

Searching records

You can search for records by their type, point name, code, or by any combination of these values.

Searching raw records

In the RAW screen, select the **Srch** softkey to access the raw data search function.

- To find a point by name, enter the name in the PT field and press **ENT** twice.

You can use the asterisk (*) as a wildcard. For example, when you enter **30*** in the PT field, the search matches the points named 300, 301, 302, 3000A2, and 3010.

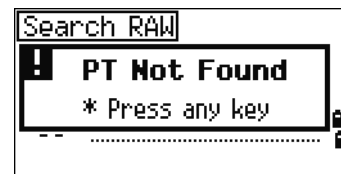
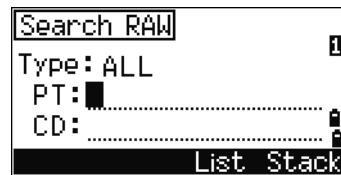
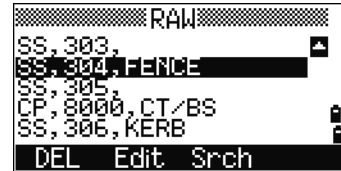
- To find a record by point type, move to the Type field and use **←** or **→** to change the selected point type. The options are ALL, ST, SS, SO, and CO. You can then enter a value in the Code field.

- If you select ST or SO in the Type field, you do not have to enter a value in the CD field. Press **ENT** in the PT field to start the search.
- If you select CO in the Type field, you cannot enter a value in the PT or CD fields. Press **ENT** in the Type field to start the search.

If more than one point matches the specified criteria, the matching points are displayed in a list. Use **↑** or **↓** to highlight the point that you want to use and then press **ENT** to select it.

Detailed data for the selected record appears. Do one of the following:

- To change the fields, select the **DISP** softkey.
- To return to the list, press **ENT**.
- If no point matches the specified criteria, an error screen appears. Press any button to return to the data screen.



Searching coordinate records

In the XYZ screen, select the Σ \square softkey to access the XYZ data search function.

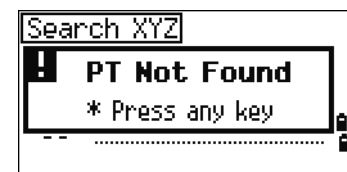
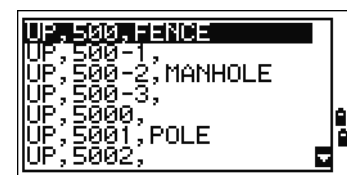
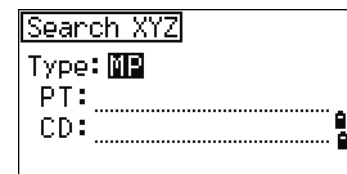
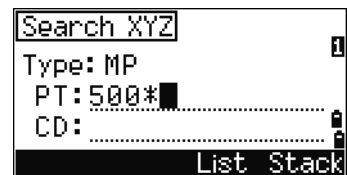
- To find a coordinate by name, enter the point name in the PT field and press \square twice.

You can use the asterisk (*) as a wildcard. For example, when you enter **500*** in the PT field, the search matches the points named 500, 500-1, 500-A, and 5000.

- To search for a record by point type, move to the Type field and use \square or \square to change the selected point type. The options are ALL, SS, SO, MP, UP, and CC.

If more than one point matches the search criteria, the matching points are displayed in a list. Use \square or \square to highlight the point you want to use and then press \square to select it.

If no point matches the specified criteria, an error screen appears. Press any button to return to the data screen.

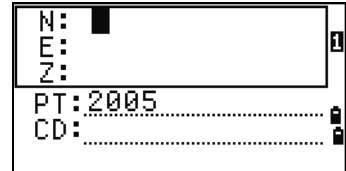


Entering coordinates

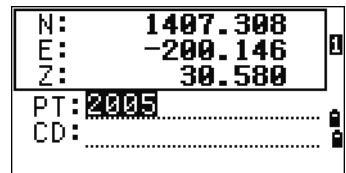
1. In the XYZ screen, select the **Input** softkey. A new input point screen appears.



The PT field defaults to the last recorded PT + 1, but you can change the value shown.

