DiNi Digital Level Series Bid Specification Details

General Specifications Digital Levels

- The instrument to be provided is a Digital Level for measuring vertical displacement.
- The instrument is a Digital Engineering grade level instrument made specifically for precise recording or monitoring
- The instrument is equipped with a digital staff
- The instrument has an integrated carry handle
- The instrument is equipped with mechanical clamp operation
- The instrument has a user adjustable circular bubble
- The i ent allows the entry of alphanumeric field codes
- The instrument has a gas-filled telescope to protect against extreme external influences
- The instrument has a compensator for automatic levelling
- The instrument contains a removable PCMCIA memory card
- The instrument results are able to be a range of Office software products
- The instrument has continuous slow motion controls
- The instrument is supplied with an Operation manual

Regulations

- The instrument complies to DIN ISO9001 / EN 29001 standards
- The instrument complies to 21 CFR 1040.10 laser safety standards
- The instrument passes and displays the European Certification CE Mark approved
- The instrument is waterproof to IPX4 according to DIN 40 050 / IEC 529 – definition of indexes

Environmental and physical specifications

- The instrument has endless slow motion fine adjustment for aiming
- The instrument operating temperature is –20°C to +50°C (-5°F to +122°F)
- The instrument is capable of two way RS–232C communication
- The Standard instrument unit weights no greater than 3.5kg (7.7bs)
- The instrument with Distance Measurement capability weights no greater than 3.7kg (8.2 lbs)
- The Digital Engineering Level instrument weights no greater than 3.2kg (7.1 lbs)
- The instrument Tribrach weights no more than 0.7kgs (1.5 lbs)
- The instrument battery weights no more than 0.2kgs (0.4 lbs)
- The instrument power source is either internal or external
- The Standard instrument internal power source requirements is no greater than 6V, 1.1Ah and has an minimum 3 day of charge
- The instrument with Distance Measurement has internal power source requirements no greater than 6V, 1.1Ah and has a minimum 3 day of charge
- The Digital Engineering instrument internal power source requirements is no greater than 6V, 1.1Ah and has a minimum 5 day of charge
- The instrument internal battery is powered by a NiMH power source
- The instrument charger takes 1 hour to fully charge the instrument battery
- The Standard and Distance Measurement instrument PCMCIA card have a range of memory storage including 256KB, 512KB, 1MB, 2MB 4MB, 8MB
- The Digital Engineering instrument has internal data storage for 2200 lines of data
- The instrument has a digital angle readings and a display with one second (one grad) resolution.
- The instrument display is liquid crystal, 4 line x 21 characters per line with illumination and contrast control.
- The instrument has the ability to upload and download data directly from a computer

- The instrument Keyboard is a 22 key alphanumeric version.
- The instrument has open system DOS architecture
- The instrument operating system is menu driven.
- The instrument has the capability to turn sound on or off
- The instrument allows for display in English, German or Spanish language
- The instrument reports Date and time
- The Instrument allows point number entry of up to eight alphanumeric characters
- The instrument allows for repeat measurements by averaging up to 10 measurements
- The instrument allows a maximum standard deviation for multiple measurements
- The instrument is able to read an inverted rod

Accuracy and precision specifications

- The Standard and Distance measurement instrument Level Accuracy (DIN 18723, standard deviation for 1km two-way leveling) is at least:
  - 0.3mm (0.01 inch) with precise invar leveling rod
  - 1.0mm (0.04 inch) with foldable engineer's rod
- The Digital Engineering instrument Level Accuracy (DIN 18723, standard deviation for 1km two-way leveling) is at least:
  - 0.7mm (0.03 inch) with precise invar leveling rod
  - 1.3mm (0.05 inch) with foldable engineer's rod
- The standard and Distance measurement instrument Distance Accuracy Levelling mode calculated with 0.3m (0.98ft) of rod at range of 20m (65.6ft) is at least:
  - 20mm (0.8inch) with precise invar leveling rod
  - 25mm (1.0 inch) with foldable engineer's rod
- The Digital Engineering instrument Distance Accuracy Levelling mode calculated with 0.3m (0.98ft) of rod at range of 20m (65.6ft) is at least:
  - 20mm (0.8inch) with precise invar leveling rod
  - 30mm (1.3 inches) with foldable engineer's rod
- The instrument Angular Accuracy (External graduated circle) shall:
  - Read to 1.0 degree (1.0 grad)
  - Estimate to 0.1 degree (0.1 grad)
- The instrument Measuring range is as follows:
  - Electronic measurement range 1.5m to 100m (4.9 ft to 328 ft)
  - Visual Measurement from 1.5 m (4.9 ft)
- The instrument Rod Specifications:
  - Will measure rods ranging from 0.03m to 5.0m (0.1ft to 16.4ft)
  - Minimum amount of visible rod for level measurement 0.3m (0.98ft)
  - Minimum amount of visible rod for distance measurement 0.5m (1.64ft)
- The Standard and Distance Measurement instrument minimum time of distance observation must be at least 3 seconds
- The Distance Measurement instrument minimum time of angular observation must be at least 3 seconds
- The Digital Engineering instrument minimum time of distance observation must be at least 2 seconds
- The Standard and Distance Measurement instrument have a telescope magnification of 32x
- The instrument compensator tilt range is +/- 15'
- The Standard and Distance Measurement instrument compensator setting accuracy is +/- 0.2"
- The Digital Engineer instrument compensator setting accuracy is +/- 0.5"

Software specification

- The instrument program menu allows input of:
  - Maximum distance
  - Minimum sighting
  - Maximum difference
  - Reference coefficient
  - Vertical offset
- The instrument program menu allows adjustment of the following methods:
  - Forstner Method
  - Nabauer Method
  - Kukkamaki Method
  - Japanese Method
- The instrument program menu allows Data transfer by:
  - Interface 1 to PC
  - Interface 2 to printer
  - PC Demo (interactive demo/training program)
  - Standard ASCII file
  - Direct Link to Star*Lev software
- The instrument program menu allows the variable setting of recording parameters for:
  - Recording of data by:
    - Remote control (on/off)
    - Rod reading
    - Point number increment
  - Parameter format settings
    - Format Rec500 and format Rec_E)
    - Protc (Rec500, LnControl, Xon-Xoff)
  - Setting instrument parameters for:
    - Height units (ft, m , in)
    - Input units (ft m, in)
    - Display resolution (0.001, 0.0001)
    - Shut off (10min, off)
- The instrument operation modes includes:
  - Line mode (level loop)
  - Intermediate mode (side shots)
  - Stakeout mode and display cut /fill information