



INFOMIPS MEDICAL ISOLATION PANELS

COMPANY PROFILE

Inform Electronic, one of the European leading power solution specialist, is established in 1980 with the aim of designing and building industrial electronic systems. Soon after, it diversified into the production, and marketing of standard professional electronic equipment, and special projects.

The company always combines its experience with its innovative identity and is recognized by its worldwide technology leading character. Right business understanding of Inform makes the company one of the most wanted brands in the world with its exceptional growth ratio. The Company has 31,000 m² closed production area, committed to the manufacturing of electrical products and electronic equipments.

Analysing infrastructural conditions, and customer needs, the company decided to provide complete solutions. Inform product range varies from Uninterruptible Power Supply (UPS) Systems, Voltage Regulators, to DC Power Supply, Telecom Equipments, Battery chargers, Inverters, 19" rack cabinets and other electrical products and electronic equipments.

Since its foundation, INFORM ELECTRONIC has based its strategy on below main policies:

- Quality understanding for its products and services,
- Tailored solutions to specific customer needs,
- Customer satisfaction and happiness,
- After sales service and support
- Continuous improvement for operational excellence and advanced technology

Inform is an official ISO certified company. The company has also Gost, Soncap, and CE certifications. All the Inform products are designed and produced with the worldwide quality understanding, and ISO rules.

Inform was acquired by Legrand Group in 2010.

Legrand is global specialist in electrical and digital building infrastructures. The Group has direct presence in more than 70 countries and number of employee is more than 31.000 people.

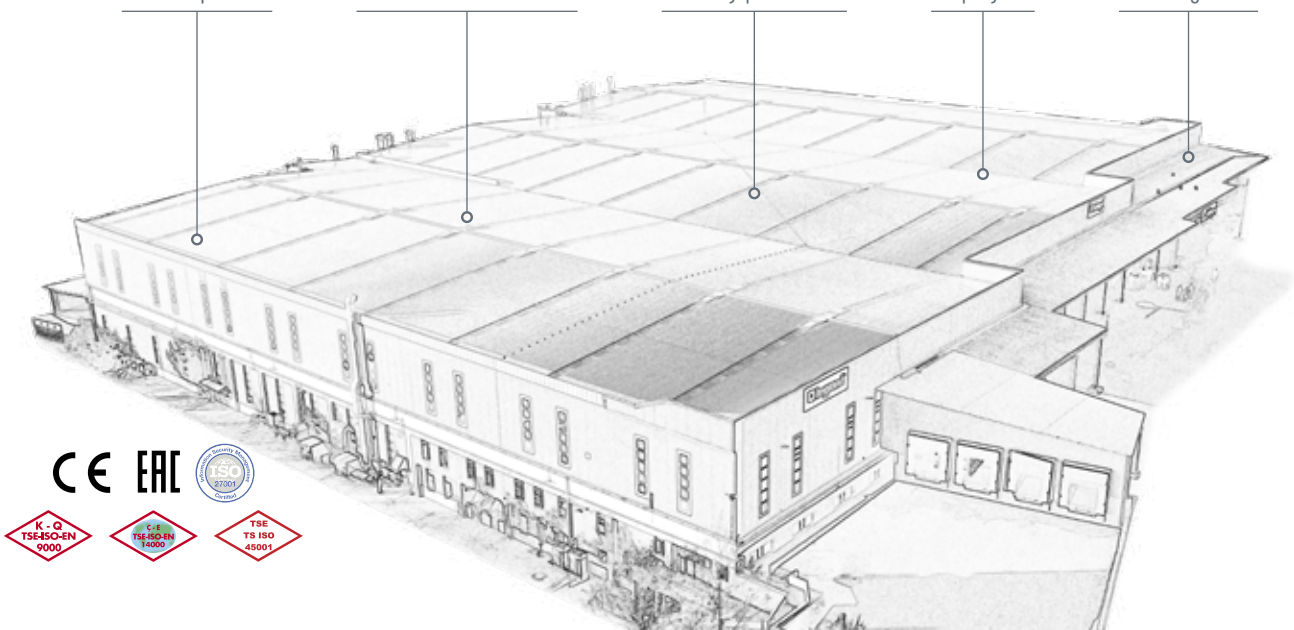
41+
Years experience

28.000+
Manufacture base (m²)

10.000+
Monthly production

485+
Employees

18+
R&D Engineers



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ISOLATION POWER SYSTEMS



According to the IEC 60364-7-710 standard, the rules to be applied in the medical locations are described. The use of isolation power panels is obliged in group 2 locations.

