

# Newsletter

## January, 2022



# ICR



# Hot Issue

1. ISO 13485:2016 IAF MLA member registration
  2. ICR Polska is the first in Europe to obtain the status of a Notified Body regarding Drones
  3. ICR Polska Completed Registration of IECEx ExCB Equipment
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# ISO 13485:2016 IAF MLA member registration

- The list of IAF MLA members was updated on October 14, 2021.
- Notice that **KAB\_ISO 13485:2016** has been registered as an **IAF MLA member**.
- Therefore, **ICR will issue the IAF mark on the certificates** of KAB\_ISO 13485:2016 certified customers.

Accreditation Body | IAF MLA Signatory

**KAB ( Korea Accreditation Board )**  
Code of Conduct Adopted: 10 Aug 2004 | <http://www.kab.or.kr>  
Korea, Republic of

Standard	Effective Date
4 ISO/IEC 27006	14 Oct 2021
5 ISO/IEC 27001 (ISMS)	14 Oct 2021
4	
5 ISO 13485 (MDMS)	14 Oct 2021

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# ICR Polska is the first in Europe to obtain the status of a Notified Body regarding Drones



- **ICR Polska** is the first in Europe to obtain the status of a **Notified Body** in the scope of Regulation (EU) 2019/945 regarding Unmanned Aircraft Systems (**UAS - drones**).
- **ICR Polska (European Notified Body No.2703)** has been **approved** as **Notified Body** to provide both test and EU-Type Examination service by **Polish Centre for Accreditation (PCA)** as **capable of conducting conformity assessment** of **Unmanned Aircraft Systems(UAS – drones)** according to the Regulation (EU) 2019/945 with 2020/1058 amendment.
- **ICR Korea** is a **comprehensive testing laboratory** and as a designated testing laboratory by ICR Polska, we **provide one-stop drone certification service**.

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# ICR Polska is the first in Europe to obtain the status of a Notified Body regarding Drones



■ In accordance with Regulations (EU) 2019/945 and 2019/947, Unmanned Aircraft Systems (UAS) are.

## ■ **Open category**

The open category addresses the lower-risk civil drone operations in, where safety is ensured provided the civil drone operator complies with the relevant requirements for its intended operation. This category is subdivided into three subcategories, namely A1, A2 and A3, depending on the operating conditions. Operational risks in the 'open' category are considered low and, therefore, no operational authorization is required before starting a flight.

## ■ **Specific category**

The specific category covers riskier civil drone operations, where safety is ensured by the drone operator by obtaining an operational authorization from the national competent authority before starting the operation.

To obtain the operational authorization, the drone operator is required to conduct a risk assessment, which will determine the requirements necessary for the safe operation of the civil drone(s). In this category, Regulation (EU) 2019/945 together with 2020/1058 specifies two classes, C5 and C6.

# ICR Polska is the first in Europe to obtain the status of a Notified Body regarding Drones



## ■ Certified category

In the certified category, the safety risk is considerably high; therefore, the certification of the drone operator and its drone, as well as the licensing of the remote pilot(s), is always required to ensure safety. The requirements of Regulation (EU) 2019/945 do not apply to aircraft of the certified category.



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# ICR Polska Completed Registration of IECEX ExCB Equipment




- **ICR Polska** has successfully completed the **IECEX** assessment process and final registration of ExCB according to IECEX Scheme.
- It is now possible to issue certificates for ATEX as well as **IECEX** products, and we plan to provide more service.

OD001 Online

Country POLAND	Type ExCB Equipment	Identifier ICR	Scope Standard Search by scope...
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Search

Organisation	Associated Bodies	Scope
<p>POLAND ICR Polska Sp. Z o.o. ICR  Type: ExCB Equipment Contact: Mr. Jaroslaw Zadrozny Plac Przymierza, 6 03-944 Warsaw Poland POLAND ✉ Email</p>	<p><b>Associated ExTLs:</b> ExVÁ Testing Station for Explosion Proof Equipment Company Limited (BKI) - HUNGARY</p>	<p>IEC 60079-0: Part 0: Equipment - General requirements IEC 60079-1: Part 1: Equipment protection by flameproof enclosures 'd' IEC 60079-11: Part 11: Equipment protection by intrinsic safety 'i' IEC 60079-18: Part 18: Equipment protection by encapsulation "m" IEC 60079-31: Part 31: Equipment dust ignition protection by enclosure 't'</p>



