

ILSE® Product Summary Brochure

APEXLPI (Shanghai) Electrical & Mechanical Technology Co., Ltd





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ILSE is a joint venture company of China and Australian owned manufacturer's **Lightning Protection International Pty Ltd (LPI)** of innovative and quality lightning protection products.

ILSE is the only China and Australia joint venture company with technology transfer of Australian key player of innovative and quality lightning protection products.

ILSE hold the Quality and Environmental Certificates ISO9001:2015.

ILSE's 4-Step Approach to Lightning Protection

It is the strategic aim of our company to be able to provide a complete packaged solution. ILSE has identified 4 key steps when considering the complete approach to lightning protection.

Our system design approach includes:

- 1 Definition and provision of area protection
- 2 Creation of a bonded earthing system
- 3 Protection of power lines
- 4 Protection of signal, data and communication lines

DIRECT STRIKE PROTECTION



Ordering Code	Description
CAT I-G	CAT Terminal, Gold, Model I
CAT II-G	CAT Terminal, Gold, Model II
CAT III-G	CAT Terminal, Gold, Model III
CATIGI-G	CAT Terminal for connection to 2 inch GI Pipe, Gold, Model I
HVSC-PM	High Voltage Shielded Cable – per metre
LSR 1	Lightning Strike Recorder

*Stainless steel Guardian CAT terminals available upon request.



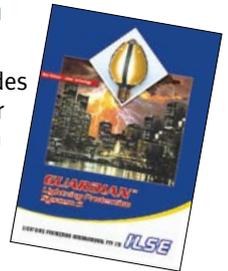
Ordering Code	Description
STORMASTER-ESE-15	Stormmaster, ESE 15, Air Terminal, Gold
STORMASTER-ESE-15-GI	Stormmaster, ESE 15, Air Terminal, Gold, GI Connector
STORMASTER-ESE-30	Stormmaster, ESE 30, Air Terminal, Gold
STORMASTER-ESE-30-GI	Stormmaster, ESE 30, Air Terminal, Gold, GI Connector
STORMASTER-ESE-50	Stormmaster, ESE 50, Air Terminal, Gold
STORMASTER-ESE-50-GI	Stormmaster, ESE 50, Air Terminal, Gold, GI Connector
STORMASTER-ESE-60	Stormmaster, ESE 60, Air Terminal, Gold
STORMASTER-ESE-60-GI	Stormmaster, ESE 60, Air Terminal, Gold, GI Connector

*Stainless steel Stormmaster ESE terminals available upon request.



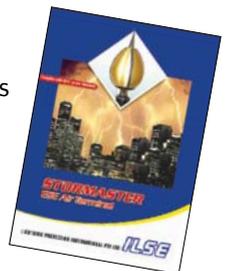
Guardian Lightning Protection System 5

- ILSE's Guardian System 5 provides a purpose designed package for direct strike lightning protection
- Family of Controlled Advanced Triggering Terminals (CAT) with the design based on the latest research
- High Voltage Shielded Cable (HVSC) is a purpose designed insulated downconductor which greatly reduces the risk of side flashing
- Lightning Strike Recorder (LSR 1) to effectively count strikes captured by the Guardian System
- The Guardian System 5 is economical and simple to install
- Installations in over 20 countries worldwide
- Tested in compliance to IEC Test Standard: IEC 60-1:1989



Stormmaster ESE Air Terminal

- ILSE offers a selection of models from within it's ESE range of terminals
- All terminals have been tested to standard NFC 17-102
- Economical and easy to install



ILSE also offers an extensive range of conventional lightning protection products and accessories. Contact ILSE or an authorised representative for product details.

Lightning Warning System

ILSE's Lightning Warning System is designed for the early warning of an approaching storm front. The ILSE LWS sounds an alarm on the approach of a lightning discharge and allows all personnel to take precautionary action to protect themselves from the dangers of a lightning discharge.