Group 2 Locations:

- Operating Rooms
- Preparation for Operating Room and Wake-Up Rooms.
- Intensive Care Rooms
- Heart Catheterization Rooms.
- Anaesthesia Rooms.
- Premature Baby Rooms.
- Angiographic Examination Rooms.

In general, we can think of them as areas where the patient's consciousness is closed and requires intensive care. Electrical leakages that may occur in electrical installations or medical devices in these areas can lead to undetected life-threatening dangers. For this reason, in case of leakage in Group 2 locations, isolation power panels that provide uninterrupted safe energy supply should be used.

WHAT IS ELECTRICAL SHOCK?

As you know, the mains voltage consists of 220V live terminal and 0V neutral terminal. Current flows from the higher potential live end to the neutral end. Ground line is at 0V level like Neutral terminal. In other words, if the 220V live terminal somehow contacts the ground, current will start to flow through this contact. When the current flowing towards the ground happens uncontrollably, we call it Electrical Leakage. Leakage current usually occurs from metal surfaces of the loads being fed, insulation problems in the installation or when we come into direct contact with the live terminal. The last element that completes the ground circuit is usually human and the leakage current passing over us shocks us.



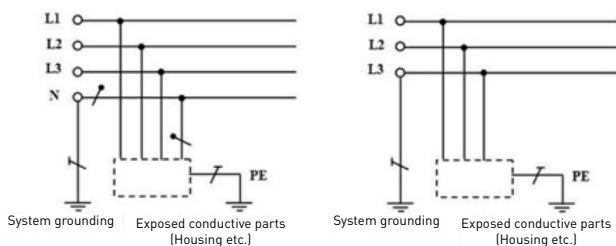
ISOLATION POWER SYSTEMS

GROUNDING METHODS

Grounding is the measures taken to prevent leakage current from occurring or to flow directly to the ground, not through a living thing. Some of the frequently used grounding methods can be listed as follows;

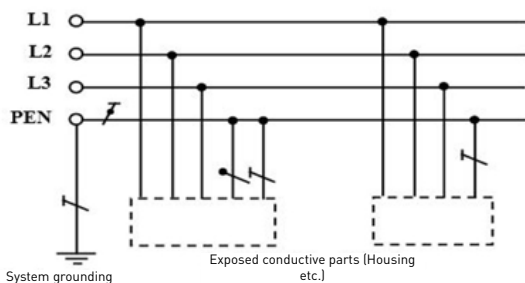
TT Systems

The power line and the conductive bodies of the



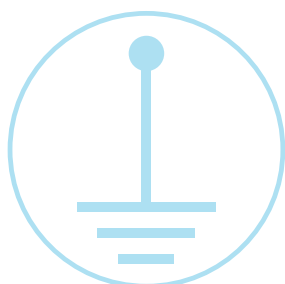
powered devices are connected directly to earth independently of each other.

TN Systems



The power line and the conductive bodies of the powered devices are connected to the ground over the same line.

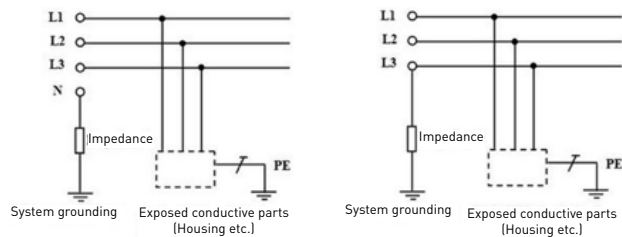
TN and TT systems are used with residual current relays. In case of residual, the residual current relay trips according to the value of the selected relay and cuts the supply completely. The loads operated cannot continue to run.



