



# OVERLOAD DEVICE

過負荷警告裝置



## SAFETY DEVICE FOR OVERHEAD CRANE

### 架空吊車的安全機構

Overhead cranes are more popular in industrial factory. It can reduce manpower and increase efficiency, due to disoperation or negligence cause the operator and machine equipment damaged and delay to delivery.

We provided the overload protectors in electronic and mechanical types to prevent to overload of crane, hoist, the side pulling device to prevent dragging of loads and protects wire rope.

According to Inspection Regulation of Overhead Crane section3 item No. 3 wire rope and chain hoist should equip the overload device to prevent overload.

工業界使用架空吊車是必要的。可以節省人力、增加效率，但往往由於操作不當或人為疏忽而造成人員及機械設備的損壞，因而影響工廠生產進度，甚至危害操作人員。

本公司提供下列產品，可以把人為疏忽所造成之傷害減到最小，而達到不必要之當機。因此提供了電子式過載保護器、機械式過載保護器及防側拉裝置，供現有或全新天車所使用。依固定式起重機安全檢查標準，第三節第三條規定鋼索及吊練之吊升裝置及起伏裝置，應設有過捲預防裝置，足見其重要性。

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## Electronic Overload Device SDL & SCDL Type (Introduction & Feature)

### 電子式過載保護器SDL及SCDL型(說明和特性)

The Load limiter is designed to fully protect AC motor against conditions which can cause damage.

In addition to motor protection, the load limiter has feature that can protect overload mechanical equipment using AC motor such as HOIST, CRANE, If the motor of the associated mechanical equipment is overloaded, phase over current is monitored through current transformer(CT) of the load limiter, the relay in the load limiter energize a contactor or breaker to cutoff power supply to motor under fault condition, The load limiter has a of the functions, high reliability, versatile application, each handling & operation.

1. Since the load limiter having microcomputer built-in has the functions of delaying reset time & memorizing ascending time, It is automatically reset if hoist or crane is descended during the reset time.
2. Fine setting time & current is available since the device is digital type.
3. In case of being used for creep hoist having creep speed & high speed, the device displays each trip signal & each current setting.
4. Running current to motor is displayed itself. Thus, setting current is easily done without extra current meter.
5. When overload, LED flashing & alarm sound as trip indication provide a clear distinction.
6. Wring & installing are very simple by use of external current transformer.
7. Main control OCB & power PCB are easily separated for maintenance by use of each connector.
8. For easy maintenance, connection cable is easily separated from main body.
9. Check of inching number & total running time is available. In case of setting the password function, the device can be operated by authorized person only.
10. The value set is easily checked by pressing "up" (▲) or "down" (▼) keys without removing the seal or opening its cover.
11. The device can be used as the over current relay for protecting AC motor.

