	Addition of certified equipment
02	26/02/2024	Updating the Manufacturer name from **Pepperl+Fuchs GmbH** to **Pepperl+Fuchs SE**. Updating the referenced standards. Introduction of the SR range of enclosures as a replacement for FXL. Introduction of the GR range of enclosures as a replacement for GL. Introduction of various combinations of heaters, coolers and thermostats to guarantee min/max Tamb inside the enclosure. Updating, reformatting and combining the list of certified devices.