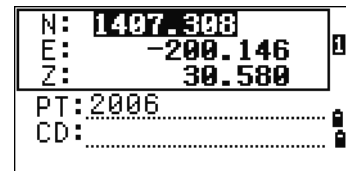


2. Use the numeric keys to enter the coordinates. Press **ENT** or **✓** in each field to move to the next field.



When you press **ENT** in the CD field, the point is stored as an MP record.

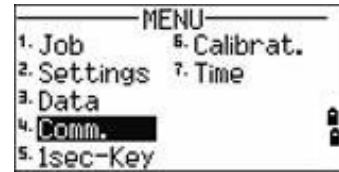
After you have recording a point, the next point input screen is shown with the updated default PT.



You can record NE, NEZ, or Z-only data in the database.

Communication

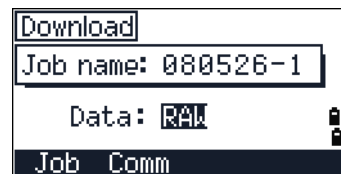
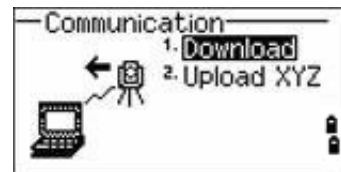
Use the Communication menu to download or upload data. To access it, press **[4]** or select **Comm.** on the MENU screen.



Downloading coordinate data

To change the download settings, press **[1]** or select **Download** in the Communication menu.

Format	NIKON (Fixed)
Data	RAW Coordinate

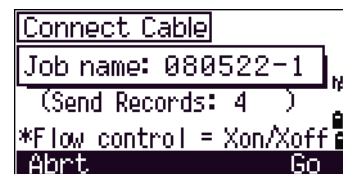


To display the total number of records that will be downloaded, press **[ENT]** in the Data field.

As each record in the current job is output from the Focus 4 total station, the current line number is updated.

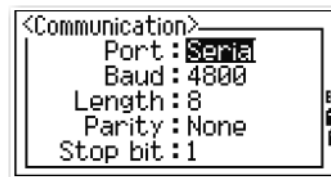
Once transferring is completed, you can choose whether to delete the current job:

- To delete the current job, press **[4]**.
- To return to the Basic Measurement Screen (BMS) without deleting the current job, press **[ESC]** or select the **Abt** softkey.



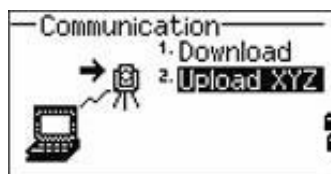
Optional Bluetooth function

When the optional Bluetooth wireless technology function is installed, a Port selection screen appears when you press the **Comm** softkey.



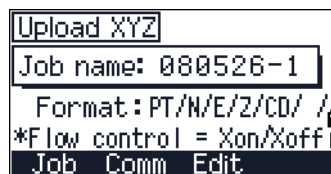
Uploading coordinate data

To upload coordinate data from a computer, press **2** or select **Upload XYZ** in the Communication menu.



The default data format appears.

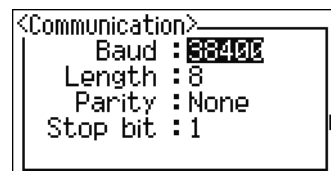
To change the order of data fields, select the **Edit** softkey. See also [Advanced feature: Editing the data order for upload, page 114](#).



Otherwise, press **ENT**.

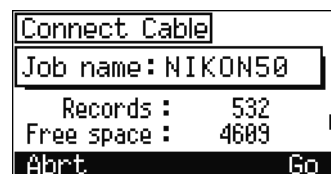
Select the **Job** softkey to go to the Job Manager screen. See also [Job, page 92](#).

To change the communication settings, select the **Comm** softkey. The serial port settings must match the settings used by the terminal software on the computer.



Use an RS-232C cable to connect the Focus 4 total station to the computer. In the terminal program, set flow control to Xon/Xoff.

The Free space field shows the number of points that can still be stored on the Focus 4 total station.