## Electronic Overload Device SDL & SCDL Type (Introduction & Feature)

### 電子式過載保護器SDL及SCDL型(說明和特性)

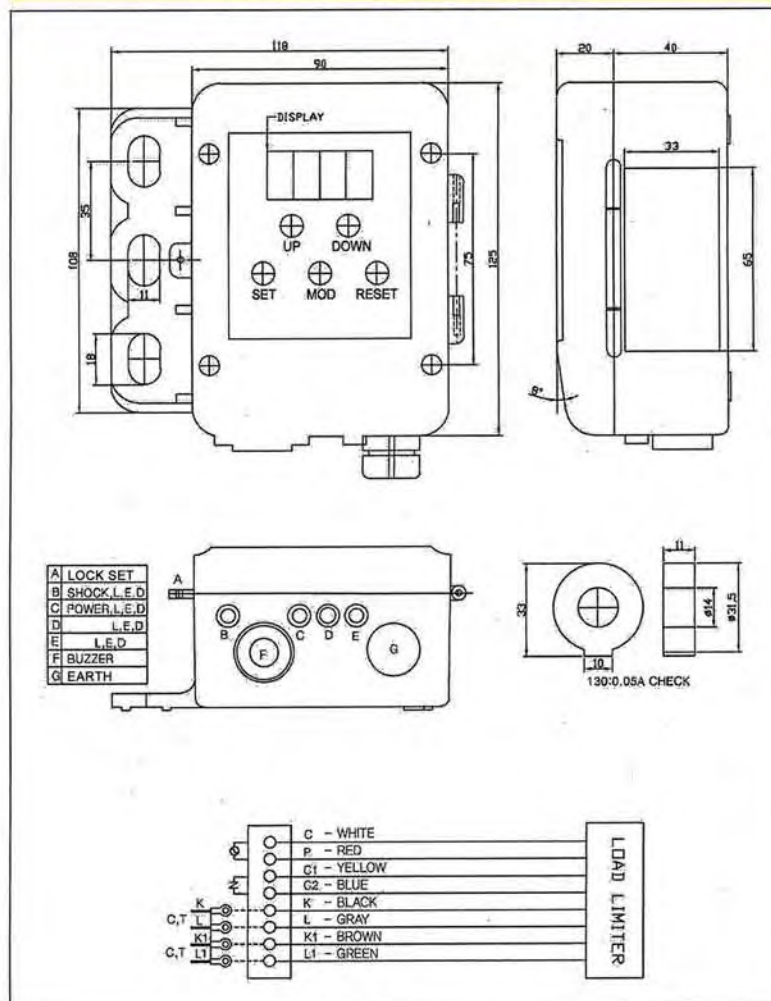
#### LOAD LIMITER SPECIFICATION

SPEC.		MODEL	WIRE HOIST	CHAIN HOIST
			SDL-250	SCDL-80
APPLICATION	CAPACITY		250 A	80 A
	VOLTAGE		AC 3PH 220V~480V	
LOAD CURRENT			0.5 A ~ 250 A	0.5 A~80 A
START TIME			0.1~25 SEC	
SHOCK TIME			0.1~25 SEC	
RESET TIME			0.1~25 SEC	
ELECTRIC CURRENT UNIT OF SETING			0.1 A ~ 1 A (AUTO)	
CONTROL VOLTAGE			AC 1PH 110V ~ 220V	
OUTPUT CONTACT POINT CAPACITY			EACH 1 NO ,NC / AC250V5A	
AMBIENT TEMPERATURE			-10 ~ 50 °C	
POWER CONSUMPTION			1VA	

※ REMARK ※

For control voltage, AC 1PH 24V or 36V or 48V is special order made.

#### BOX LAY-OUT (WIRE TYPE)



# Load Limiter & Top Limit Switch



- Load limiter for overhead cranes and hoists
- Top limit switch can be used as service limit switch or as an extra safety back-up top limit
- Quick and easy installation
- Available for all capacity cranes
- Specialised limiters available for heavy duty applications
- Can be configured to detect slack rope conditions
- Available preset or easily calibrated on site
- Automatic reset by reducing the load
- Protects against overloading of crane and supporting structures and protects against bottom block overwind
- Prevents accidents ensuring safer working conditions and reduces maintenance costs
- Available as a combination or separately

**SAFETY · RELIABILITY · ACCURACY**

## SPECIFICATION

### BODY

Models LLL18, LLL28, LLL45, LLL60, LLL80, LLL150 and LLL200:  
Cast from high grade LM4 aluminium with high proof and tensile strength with excellent machining properties.

### DISC SPRINGS

To German standards DIN2093 and 2092. This allows for repeatability of set point of within 1%.

### DIMENSIONS

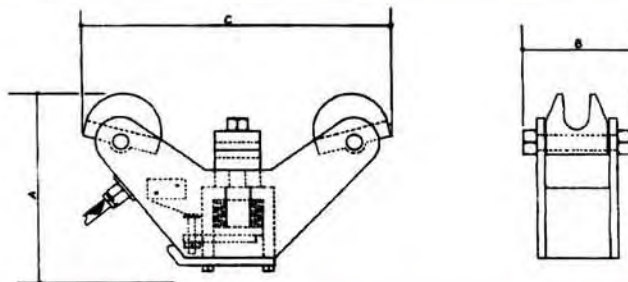
A compact load cell that when fitted does not affect the height of lift.

### GUIDES

Cast from LM4 aluminium. Guides provide a higher degree of accuracy due to the increased contact surface between the guides and crane/hoist rope.

### PAINTING SPECIFICATION

Anti corrosion cleaned to remove surface scale, powder coated and electrostatically applied to a dft. of 50-75 microns, oven post cured at 200°C for 20 minutes.



MODEL	MAX. LOAD	HEIGHT A	WIDTH B	LENGTH C	WEIGHT	ROPE DIAMETER
LLL18	1400Kg	100	60	140	1,3Kg	5-9 & 10-13mm
LLL28	2400Kg	100	70	190	1,5Kg	10mm - 14mm
LLL45	4500Kg	150	90	250	3,6Kg	13-16 & 16-20mm
LLL60	6000Kg	150	90	250	3,8Kg	20mm - 24mm
LLL80	8000Kg	215	125	375	7,0Kg	20-26 & 28-32mm
LLL150	15000Kg	215	125	375	7,3Kg	26mm - 36mm
LLL200	20000Kg	215	125	375	7,5Kg	to suit

**IMPORTANT NOTE:** Above rope loads for use on class 1 & 2 factory duty cranes used in accordance with BSS 466 of 1984, M5 rating. Consult factory for class 3 & 4 heavy duty applications.