- Application structure and Equipment
  - ▶ Flameproof enclosure "d" , Dust ignition protection by enclosure "t"  
(Motor, Enclosure, Luminaires, Solenoid valve)
  - ▶ Intrinsic safety "i"(transmitter, Sensor, Mobile device)
  - ▶ Encapsulation "m" (Motor, Solenoid valve, Power supply device)

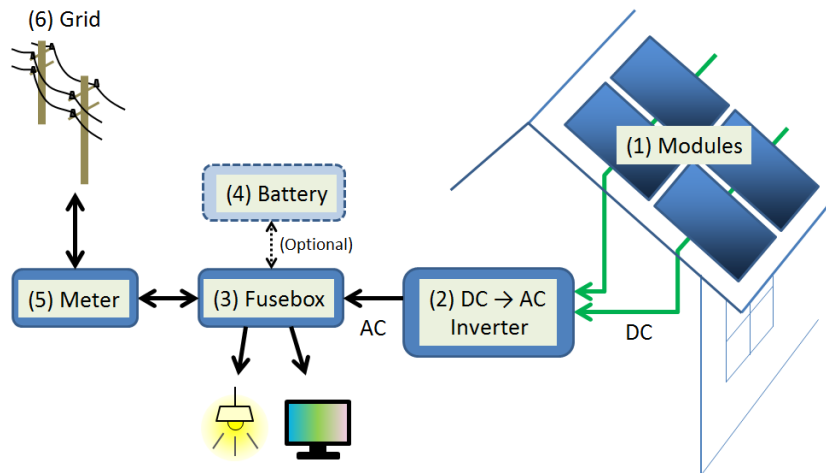
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# Electromagnetic test guide for PV inverter



- PV inverter is a device that converts DC power generated through solar panels into AC power.
- IEEE Std 1547.1TM-2020 must be satisfied to verify the Conformance of equipment that interconnects Distributed Energy Resources (DERS) and Electric Power Systems (EPS) like PV inverters.



- ICR can evaluate the electromagnetic test requirements of '5.8.1 Protection from Electromagnetic Interference (EMI) test  
5.8.2 Surge with Stand Performance test'.



# Electromagnetic test guide for PV inverter



- Hardware (e.g. AC simulator, DC simulator) can be used to replace Distributed Energy Resources (DERS) and Electric Power Systems (EPS), which are actually used during electromagnetic testing.
- **5.8.1 Protection from Electromagnetic Interference (EMI) test** is intended to verify the protection function of the test piece against external EMI, and the EMI influence should not cause any change or malfunction of the function.

The four sides of the equipment enclosure are evaluated by applying the intensity of the signal with an intensity of 20 Vrms/m before modulation in a vertical/horizontal direction.

- **5.8.2 Surge withstand performance test** is intended to verify the protection function for bibliographic resistance of the test piece, and the influence of the surge should not cause any change or malfunction of the function.

# Electromagnetic test guide for PV inverter



The test procedure for external communication, signals, and control circuits of the test product follows IEEE Std C37.90.1, and the actual communication lines used for operation are tested (excluding signal lines for installation and repair).

The test procedure for the EUT power circuit of the test product follows IEEE Std C62.41.2 and IEEE Std C62.45, and the test item and level are determined depending on where the test product is installed.

- In general, the test waveform of the Surge withstand performance test of products installed indoors is as follows.

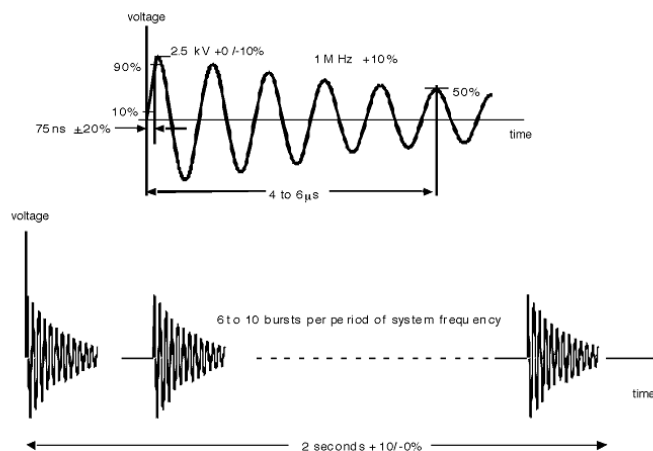
# Electromagnetic test guide for PV inverter