Press **ENT** to put the Focus 4 total station in receive mode. On the computer, choose the Send Text File command in the terminal program to start sending data.

As each point is received by the instrument, the value in the Records field is incremented.

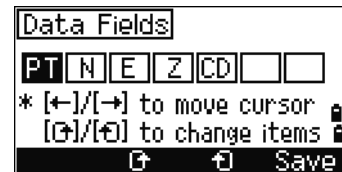
If you press **[ESC]** during data upload, the upload is canceled and the display returns to the Communication menu. Records that were received before you pressed **[ESC]** are stored in the job.

During upload, the system will truncate any code that is longer than 16 characters.

If the existing point is a UP, CC, or MP record, and it is not referred to by any station or backsight, it is automatically overwritten by the uploaded point. No error message appears.

Advanced feature: Editing the data order for upload

1. Select the **Edit** softkey. The Data Fields screen appears.
2. To move between the fields, press **[←]** or **[→]**.
3. To change the selected item in a field, use the **[↵]** and **[⇐]** softkeys. The options are PT, N, E, Z, CD, or blank.
4. To save your changes and return to the previous screen, select the **Save** softkey.



For example, if your original data is as follows:

1, 30.000, 20.000, L1

and you set the data fields to PT N E CD, then the uploaded data is:

PT=1, N=30.000, E=20.000, CD=L1

For more information about coordinate data, see [Transferring coordinate data to the total station, page 124](#).

Uploading coordinates without points

You can upload data without points. If you do not include a point in the format definition, each line of data is automatically assigned the next available point number. To help you to select points in the field, make sure that you store an identifier in the CD field.

The data format cannot include duplicate items. Use PT, N, E, Z, and CD once each in the data format.

To skip an item in your original file, set the corresponding field to blank.

1sec-Key

Use the 1sec-Key menu to configure the settings for the one-second buttons, **[MSR1]**, **[MSR2]**, and **[DSP]**.

To access it, press **[5]** or select **1sec-Keys** in the MENU screen.



[MSR] button settings

There are two **[MSR]** buttons:

- To change the settings for the **[MSR1]** button, press **[1]** or select MSR1.
- To change the settings for the **[MSR2]** button, press **[2]** or select MSR2.

Each **[MSR]** button has four settings.

In the Const and Track field, use the numeric keys to enter values. In the other fields, use **[<]** or **[>]** to change the settings.



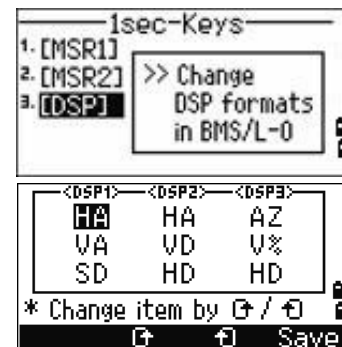
Tip – To quickly access the settings screen, hold down **[MSR1]** or **[MSR2]** for one second.

[DSP] button settings

To change the display items in the BMS and in Layout observation screens, press **[2]** or select **[DSP]** in the 1sec-Keys menu.

To move the cursor, use **[<]**, **[>]**, **[^]** or **[v]**. To change the display item, press either the **[G]** softkey or the **[H]** softkey.

To save the changes, press **[ENT]** from the last line of **<DSP3>** or select the **Save** softkey.



Tip – To quickly access the DSP settings screen, hold down **[DSP]** for one second.

Calibration

Use the Calibration screen to calibrate the instrument if required. To access the Calibration screen, press **[6]** or select **C a l i b r a t** from the MENU screen.

See also [Adjusting the calibration, page 120](#).



Time

Use the Date & Time screen to set the current date and time.

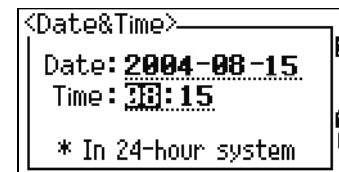
1. Press **[7]** or select **T i m e** on the MENU screen. The Date & Time screen appears.

The current date and time settings are displayed.

2. Enter the date in Year-Month-Day format. For example, to change the date to August 15, 2006 press **[2][0][0][6][ENT][8][ENT][1][5][ENT]**.