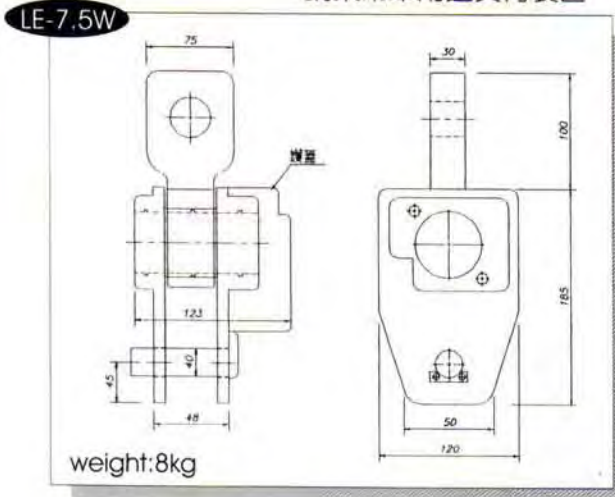
雙收吊車可用的過載保護器 LD型

The compact device can prevent overload and able to set loading point. When lifting beyond the set point, the compact device will switch off automatically and cause the buzzer and alarm to maintain safety of operator and prolong hoist life.

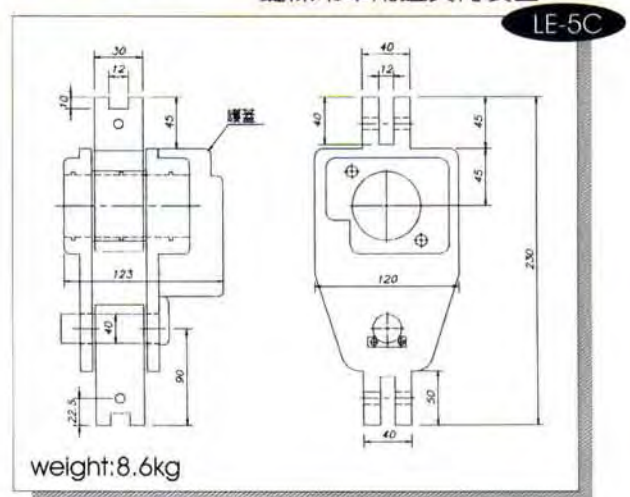
The compact device fits for crane, hoist, and chain hoist.

The compact device gained the bureau of National Standards. PAT. No.44495

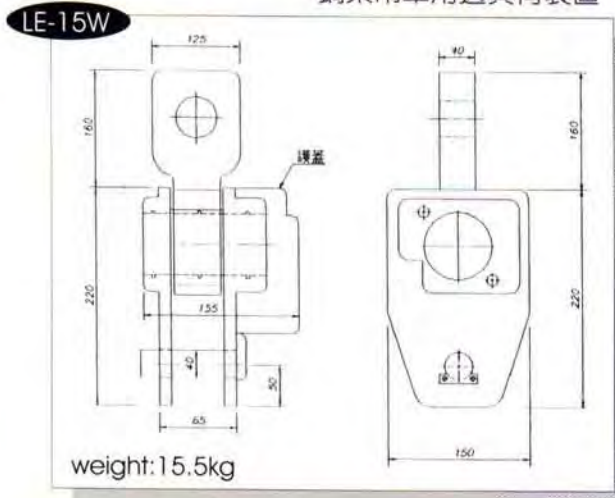
**1TON~7.5TON** over load for wire hoist  
鋼索吊車用過負荷裝置



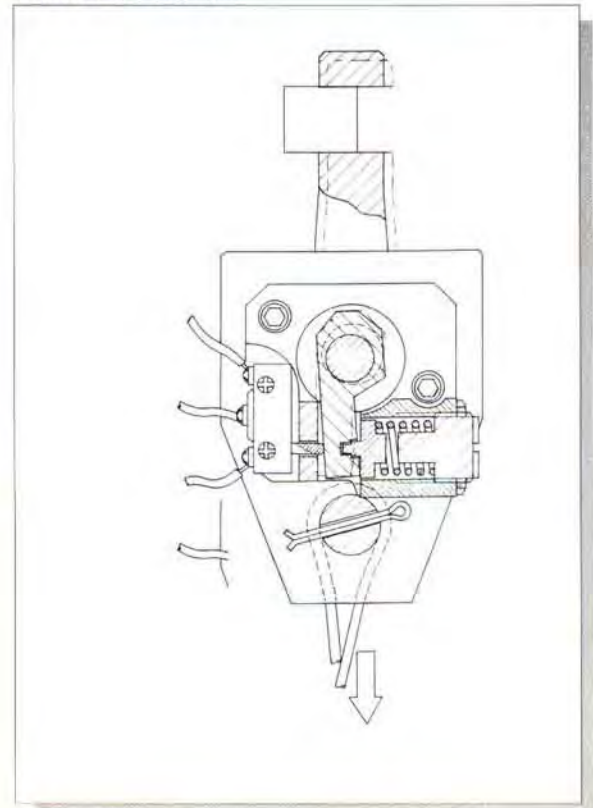
**1TON~5TON** over load for chain hoist  
鏈條吊車用過負荷裝置