IT Systems

In the power circuit, the star point or neutral is insulated against earth or earthed over a high impedance. The conductive bodies of the devices are also grounded.

The working principle of Isolation Power Panels is



based on the IT grounding system. It isolates the input voltage from the ground with the Isolation Transformer. The transformer output now consists of two live terminals. When these ends are measured relative to the ground, approximately +110V, -110V voltages are measured. While the total potential difference still remains at 220V, when either terminal touches the ground, the current returns to the transformer following its own circuit instead of flowing to ground. In this way, leakage current is prevented while the system continues to be operated.



Since leakage current formation is prevented by isolation transformer, residual current relay should not be used before or after isolation power panels. Residual current relay can also trip without residual by being affected by transformer starting currents, line transitions and common neutral connection. It is vital that the supply of the devices in these areas is not interrupted.

ISOLATION POWER SYSTEMS

INFOMIPS ISOLATION POWER SYSTEMS WITH TRANSFER UNIT

Isolation power panels with transfer units are designed with double source inputs. The transfer unit monitors the priority selected source continuously and directs the output to the 2nd source in cases such as power cuts and voltage out of the set values. In case the priority source returns to nominal values, the output continues to be operated from the 1st source again. It is produced with 20xB16 Line as standard. Special designs can be made in line numbers and amperage values.

TECHNICAL SPECIFICATIONS

- Patient and doctor life safety
- Automatic transfer changeover system
- Transfer time under 100ms
- 10 kVA isolation power transformer
- Isolation monitoring device
- LCD screen
- 20pcs 2x16A B-Type line outputs
- 0-43A load current
- Transformer temperature value monitoring
- Load current monitoring
- Remote monitoring with local and central alarm panels
- Multi-device communication possibility
- RS485 Mod-Bus / TCP-IP Mod-Bus communication



ISOLATION POWER SYSTEMS

INFOMIPS ISOLATION POWER SYSTEMS WITH TRANSFER UNIT AND ISOLATION ERROR DETECTION SYSTEM

In addition to isolation power panels with transfer units, a line monitoring system is included. All output lines are monitored separately via torodial current transformers. Isolation leakage is detected on a line basis. Due to the 6 torodial current transformers, the panels are produced with 12, 18 and 24 lines.



TECHNICAL SPECIFICATIONS

- Patient and doctor life safety
- Automatic transfer changeover system
- Transfer time under 100ms
- 10 kVA isolation power transformer
- Isolation monitoring device
- Error detection system
- Line-based isolation leakage monitoring
- LCD screen
- 12/18/24 pcs 2x16A B type line output
- 0-43A load current
- Transformer temperature value tracking
- Load current monitoring
- Remote monitoring with local and central alarm panels
- Multi-device communication possibility
- RS485 Mod-Bus / TCP-IP Mod-Bus communication



ISOLATION POWER SYSTEMS

GTFD SERIES ISOLATION TRANSFORMER

Transformer providing the necessary isolation for
Group – 2 fields in the hospital.

Standards:

IEC 61558-2-15

IEC 60364-7-710

- The feeding location is separated from the grounding system.
- Single-phase, phase-to-phase voltage 230 VAC
- No-load current $I_0 < 3\%$
- Short circuit voltage $U_k < 3\%$



THE TECHNICAL SPECIFICATIONS

Nominal Power	10kVA
Nominal Frequency	50 ... 60 Hz
Input Voltage	230 VAC
Output Voltage Ph-N	230 VAC
Input/Output Current	44.7A / 43.4A
Current Impulse Withstand	12 In
Allowable Leakage Current	< 50 μ A
Inrush Current	< 8 In
Galvanic Isolation	Yes
Isolation Class	B
U_k %	<2.2%
Efficiency	96% >
Temperature at full load	68 °C

ISOLATION POWER SYSTEMS

ISOLATION MONITORING MODULE

It continuously monitors the isolation resistance level and gives an alarm if there is a leakage between the system and the ground. Apart from the isolation level, it constantly monitors the current drawn from the system and the transformer temperature. It can transmit all data as instant value and alarm to local and central alarm panels.