If the highlighted part of the field (for example, the year) is already correct, press **[ENT]** to use the current value. For example, if the date is already set to August 20, 2006, and you want to change the date to August 25, 2006, press **[ENT][ENT][2][5][ENT]**.

3. To move to the Time field, press **[ENT]** from the *Date* field:
4. Enter the time in 24-hour format. For example, to set the time to 4:35 PM, press **[1][6][ENT][3][5][ENT]**.
5. Do one of the following:
 - To finish setting the date and time, press **[ENT]** in the Minutes field.
 - To cancel the changes, press **[ESC]**.



Checking and Adjusting

In this chapter:

- Adjusting the electronic level
- Checking and adjusting the circular level
- Checking and adjusting the optical/laser plummet
- Zero point errors of vertical scale and horizontal angle corrections
- The instrument constant
- Checking the laser pointer

This chapter describes how to check the accuracy of the Focus 4 total station, and if necessary, adjust the required settings.

Adjusting the electronic level

To adjust the electronic level, Zero point errors of vertical scale and horizontal angle corrections are used. See [page 119](#).

Checking and adjusting the circular level

Once you have checked and adjusted the electronic level, check the circular level.

If the bubble is not in the center of the level, use the adjusting pin to rotate the three adjustment screws of either circular level on the instrument main body or tribrach until the bubble is centered.

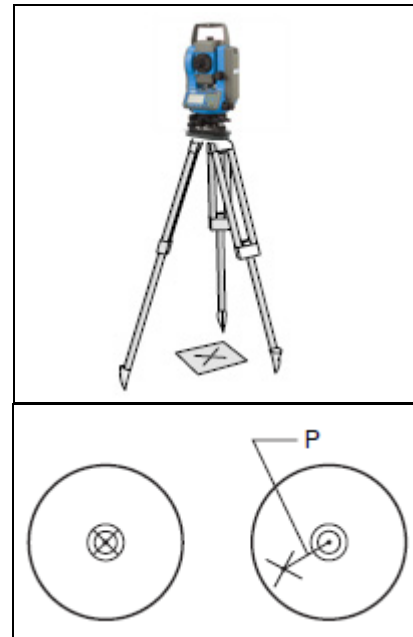


Checking and adjusting the optical/laser plummet


The optical axis of the plummet must be aligned with the vertical axis of the instrument.

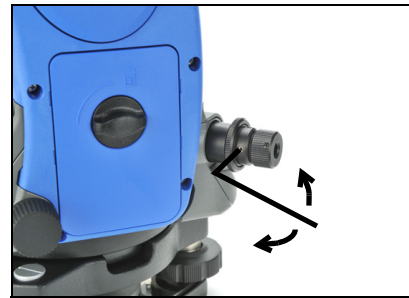
To check and adjust the optical/laser plummet:

1. Place the instrument on the tripod. You do not have to level the instrument.
2. Place a thick sheet of paper marked with an X on the ground below the instrument.
3. Do the following:
 - Look through the optical plummet and then adjust the leveling screws until the image of the X is in the center of the reticle mark.
 - For the laser plummet, adjust the laser pointer to the X.
4. Rotate the alidade by 180°.
 - If the marked image is in the same position in the center of the reticle mark, no adjustment is required.
 - For the laser plummet, if the laser pointer is on the X, no adjustment is required.



5. If the image or laser pointer is not in the same position, adjust the optical or laser plummet:

- a. Use the supplied hexagonal wrench to turn the adjustment screws until the image of the X is in Position P. Position P is the center point of the line connecting the X and the center of the reticle mark .



- b. Repeat from Step 2. For laser plummet adjustment, you must remove a cap.