## ▶ Testing of external communication, signals, and control circuits.

### ① Oscillatory waveform

Waveform envelope	: A damped oscillatory wave, with the envelope decaying to 50% of peak value between the third and sixth periods.
Frequency	: 1 MHz
Rise time of first peak	: 75 ns
Test voltage magnitude	: 2.5 kV
Repetition rate	: 6–10 bursts per period of the power system frequency
Duration	: 2 seconds
Source impedance	: 200 $\Omega$



[Figure 1 - Oscillatory test waveform]

Source: IEEE Std C37.90.1-2002

# Electromagnetic test guide for PV inverter



## ► Testing of external communication, signals, and control circuits.

### ② Fast transient test

Waveform polarity : Positive and negative

Rise time: : 5 ns (tolerance  $\pm 30\%$ )

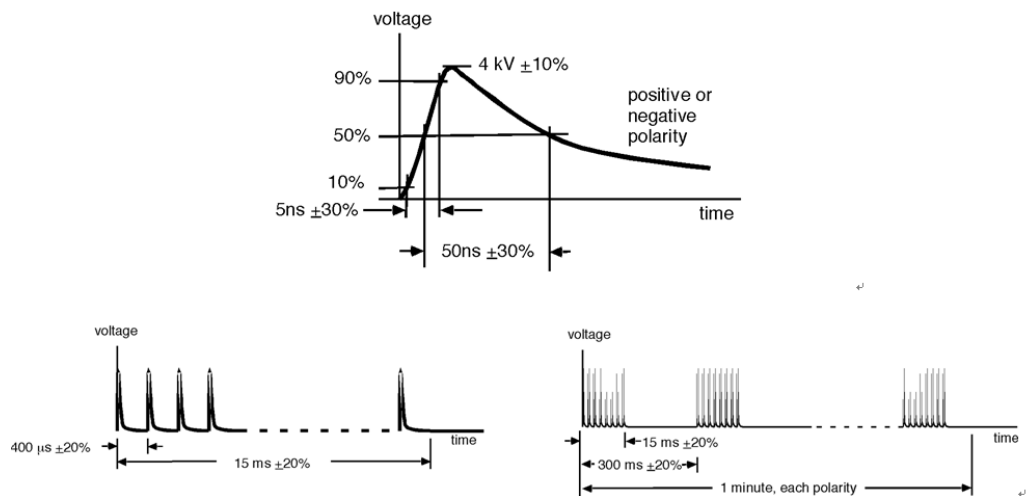
Magnitude : 4 kV crest value (tolerance  $\pm 10\%$ )

Pulse duration : 50 ns (tolerance  $\pm 30\%$ ) (50% value)

Repetition rate : The waveform consists of bursts of pulses that repeat periodically.

Duration : Not less than 1 minute, each polarity

Source impedance : 50  $\Omega$  (tolerance  $\pm 20\%$ ) between 1 MHz and 100 MHz



[Figure 2 - Fast transient burst waveform]

