



## Description

This unit combines a 5 digit digital LED display with a sensor interface and power supply for use with our precision range of closed loop inclinometers. It operates from a mains power supply of 90-260Vac, and in turn supplies  $\pm 12\text{Vdc}$  power to the inclinometer sensor. They are supplied calibrated to match the individual sensor at 24 points over the measurement range to enhance the accuracy of these precision sensors even further. It has an RS485 output, 4-20mA signal re-transmission, and two single pole change over relays which can be programmed to operate at any angle. This is a simple to use plug and play device which provides extremely accurate angle measurement in a flexible and highly configurable system.

## Features

- 5 digit high contrast LED display
- Calibrated to match sensor for optimum performance
- 4-20mA signal re-transmission
- RS485 interface with ASCII or ModBus interface
- Two programmable SPCO relays
- Aluminium enclosure sealed to IP54
- Programmable digital filter
- Simple Connection via locking sealed connectors

## Rear Panel



## Specifications

General	
Voltage Supply	90-265 Vac
Power Draw	10 W
Size	220x125x52 mm
Weight	750 g
Measuring range	Min -19.999° Max 99.999°
Sensor Connector	Binder 712, B64 pin panel plug
Serial Interface	
Type	RS485 4 wire multi drop
Speed	1200 - 9600 baud
Parity	Odd Even or None
Stop Bits	1 or 2
Protocol	MODBUS™ (RTU or ASCII), J-BUS and DTPI
Isolation	500Vdc / peak ac
RS485 Connector	Binder 712, 5 pin panel plug
Analogue Output	
Output type	4-20mA, 2 wire
Resolution	<0.01mA
Accuracy	0.02mA
Max Current Out	22mA @ 18Vdc
Current Connector	Binder 712, 2 pin panel plug
Relay Output	
Number of Relays	2
Type	Single pole change over
Power	1A @ 250Vac 5A @ 30Vdc
Relays Connector	Binder 712, 7 pin panel plug



## Connection Details for Rear Panel of CDU-224 Display Unit

Inclinometer Connector

Binder 712 4 way connector	Description	Internal Wire	External Cable	Inclinometer Connector
Pin 1	+12V	Red	White	Pin A
Pin 2	GND	Blue	Brown	Pin B
Pin 3	-12V	Yellow	Black	Pin C
Pin 4	Vin	Green	Blue	Pin D

Analogue Output Cable

Binder 712 2 way connector	Description	Internal Wire	External Cable
Pin 1	+Ve Current Output	Red	White
Pin 2	Gnd Current Output	Blue	Brown

RS485 Output Cable

Binder 712 5 way connector	Description	Internal Wire	External Cable
Pin 1	Transmit A	Blue	White
Pin 2	Transmit B	Red	Brown
Pin 3	Receive A	Green	Black
Pin 4	Receive B	Yellow	Blue

Relay Cable

Binder 712 7 way connector	Description	Internal Wire	External Cable
Pin 1	Relay 1 Common	Blue	White
Pin 2	Relay 1 Normally Open	Yellow	Brown
Pin 3	Relay 1 Normally Closed	Red	Green
Pin 4	Relay 2 Common	White	Yellow
Pin 5	Relay 2 Normally Open	Green	Grey
Pin 6	Relay 2 Normally Closed	Yellow	Pink





Inclinometer Sensor Options



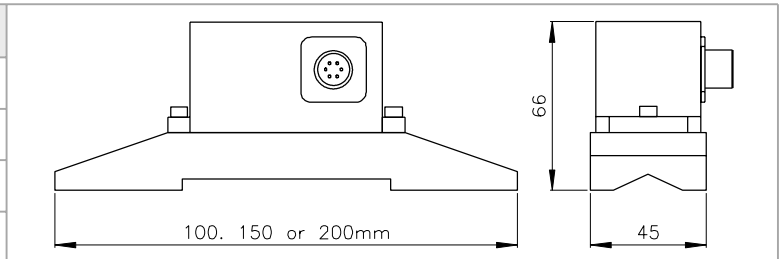
Model Number	Range	Display Resolution	Error (max)	Temp. Error
LSOC-1	±1°	0.001°	0.002°	0.001°/°C
LSOC-3	±3°	0.001°	0.004°	0.002°/°C
LSOC-14.5	±15°	0.001°	0.008°	0.004°/°C
LSOC-30	±30°	0.01°	0.015°	0.005°/°C
LSOC-90	±60°	0.01°	0.03°	0.006°/°C