Zero point errors of vertical scale and horizontal angle corrections

Checking the calibration

1. Set up the instrument on the tripod.
2. Follow the leveling procedures described in [Leveling the instrument, page 31](#).
3. Flip the telescope to the Face-1 position. The display and tangent screws are facing towards you.
4. Sight a target that is within 45° of the horizontal plane.
5. Read the vertical angle from the VA1 field in the Basic Measurement Screen (BMS).
6. Rotate the instrument 180° and flip the telescope to the Face-2 position. The display and tangent screws are turned away from you.
7. Read the vertical angle from the VA2 field.
8. Add the two vertical angles together, $VA1 + VA2$.
 - No adjustment is required if the zero reference for vertical angles (VA zero setting) is set to Zenith, and $VA1 + VA2$ equals 360° .
 - No adjustment is required if the zero reference for vertical angles (VA zero setting) is set to Horizon, and $VA1 + VA2$ is either 180° or 540° .
 - An adjustment is required if $VA1 + VA2$ is not one of the values listed above.

Note – The difference between the vertical angle reading the relevant angle (either 360° for Zenith, or 180° or 540° for Horizon) is called the **altitude constant**.

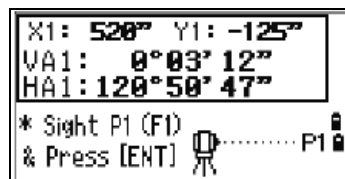
Adjusting the calibration

1. Press **[MENU]** and **[7]**. The calibration screen appears.
2. The Focus 4 total station has two-axis level compensation. Take an F1 measurement to a target on the horizon. Press **[ENT]**.



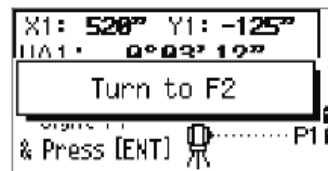
The calibration fields for F1 are:

VA1	Face-1 vertical angle (tilt-off value)
HA1	Face-1 horizontal angle (tilt-off value)
X1	Face-1 X-axis tilt value
Y1	Face-1 Y-axis tilt value



The vertical angle is shown in the V0 dir= Horiz setting.

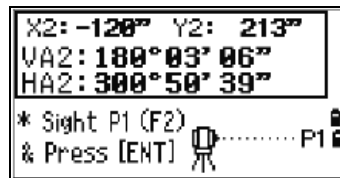
When you have taken the measurement, the message on the bottom line changes from **DO NOT TOUCH!** to **Turn to F2**.



3. Take an F2 measurement to the same target. Press **[ENT]**.

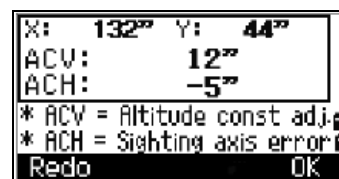
The calibration values for F2 are:

VA2	Face-2 vertical angle (tilt-off value)
HA2	Face-2 horizontal angle (tilt-off value)
X2	Face-2 X-axis tilt value
Y2	Face-2 Y-axis tilt value

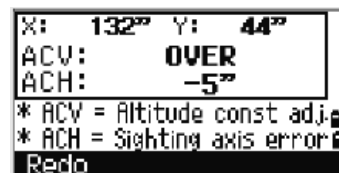


When the observation on F2 is completed, four parameters are displayed.

4. Do one of the following:
 - To return to the first observation screen, press **[ESC]** or select the **Redo** softkey.
 - To set parameters on the instrument, press **[ENT]** or select the **OK** softkey.



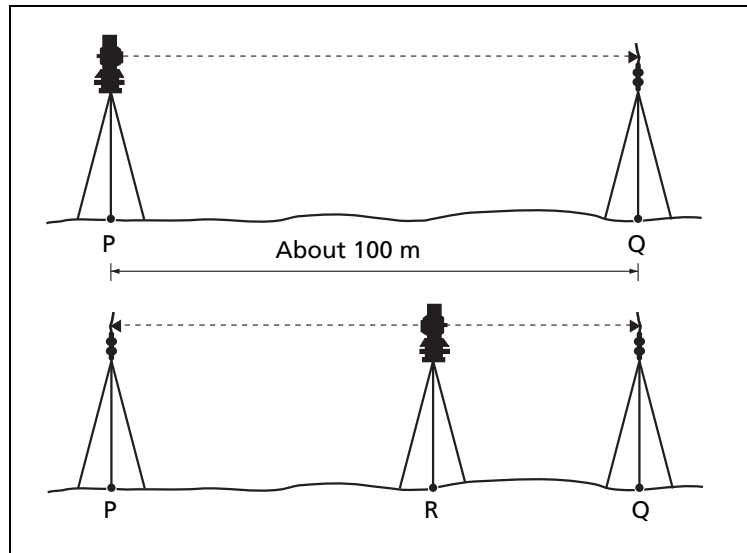
5. If ACV, ACH, or Tilt is out of range, **OVER** appears. Press any key to return to the first observation screen.