Ordering Code	Description
LWS Mk III	Lightning Warning System Mk III
LWS - Tester	Lightning Warning System Tester



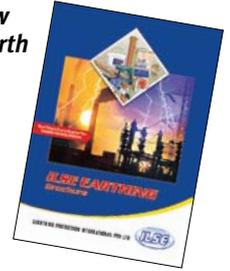
- Suitable applications include – sporting events such as golf and football, mining, defence and explosive environments
- Detects lightning activity within 10 to 25km
- Warning and alert status
- All clear signal



EARTHING AND BONDING



ILSE provides an extensive range of earthing products for the installation of a low impedance earthing system. Whether you are installing a dedicated lightning earth or a facility earth grid it is essential to ensure personnel safety and provide an effective earth which will limit disruptions to services.



ILSE® Exoweld

The use of ILSE® EXOWELD exothermic welding process is a safe and efficient way of providing a permanent connection between conductors.

- ILSE® EXOWELD connections will not corrode or rust with age
- No water ingress like bolt type, crimping and compression connections
- Current carrying capacity equal to that of the conductor
- Economical and simple to install

Contact ILSE or an authorised representative for details on the ILSE® EXOWELD range of products.



Earth Rods and Accessories

ILSE offers a range of earthing products and accessories as part of its packaged solution for the complete approach to lightning protection. The ILSE range includes a complete selection of copper bonded steel earth rods, clamps, tapes, braids and pre-engineered ground grids and meshes.

Contact ILSE or an authorised representative for details on the full range of earth rods and accessories.

Earth Enhancing Compounds

ILSE offers a selection of earth enhancing compounds for the treatment of soil in and around an earthing system to reduce the soil resistivity and lower ground impedance.

Ground Resistance Improvement Powder (GRIP) is supplied in 10kg and 40kg kits and is particularly effective in difficult sites such as sandy soils and rocky ground.

ILSE RESLO is an economical treatment compound which is supplied in 10kg bags and is best suited to sites where excessive soil resistivity is not considered a problem.



Ordering Code	Description
GRIP-10	Ground Resistance Improvement Powder – 10kg
GRIP-40	Ground Resistance Improvement Powder – 40kg
RESLO-10	Resistance Lowering Compound – 10kg Bag

• Independent test reports available



Transient Earth Clamp

The ILSE Transient Earth Clamp provides equipotential bonding under transient conditions by forming a closed circuit, whilst remaining in “open circuit” under normal operating conditions.

The TEC should be used where separate earthing systems are installed.

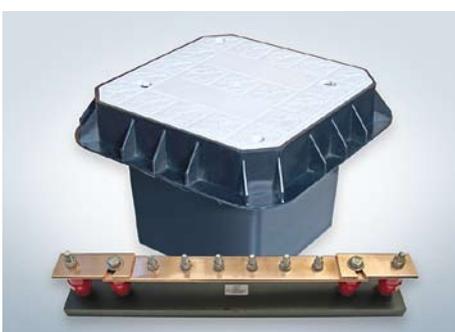
Ordering Code	Description
TEC100	Transient Earth Clamp, DC Sparkover voltage >350V DC, Impulse Current (Iimp) 100kA 10/350µs Max discharge current (Imax) 150kA 8/20µs



Insulated Joint Protector

The ILSE Insulated Joint Protector is designed for the protection of insulated joints in oil and gas pipelines. The IJP is connected directly across the insulated joint, should the insulated joint voltage exceed the breakdown voltage of 350V the IJP will immediately conduct the surge current to ground.

Ordering Code	Description
IJP100	Insulated Joint Protector, DC Sparkover voltage >350V DC, Impulse Current (Iimp) 100kA 10/350µs Max discharge current (Imax) 150kA 8/20µs Type approval: II 2GD EEx m II T3