**7.5TON~15TON** over load for wire hoist  
鋼索吊車用過負荷裝置



過負荷裝置剖面圖





**OVERLOAD SYSTEM POC2410**

走行吊車過載裝置系統

Over Hoist Limit SW



Length Det. & Cable drum



Display Console



Connect Box



Angle Sensor



Pressure Sensor



Control Unit

Overload system POC2410  
(be applicable to truck crane)

Over Hoist Limit SW



Display Console



Loadcell



Control Unit



Angle Sensor



Tension meter



Connect Box



Overload system POC2410  
(be applicable to crawler crane)



# Side Pulling Prevention Device

- Prevents side pulling on cranes and hoists
- Offers various degrees of adjustment to accommodate different angles
- Prevents dragging of loads
- Protects rope guide and rope drum and bearings
- Easily fitted to any crane or hoist
- Reduces down time
- Substantial reduction in maintenance costs



## INCREASED SAFETY IN THE WORKPLACE

As rope guide is protected all limits remain operative preventing overwinding and unwinding of rope

Prevents accidents and ensures much safer working conditions

Available with timer control panel to allow for isolation of both hoist & long or cross travel

## **SPECIFICATION**

### **MATERIALS**

LM4 high grade aluminium and mild steel

### **SWITCHES**

Microswitch manufactured to EC specifications up to operating voltage 220v AC

### **PAINTING**

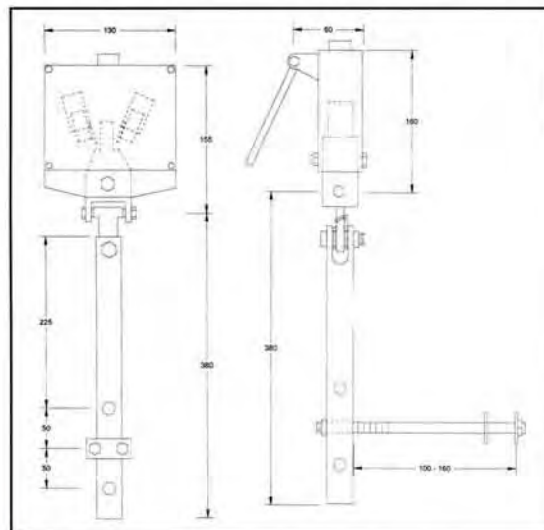
Degreased and pickled to remove scale then phosphated. Powder coated and oven cured at 200°C for 20 minutes to a dry film thickness of 150 microns

### **PLATING**

All metal parts zinc plated silver for appearance and protection against rust

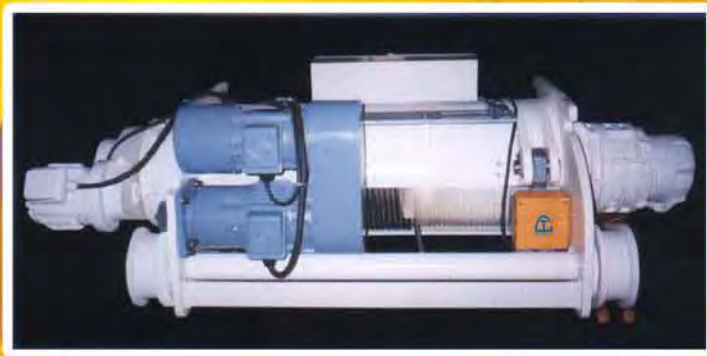
### **SIZE**

A very compact unit normally fitted above the moving range of the bottom block so as not to interfere with the normal height of lift



### **OPERATION**

Cranes and hoists are designed for vertical lift only. Side pulling of loads causes damage to the hook block, ropes, sheaves, rope drum and guide, bearings and the general structure. Associated with this is the increased accident potential due to misuse and the potential failure of limit switches and other associated safety items. With the installation of the Liftco side pulling prevention device the dangerous practice of side pulling of load is eliminated. The crane/hoist can thus lift only vertically, as designed, increasing safety levels on the factory floor and reducing maintenance costs and wasteful down time.



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