The instrument constant

The *instrument constant* is a numerical value used to automatically correct for the displacement between the mechanical and electrical centers when measuring distances. The instrument constant is set at the factory. However, to ensure the highest operational accuracy, we recommend that you check the instrument constant several times a year.

The following figure shows the setup to check the instrument constant.



To check the instrument constant:

1. Set up the instrument at Point P, in as flat an area as possible.
2. Set up a reflector prism at Point Q, 100 m away from Point P. Make sure that you take the prism constant into account.
3. Measure the distance between Point P and Point Q (PQ).
4. Install a reflector prism on the tripod at Point P.
5. Set up another tripod at Point R, on the line between Point P and Point Q.
6. Transfer the Focus 4 total station to the tripod at Point R.
7. Measure the distance from Point R to Point P (RP), and the distance from Point R to Point Q (RQ).
8. Calculate the difference between the value of PQ and the value of RP + RQ.
9. Move the Focus 4 total station to other points on the line between Point P and Point Q.
10. Repeat [Step 5](#) through [Step 9](#) several times (about ten times).
11. Calculate the average of all the differences. The error range is within 3 mm. ***If the error is out of range, contact your dealer.***

Checking the laser pointer

The Focus 4 total station uses a red laser beam to a laser pointer. The laser pointer is coaxial with the line of sight of the telescope. If the instrument is well adjusted, the red laser pointer coincides with the line of sight. External influences such as shock or large temperature fluctuations can displace the red laser pointer relative to the line of sight.

Transferring Coordinate Data

- Transferring coordinate data to the total station
- Transferring coordinate data from the total station

The Focus 4 uses lists of coordinate data. This chapter describes how to transfer data between the Focus 4 total station and the office computer.

Transferring coordinate data to the total station

Settings

To configure the transmission speed and other settings, press **(MENU)** and then select **Settings / Comm**. See also [Communications, page 99](#).



Record format

You can transfer coordinate records to the Focus 4 total station in the following formats:

PT	,	X	,	Y	,	Z	,	CD
----	---	---	---	---	---	---	---	----

PT		X		Y		Z		CD
----	--	---	--	---	--	---	--	----

PT	,	X	,	Y	,	Z
----	---	---	---	---	---	---

PT		X		Y		Z
----	--	---	--	---	--	---

PT	,	X	,	Y	,	,	CD
----	---	---	---	---	---	---	----

PT		X		Y		CD
----	--	---	--	---	--	----

PT	,	X	,	Y	,	,
----	---	---	---	---	---	---

PT	,	X	,	Y	,
----	---	---	---	---	---

PT	,	,	,	Z	,	CD
----	---	---	---	---	---	----

PT	,	,	,	Z
----	---	---	---	---

The formats use the following codes:

Code	Description	Length
PT	Point number	Up to 20 digits
X	Actual X coordinate	Variable length
Y	Actual Y coordinate	Variable length
Z	Actual Z coordinate	Variable length
CD	Feature code	Up to 16 characters

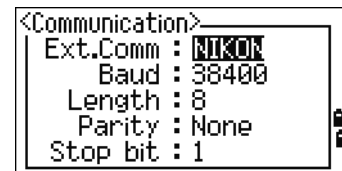
Data example

```
20100,6606.165,1639.383,30.762,RKBSS
20104,1165611.6800,116401.4200,00032.8080
20105 5967.677 1102.343 34.353 MANHOLE
20106 4567.889 2340.665 33.444 PT1
20107 5967.677 1102.343 34.353
20109,4657.778,2335.667,,PT2
20111,4657.778,2335.667
20113 4657.778 2335.667
20115,,,34.353,MANHOLE
20117,,,33.444
```

Transferring coordinate data from the total station

Settings

To configure the transmission speed and other settings, press **[MENU]** and then select `Settings / Comm.` See also [Communications, page 99](#).