Source: IEEE Std C37.90.1-2002

# Electromagnetic test guide for PV inverter



## ► Testing of the power circuit.

### ① The 100 kHz Ring Wave test

Test level :  $\pm 6$  kV

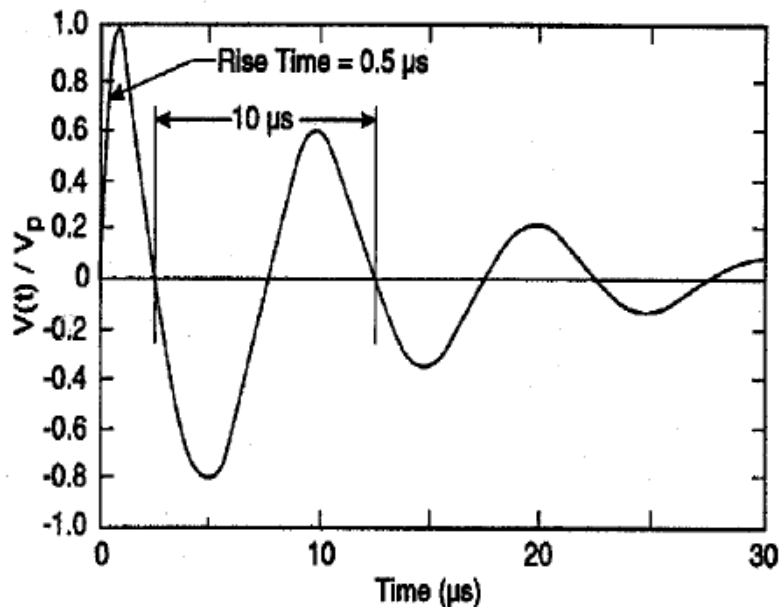
Rise time :  $0.5 \mu\text{s}$

Ringing frequency : 100 kHz

Number of times : 5 times

Repetition rate : 60 s

Impedance : 30 or  $12 \Omega$



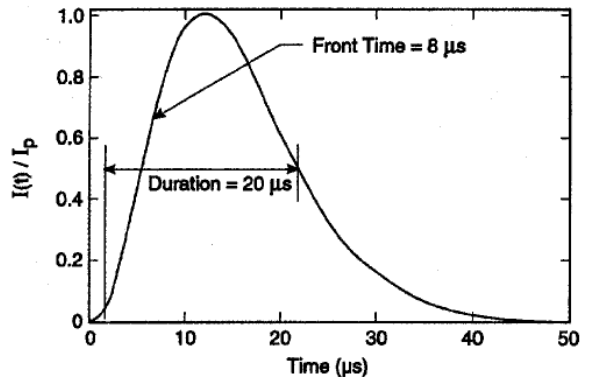
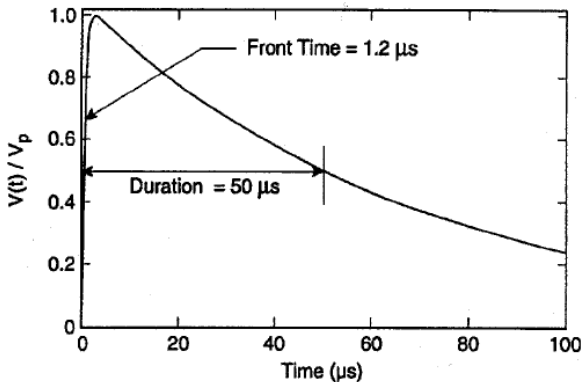
# Electromagnetic test guide for PV inverter



## ▶ Testing of the power circuit.

### ② The Combination Wave test

Test level	:	$\pm 6$ kV
Front time	:	$1.2 \mu\text{s}$ (Open-circuit voltage), $8 \mu\text{s}$ (Short-circuit current)
Duration	:	$50 \mu\text{s}$ (Open-circuit voltage), $20 \mu\text{s}$ (Short-circuit current)
Phase angle	:	$0^\circ, 90^\circ, 180^\circ, 270^\circ$
Number of time s	:	5 times
Repetition rate	:	30 s
Impedance	:	12 or $2 \Omega$



[Combination Waveform] Left :Open-circuit voltage, Right : Short-circuit current

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# 5G mobile communication conduction test method revision enforcement



## ▣ 1. Relation

- ▶ a. **5G NR mobile communication conduction test method (KS X 3270)**
- ▶ b. **Technical standards for wireless equipment for telecommunication business** (National Radio Research Agency Notice No. 2021-15, 2021.10.12.)

## ▣ 2. In order to comply with international standards (3GPP, etc.), we would like to first implement the revision of the national standard for 5G conduction test method as follows.

- ▶ a. **Main contents:** Reduced the test period by reducing the number of sweeps (100 → 10) of the spectrum analyzer, and the recently revised international standard (3GPP) is reflected in the test method.
- ▶ b. **Enforcement period:** From the date of document enforcement to completion of national standard revision

※ Implementation: Technical Standards Division - 1952 (2021.11.18)

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ICRO-31/R20161125 본 문서는 법률 제 14088호 저작권법의 보호대상이며, ICR의 지적 자산으로 불법 편집 및 복사를 금합니다.

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*May this Christmas and New Year bring you joy and peace.  
We wish you new challenges, new horizons and new successes,  
in business as well as your private lives.*

