

MULTIPOINT BOREHOLE EXTENSOMETER



INTRODUCTION

DATA DIGGER DDE-7000 Series Borehole Extensometer Electrical/Mechanical (E/M), single or Multi-Point Borehole Extensometers are used to accurately measure longitudinal displacement in rock masses or concrete boreholes. It is particularly useful for distinguishing deep seated movements from surface spalling, which is of value in assessing the need for or determining the efficiency of a rock bolting system. The rugged low cost rod extensometer is designed to be easily installed in difficult locations.

FEATURES

- Easy to install.
- Highly accurate when used with vibrating wire displacement sensors.
- Standard design to use mechanically/electronically.
- In built Thermistor and gas discharge tube.
- Individual sensors for multi-point applications.
- Light weight.

APPLICATION

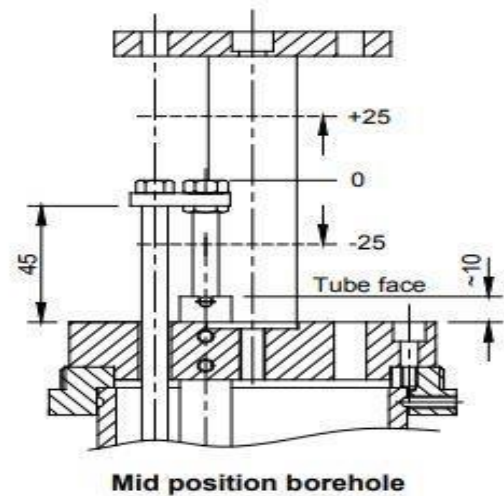
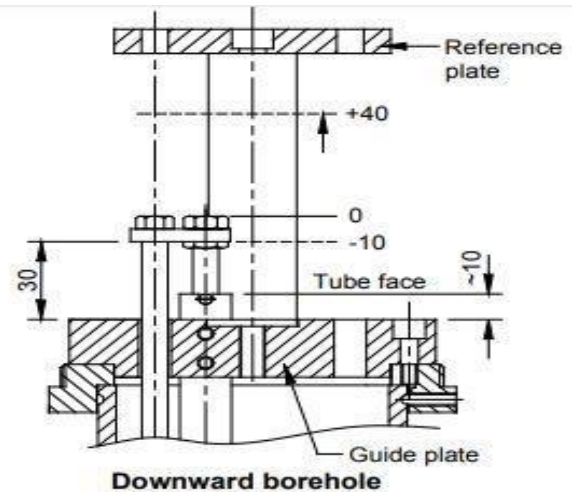
- Deformation around tunnels, mines and other excavations.
- Deformation in dams and embankments.
- Settlement of structures.
- Stability of natural and cut slopes.
- Displacement of structures.

OVERVIEW

DDE-7000 Series E/M Borehole Extensometer is ideally suited for upward, downward or inclined boreholes. It is a precision instrument designed to help civil engineers and geologists in the measurement of deformation of rock mass and adjacent or surrounding soil.

DESCRIPTION

DDE-7000 Series E/M Borehole Extensometer is comprised of a group of 1 to 6 stainless steel/fiber rods individually sheathed in a protective rigid PVC pipe and attached to an anchor. A reference head, anchored at the surface terminate the protective PVC pipe. Movement of the anchor relative to the head changes the distance between the head and the force end of the rod. Two types of head are available. The model (Mechanical) uses a dial or depth gauge to measure change in distance. The depth gauge has an engraved scale or digital readout. The model with remote sensor uses simultaneous Vibrating Wire displacement transducers DDE 8000 to measure the change in distance Single-Point and Multi point head configuration is available for both models Vibrating Wire displacement transducers has a built-in thermistor facility to read temperature. All displacement transducers are available to monitor anchor movements remotely and are sealed against moisture and water intrusion. A watertight overall housing seals the former; the transducer casing and housing doubly seals the latter. Both head terminate with protective capes that are removable. The heads are grouted in place at the borehole collar.



READING & INTERPRETATION

Both electrical and mechanical readings can be taken. Mechanical readings are taken with either a dial gauge or depth gauge. Electrical readings are obtained from the output of the DDE-8000 Vibrating Wire type transducers.

SINGLE POINT MECHANICAL ROD EXTENSOMETER

Model DDE-7000-1

MULTIPOINT MECHANICAL ROD EXTENSOMETER & V.W. DISPLACEMENT SENSORS

Model DDE-7000-2



EXTENSOMETER ANCHOR TYPE

Groutable Anchor: The preferred anchor for use in downward-directed boreholes.

Hydraulic Anchor : For use in rough boreholes in rock and soft ground.

Snap-Ring Anchor : For use in hard or competent rock.

READOUT INSTRUMENT & SENSORS

Digital Depth Micro-meter

Dial Indicator

VW Displacement Transducer

Standard Range up to 100 mm nominal

SPECIFICATIONS (MATERIALS)

SERIES	DDE-7000-BSE	DDE-7000-BME
Extensometer Rod	Stainless Steel	Mild Steel
Reference Head	Stainless Steel	Steel Casting
Casing	PVC/Aluminium	PVC/Aluminium
Cover	PVC/Aluminium	Mild Steel

SPECIFICATIONS

Borehole Diameter	38 mm	48 mm	61 mm	76 mm	101 mm
Number of Points	1	2-3	3-4-5	3-4-5	5-6
Instrument	Dial Gauge	Depth Gauge	Vibrating Wire	Vibrating Wire	Vibrating Wire
Measuring Range	0-50 mm	0-150 mm	25, 50, 75 mm	25, 50, 75 mm	25, 50, 75, 100
Linearity	0.05%	0.05%	1%	Typically 1%	Less than 1%
Operating Temp.	0°-60°C	0° to 60°C	-20° to 60°C	-20° to 60°C	-20° to 60°C
Cable			4 Core Shielded	4 Core Shielded	4 Core Shielded
Thermistor 3KOhm			Included		
Electrical Surge Protector			Optional		