Earth Bars and Inspection Pits

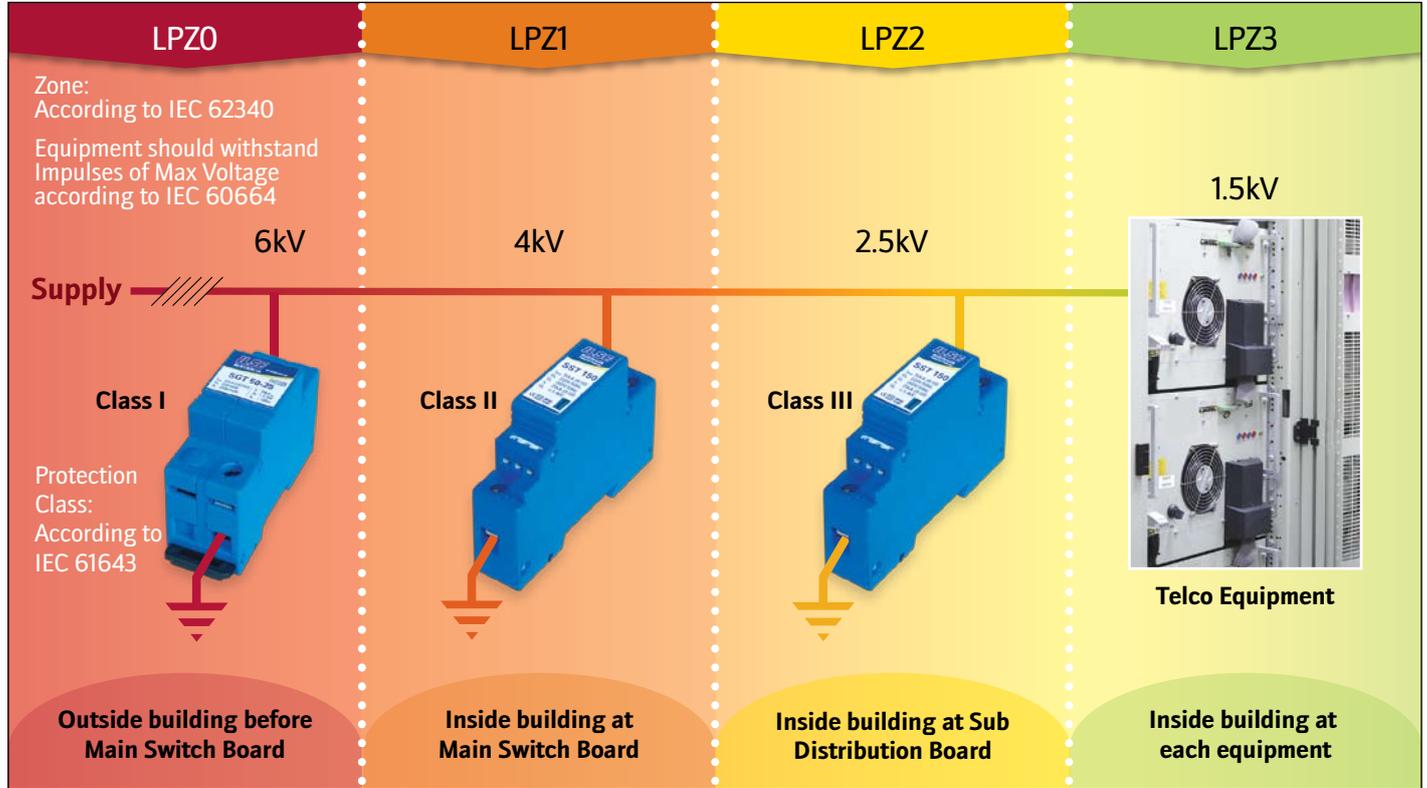
Ordering Code	Description
EPIT-P	Polymer Earth Pit, Rated + 5 Tonne, 250mm (top) x 180mm (base) x 210mm (depth)
EB400	Earth Bar, 400mm x 80mm x 98mm, 6 Way
DL-4751	Disconnecting Link, 6 Way earth bar, 475mm x 80mm x 98mm, single disconnect link
DL-5502	Disconnecting Link, 6 Way earth bar, 550mm x 80mm x 98mm, twin disconnect links

* Contact ILSE or an authorised representative for details on the full range of ILSE earth bars and inspection pits.

SHUNT POWERLINE PROTECTION

ILSE offers a wide selection of technologies and products which are available for transient protection of the mains power supply at the point of entry to your facility. These products / technologies are represented in two categories - shunt protection and series protection.

- Ideal for robust equipment such as air conditioning, pumps and motors
- Point of entry protection
- Energy diversion only, voltage clamping devices installed between each phase and neutral or earth on mains switch board



Class I Protectors, (Spark Gap based) per IEC 61643

Ordering Code	Description
SGT50-25	Din Mount Spark Gap L-N, L-E protection, 240VAC Nominal, 50kA 10/350 μ s
SG60	Din Mount Spark Gap L-N, L-E protection, 440VAC Nominal, 60kA 10/350 μ s
NE100	Din Mount Spark Gap N-E protection, 240VAC Nominal, 100kA 10/350 μ s

Single phase and Three phase protectors fitted into steel enclosures (IP55) are available as 1PPM and 3PPM. Ask ILSE for further details.