Standards:

IEC 60364-7-710

IEC 61557-8

IEC 61557-9



TECHNICAL SPECIFICATIONS

Model	INFORM IZL-IMM
Operating Voltage	230 VAC
Nominal Current	15A/20A/25A/32A/40A/50A
Supply Voltage	24VAC or 24VDC
Isolation Resistance Interval	0.1 kOHM - 1mOHM
Frequency	50/60 Hz
Temperature Interval	0-100 °C
Current Interval	0-100 A
Communication	Mod-Bus
Dimensions (mm)	144 x 72 x 115
Protection Class	IP21
Color	RAL 9003
Operating Temperature	0 °C / 50 °C
Storage Temperature	-15 °C / 70 °C

ISOLATION POWER SYSTEMS

TRANSFER MODULE

Transfer Modules are devices that control two contactors and simultaneously monitor Input-Output Voltages and Current Drawn in order to transfer the double line supply to the output without interruption. It can transmit all data as instant value and alarm to local and central alarm panels.

Standards:

IEC 60364-7-710

IEC 60364-5-53

IEC 60947-6-1



TECHNICAL SPECIFICATIONS

- 2x16 LCD screen
- Synchronous / Asynchronous transfer feature
- Source priority selection
- Automatic and manual changeover in case of resource loss
- External manual bypass
- Easy to use menu
- Current distortion level < 1%
- High Efficiency

Model	INFORM IZL-TM
Transfer Time	<60 MS
Nominal Current	15A/20A/25A/32A/40A/50A
Source Voltage	230 VAC
Efficiency	96%
Frequency	50/60 Hz
Input Protection	CLASS B
Alarm Output	2 relays output
Communication	Mod-Bus
Dimensions (mm)	144 x 72 x 115 mm
Protection Class	IP21
Color	RAL 9003
Operating Temperature	0 °C / 50 °C
Storage Temperature	-15 °C / 70 °C

ISOLATION POWER SYSTEMS

ISOLATION ERROR DETECTION MODULE

It is a system that instantly controls all of the output lines with toroidal current transformers and shows the error on a line basis when there is an isolation error.

Standards:

IEC 60364-7-710

IEC 61869-2



TECHNICAL SPECIFICATIONS

- 6 current transformer modules
- Leak current detection $>50\mu\text{A}$
- Easy addressing
- Operating status led
- Synchronous operation with Transfer module, Isolation monitoring device, Local and Central alarm system
- LED alarm indicator

MODEL	İNFORM IZL-CM6X
Operating Voltage	230 VAC
Nominal Current	15A/20A/25A/32A/40A/50A
Supply Voltage	24VAC or 24VDC
Leakage Current	$>50\mu\text{A}$ AC or DC
Frequency	50/60 Hz
Measuring Range	$25\mu\text{A}$ -5000 μA
Input Protection	Class B
Communication	Mod-Bus
Dimensions (mm)	60 x 230 x 60
Protection Class	IP21
Color	RAL 9003
Operating Temperature	0 °C / 50 °C
Operating Temperature	-15 °C / 70 °C