Figures quoted are system accuracy when used with CDU-224 display

Base Options

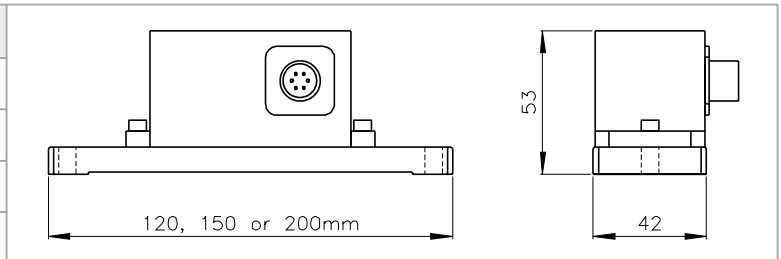
R Type Base - Flat and V Surfaces

Base Type	Length	Weight
R-100	100mm	1.0Kg
R-150	150mm	1.2Kg
R-200	200mm	1.5Kg



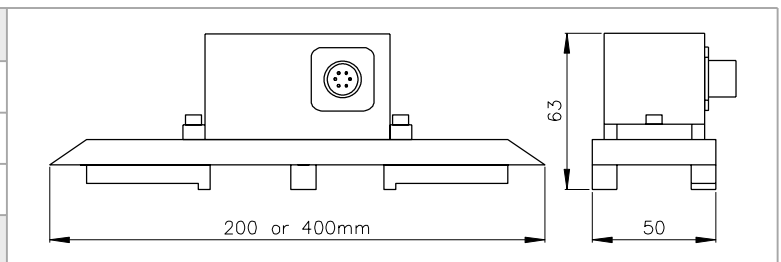
F Type Base - Flat With 2 Holes

Base Type	Length	Weight
F-120	120mm	0.45Kg
F-150	150mm	0.54Kg
F-200	200mm	0.72Kg



EV Type Base - Adjustable Centres

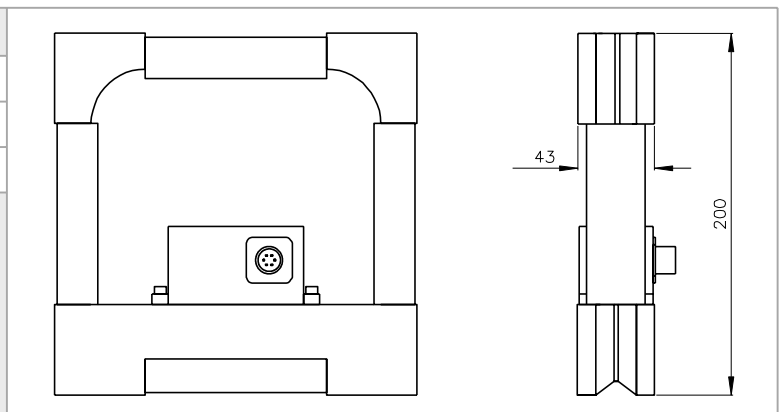
Base Type	Length	Weight
EV-1	50-200mm	1.5Kg
EV-2	170-400mm	2.3Kg



C Type Base - 200mm Square Frame

Base Type	Length	Weight
C	200x200mm	3.3Kg
CM	200x200mm	3.3Kg

CM Base has magnetic inserts on vertical V face





## Part Numbers and Ordering Options

Part Number	Description	Picture
CDU-224	Calibrated display unit, aluminium housing, RS485 interface, 4-20mA output and dual relay output, factory calibrated to match specific sensor	
CDU-224-Panel	Calibrated display unit, without housing for panel mounting, with terminal block connections, RS485 interface, 4-20mA output and dual relay output, factory calibrated to match specific sensor	
CDU-224-INC-2M	Inclinometer cable, 2m 4 Pin Binder 712 to Mil Spec Sensor Conn	
CDU-224-INC-5M	Inclinometer cable, 5m 4 Pin Binder 712 to Mil Spec Sensor Conn	
CDU-224-485-2M	RS485 cable, 2m, 5 Pin Binder 712 to bare ends	
CDU-224-485-5M	RS485 cable, 5m, 5 Pin Binder 712 to bare ends	
CDU-224-IOUT-2M	Current output cable, 2m, 2 Pin Binder 712 to bare ends	
CDU-224-IOUT-5M	Current output cable, 5m, 2 Pin Binder 712 to bare ends	
CDU-224-REL-2M	Relay output cable, 2m, 7 Pin Binder 712 to bare ends	
CDU-224-REL-5M	Relay output cable, 5m, 7 Pin Binder 712 to bare ends	
LSOC-1	Precision inclinometer sensor, range $\pm 1^\circ$	
LSOC-3	Precision inclinometer sensor, range $\pm 3^\circ$	
LSOC-14.5	Precision inclinometer sensor, range $\pm 15^\circ$	
LSOC-30	Precision inclinometer sensor, range $\pm 30^\circ$	
CDU-224-R-100	Precision ground base, flat and V bearing surfaces, 100mm long	
CDU-224-R-150	Precision ground base, flat and V bearing surfaces, 150mm long	
CDU-224-R-200	Precision ground base, flat and V bearing surfaces, 200mm long	
CDU-224-F-120	Precision ground base, flat base with two holes, 120mm long	
CDU-224-F-150	Precision ground base, flat base with two holes, 150mm long	
CDU-224-F-200	Precision ground base, flat base with two holes, 200mm long	
CDU-224-EV-1	Precision ground adjustable axes base, 50-200mm	
CDU-224-EV-2	Precision ground adjustable axes base, 170-400mm	
CDU-224-C	Precision ground square frame, 200x200mm	
CDU-224-CM	Precision ground square frame, 200x200mm, magnetic face	

Please note, other cables, bases and configurations are available on request, please contact us if you don't see exactly what you need.