Class II Protectors, (MOV based) per IEC 61643

Ordering Code	Description
SST150	Din Mount, L-N, L-E protection, 240VAC Nominal, (385V Uc), 50kA 8/20 μ s
SS140-275	Din Mount L-N, L-E protection, 110-240VAC Nominal, (275V Uc), 40kA 8/20 μ s
SS140-480	Din Mount L-N, L-E protection, 240VAC Nominal, (480V Uc), 40kA 8/20 μ s
3XSS140-275+NE15	Din Mount 3 phase L-N and NE protection, 110-240VAC Nominal, (275V Uc), 40kA 8/20 μ s

SST150, and both SS140 products all contain changeover alarm contacts and indicators. The 3XSS140-275+NE15 only has indicators (no alarms contacts).

SERIES POWERLINE PROTECTION



Series powerline protection is the best available protection for sensitive electronics such as rectifiers, switchmode power supplies, and other mission critical equipment. The Series Filter reduces the rate of rise of any transient overvoltage to acceptable levels, and also reduces the overall magnitude of the transient voltage the equipment receives.

Low Current Single Phase Filters Location: IEC 61643 Class III

Ordering Code	Description
DLSF-8A DLSF-16A DLSF-20A	DIN line surge filter, 1Ph 240Vac, 3 modes of protection, 12kA 8/20µs L-N primary protection, 12kA 8/20µs L-N secondary protection, and 20kA 8/20µs N-E protection. 110Vac version available upon request Variants available with 8A, 16A and 20A load current capacity



Single and Three Phase Surge Filters Location: IEC 61643 Class I, II & III

Standard Surge Filter Order code:

SF X YY A-NE

Where X is number of phases, and YY is circuit current rating per phase.

Other voltages available on request.

Standard Surge Filter specifications:

All units can withstand overvoltage and fault conditions in accordance with IEC 61643 requirements. All units incorporate non saturating inductors combined with high reliability capacitors to form an effective low pass filter, incorporating shunt protection elements on the line and load sides.



Number of Phases X	Current Rating YY	Description
1 or 3	32A, 63A	Surge filter with Class II protection applied P-N, 100kA 8/20µs line side protection, 50kA 8/20µs load side protection per phase. 100kA 10/350µs N-E
1 or 3	125A, 200A	Surge filter with Class I protection applied P-N, 50kA 10/350µs, 135kA 8/20µs line side protection, 50kA 8/20µs load side protection per phase. 100kA 10/350µs N-E
3	315A, 400A, 630A, 800A, 1000A, 1250A	Surge filter with Class I protection applied P-N, 50kA 10/350µs, 135kA 8/20µs line side protection, 50kA 8/20µs load side protection per phase. 100kA 10/350µs N-E

TELECOMMUNICATION PROTECTION



Din Mount Data and Telephone Line Protectors

Ordering Code: Where
DD X Y Z X is the number of pairs
DB X Y Z Y is the operating current (A)
 Z is the nominal operating voltage (V)

DD Series Din Mount Data Protectors

DD X Y Z

No. of Pairs X	Operating Current Y	Nominal Operating Voltage Z
1,2	0.1	06, 12, 24, 48, T
1,2	0.5	24, 30, 48, 80
1,2	5	12, 24, 48, 80

DB Series Wall or Plate Mount Data Protectors

DB X Y Z

No. of Pairs X	Operating Current Y	Nominal Operating Voltage Z
1,2,3,4	0.1	06, 12, 24, 48
1,2,3,4	0.5	06, 12, 24, 48
1,2,3,4	5	12, 24, 48



- DD and DB Series—Surge Current rating 20kA (8/20µs), DIN mount & suitable for protection of signal & data-lines for computer, data communication, instrumentation, broadcasting and industrial control interfaces.
- DD and DB Series used directly with EIA Standard Interfaces RS-232, RS-422, RS-423, RS-485 and with 4-20mA instrumentation loops.
- DD 1 o.1 T telephone line protector is suitable for analogue phone lines, ISDN, ADSL and PCM circuits.