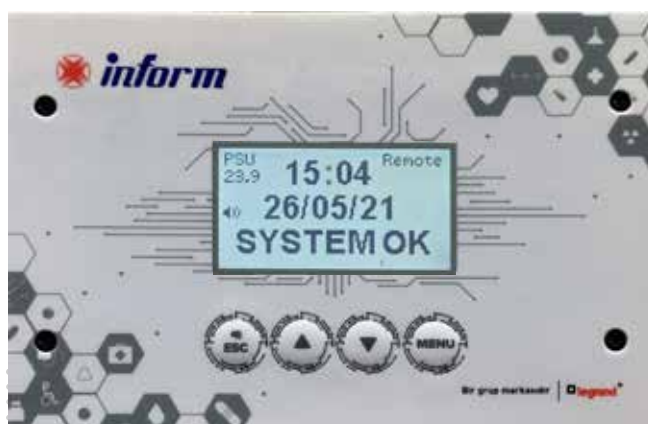
ISOLATION POWER SYSTEMS

LOCAL AND CENTRAL ALARM PANELS

Local Alarm Panels are units that display all the data and alarms of the panel by installing them in the area fed by the isolation panel. From local alarm panels; You can monitor Isolation resistance level and its alarm, Current drawn value and its alarm, Transformer temperature and its alarm, Line-based alarm information from error detection system, Line feeding information, Line1, Line2 and Output voltage information. The whole system communicates with each other via Mod-Bus. The central monitoring panel is used to display the information of all panels in the same group from a single point. It is generally located in the technical staff room.

Standards:

IEC 60364-7-710



TECHNICAL SPECIFICATIONS

- Ability to operate as a local or central alarm panel
- Monitoring up to 16 boards
- Isolation level monitoring
- Current level monitoring
- Temperature monitoring
- Source monitoring
- Line-based error monitoring
- LCD graphic display
- Audible and visual alarm
- Data export with MODBUS and IP

MODEL	INFORM IZL-LAP
Alarm Output	2pcs relay output
Supply Voltage	24VAC or 24VDC
Frequency	50/60 Hz
Input Protection	Class B
Communication	Mod-Bus or IP
Dimensions (mm)	160 x 108 x 73
Protection Class	IP21
Color	RAL 9003
Operating Temperature	0 °C / 50 °C
Storage Temperature	-15 °C / 70 °C

ISOLATION POWER SYSTEMS

21" CENTRAL MONITORING PANEL

The 21" Central Monitoring Panel provides the opportunity to monitor up to 300 panels over the Network. IT panels can be grouped and named as desired. It provides the opportunity to name up to the line outputs. It can transfer all data to the scada system over the network.

- Windows operating System
- 21" infrared touch screen
- Built-in speaker
- Possibility to communicate up to 300 panels
- Possibility to define IP address
- TCP-IP communication protocol



MODEL	INFORM 21"MAP
Screen	21" infrared touchscreen
Supply Voltage	230 VAC
Frequency	50/60 Hz
Alarm	Audible and Visual
Communication	TCP IP
Dimensions (mm)	703 x 135 x 498 (W x D x H)
Protection Class	IP21
Color	RAL 9005
Operating Temperature	0 °C / 50 °C
Storage Temperature	-15 °C / 70 °C



OPERATING ROOM CONTROL PANELS

WILDTOUCH 21" OPERATING ROOM CONTROL PANEL

Operating room control panels are used to control the lighting, operation lamps, negatoscope, etc. units in the room, and to display environmental information such as temperature, humidity, filter pressure, room differential pressure with external sensors to be connected. It has many additional features such as communicating with gas panel and automation system, handsfree phone, music system.



Stopwatch/ Clock

Relay output controls

2 x Internal speakers

Isolation power panel
alarm information

Internal microphone

Temperature / Humidity / Room
differential pressure / Filter pollution
information and set values.