TELECOMMUNICATIONS PROTECTION

Telephone and Data Line Protectors



Ordering Code	Description
TLP-K10	Telephone Pair Protector, 10 Pair, 1 MHz, 144kbits/s, 190V, a+b+e 20kA 8/20µs, Multistage, Krone LSA
VHS-K10-72	Very High Speed, 10 Pair, 12 MHz, 8Mbits/s, 72V, a+b+e 20kA 8/20µs, Multistage, Krone, LSA
VHS-K10-230	Very High Speed, 10 Pair, 12 MHz, 8Mbits/s, 230V, a+b+e 20kA 8/20µs, Multistage, Krone, LSA

- Telephone and Data Line Protection
- Multistage / over voltage protection
- Plugs directly into a KRONE* disconnect block

* KRONE, KRONE LSA and PROFIL are registered Trade Marks of KRONE GmbH Germany.

Protection of RF Feeder Cables & High Speed Coaxial Cable Data Lines



Ordering Code	Description
RF-NMF-90	RF Protector, 20kA, 72V – 108V, N Type M to F
RF-BNC-90	RF Protector, 20kA, 72V – 108V, BNC Type M to F
RF-NB-90	RF Protector, 20kA, 72V – 108V, N Type F to F (Bulkhead)
RF-NMF-350	RF Protector, 20kA, 280V – 420V, N Type M to F
RF-BNC-350	RF Protector, 20kA, 280V – 420V, BNC Type M to F
RF-NB-350	RF Protector, 20kA, 280V – 420V, N Type F to F (Bulkhead)
RF-NMF-600	RF Protector, 20kA, 480V – 720V, N Type M to F
RF-BNC-600	RF Protector, 20kA, 480V – 720V, BNC Type M to F
RF-NB-600	RF Protector, 20kA, 480V – 720V, N Type F to F (Bulkhead)
CF-90	RF / High Speed coaxial cable data line protector, 90V, 20kA, 75 Ohms
C75-BNC90	CCTV Circuit, 20kA, 90V, 75 Ohm, BNC Type
GSM 7/16F-7/16F	GSM Protector, 20kA, 50V, 50 Ohms, Frequency range 890 – 960 MHz, Female to Female*
GSM 7/16M-7/16F	GSM Protector, 20kA, 50V, 50 Ohms, Frequency range 890 – 960 MHz, Male to Female*

- For protection against transients on coaxial antenna RF feeder cables
- Simple plug in installation
- High impulse rating of 20kA 8/20µs
- Characteristic impedance: 50 Ohms and 75 Ohms where applicable

* 1800 & 1900 MHz versions available on request.



Computer & Data Equipment Protectors



Ordering Code	Description
RS232 9-9 Pin	RS232 9-9 Pin (9 Pin Protected), 50A 10/1000 Wave Shape
RS232 25-9 Pin	RS232 25-9 Pin (9 Pin Protected), 50A 10/1000 Wave Shape
RS232 25-25 Pin	RS232 25-25 Pin (25 Pin Protected), 50A 10/1000 Wave Shape
RS422 25-25 Pin	RS422 25-25 Pin (25 Pin Protected), 50A 10/1000 Wave Shape

- High performance surge protectors for computers, terminals and printers
- Moulded construction
- Low clamping voltage
- Standard RS-232C Male / Female 9 & 25 pin

Local Area Network Protector



Ordering Code	Description
LAN RJ45 Cat6	LAN, RJ45, 100 Base T Protector, Cat 6

- Simple Plug in operation
- CAT 6 / 1000Mbps application
- Low Attenuation
- Compact Design

Load Cell Protector

Ordering Code	Description
ILC36V	Load Cell Surge Protector, 4 or 6 wire application, 36V

- Designed for protection of sensitive strain gauge measuring equipment
- Protects against excitation overvoltage
- Low capacitance

Disclaimer

- ILSE maintains a policy of on-going product development, specifications are subject to change without notice.
- Application detail, illustrations and schematic drawings are representative only and should be used as guides.
- It should be noted that 100% (100 percent) protection level for direct strike lightning, lightning detection and surge and transient protection equipment is not possible and cannot be provided due to the lightning discharge process being a natural atmospheric event.

Distributed by:

ILSE

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