4 Channel
Music
broadcast

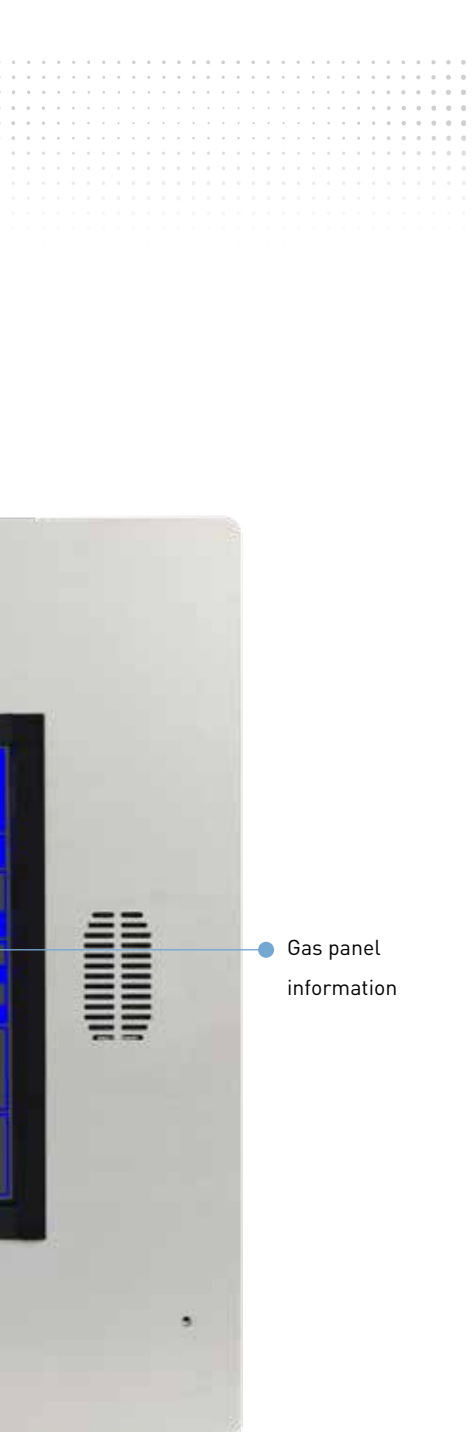
Internal
IP phone

TECHNICAL SPECIFICATIONS

- 21" widescreen display
- 4 x Music channels, 2 x internal speakers
- Handsfree internal phone.
- RS485 / TCP-IP communication protocols.
- Clock, Stopwatch and Gas information

on one screen.

- DIN4301 stainless steel front panel.
- Communication with IT panel and Gas panel directly.

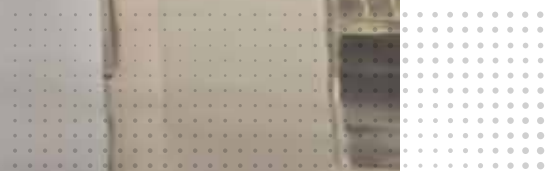


Gas panel
information

Screen	
Screen type	21.5" Infrared touchscreen
Clock	On the main menu
Stopwatch	Touch screen
Inputs	
0-10V analog sensor input	8 Reserved analog inputs
Music input	4 Channels
Temperature / Humidity / Filter pressure / Room pressure	4 Channel analog input
Outputs	
Lighting	4 Channels / (On-Off) - (L1/L2/L3/L3) + Dimmer
Operation lamp	2 Channel / (On-Off)
Negatoscope	1 Channel / (On-Off) + DIMMER
Operating room busy luminaire	1 Channel / (On-Off)
Ultraviolet lamp	1 Channel / (On-Off)
Heater	1 Channel / (On-Off)
Air conditioner (half flow / full flow)	2 Channel / (On-Off)
Gas information	8 Channels
Reserved	8 Reserved analog output
Temperature / Humidity set	2 Analog output
Music	4 Channels
Alarm	(On-Off)
Alarm mute	(On-Off)
Specifications	
Operating system	Linux
Temperature / Humidity / Pressure sensor limit setting	Lower limit / Upper limit setting, buzzer available
Gas discharge outlet	1 Channel / (On-Off)
Internal speaker	Available
Internal microphone	Available
Phone	Internal IP Phone
Measurements	
Temperature	0°C-50° C / 0-10V Analog
Humidity	0%-100% / 0-10V Analog
Room pressure	Pascal / 0 Pa- 100 Pa / 0-10V Analog
Filter pollution level	Pascal / 0 Pa- 100 Pa / 0-10V Analog
Audible alarm	Adjustable
Communication	Mod-Bus(RS485) / TCP-IP
Front panel	DIN4301 (2mm Stainless Steel)
Dimensions	
Dimensions (mm)	703 x 135 x 498 (W x D x H)

ISOLATION POWER SYSTEMS





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