Data examples

Nikon coordinate data format

```
1,100.0000,200.0000,10.0000,
2,200.0000,300.0000,20.0000,
3,116.9239,216.9140,11.8425,TRAIN PLATFORM
4,126.6967,206.2596,11.2539,RAMP
11,100.0045,199.9958,10.0000,
13,116.9203,216.9113,11.7157,
14,126.6955,206.2579,10.9908,
21,100.0103,199.9958,10.0000,
31,100.0013,200.0005,10.0000,
41,100.0224,200.0331,9.9000,
43,116.9263,216.9165,11.8016,CURB
44,126.7042,206.2871,10.8193,DITCH
45,116.9266,216.9160,11.8028,
46,126.7046,206.2845,10.8213,CP POINT
```


Specifications

In this chapter:

- [Main body](#)
- [Standard components](#)
- [External device connector](#)

This appendix details the specifications and standard components of the Focus 4 total station. It also describes the connector that is used to connect the instrument to an external power source or to communicate with an external device.

Main body

Telescope

Tube length	125 mm (4.91 inch)
Magnification	30×
Effective diameter of objective	45 mm (1.77 inch) EDM 50 mm (1.97 inch)
Image	Erect
Field of view	1°20' 2.3 m at 100 m (2.3 ft at 100 ft)
Resolving power	3.0"
Focusing distance	1.5 m to infinity (59 inch to infinity)

Measurement range

Distances shorter than 1.5 m (4.92 ft) cannot be measured with this EDM.

Measurement range with no haze, visibility over 40 km (25 miles)	
Prism mode	
Reflector sheet (5 cm x 5 cm)	300 m (984 ft)
Standard prism (1P)	5,000 m (16,400 ft)
Reflectorless mode	
Reference target	300 m (984 ft)

Notes –

The target should not receive direct sunlight.

“Reference target” refers to a white, highly reflective material (KGC 90%).

In reflectorless mode, the maximum measurement range is 500 m (1,640 feet).

Distance measurement precision

Precise mode	
Prism mode	$\pm (3 + 2 \text{ ppm} \times D) \text{ mm}$ -10 °C through +40 °C (+14 °F through +104 °F) $\pm (3 + 3 \text{ ppm} \times D) \text{ mm}$ -20 °C through -10 °C, +40 °C through +50 °C (-4 °F through +14 °F, +104 °F through +122 °F)
Reflectorless mode	$\pm (3 + 2 \text{ ppm} \times D) \text{ mm}$ -10 °C through +40 °C (+14 °F through +104 °F) $\pm (3 + 3 \text{ ppm} \times D) \text{ mm}$ -20 °C to -10 °C, +40 °C through +50 °C (-4 °F through +14 °F), (+104 °F through +122 °F)
Normal mode	
Prism mode	$\pm (10 + 5 \text{ ppm} \times D) \text{ mm}$
Reflectorless mode	$\pm (10 + 5 \text{ ppm} \times D) \text{ mm}$

Measurement intervals

Measurement intervals may vary with the measuring distance or weather conditions; At the initial measurement, it may take a few more seconds.

Precise mode	
Prism mode	1.5 sec.
Reflectorless mode	1.8 sec.
Normal mode	
Prism mode	0.8 sec.
Reflectorless mode	1.0 sec.
Prism offset correction	-999 mm to +999 mm (1 mm step)

Angle measurement

Reading system	Absolute encoder Diametrical reading on HA Single reading on VA
Minimum display increment	
360°	1"/5"/10"
400G	0.2 mgon / 1 mgon / 2 mgon
MIL6400	0.005 mil / 0.02 mil / 0.05 mil
DIN18723 accuracy	5" / 1.5 mgon

Tilt sensor

Method	Liquid-electric detection (dual axis)
Compensation range	±3'

Tangent screws

Type	Friction clutch endless fine motion
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Tribrach

Type	Detachable
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Level

Electronic level	Displayed on the LCD
Circular level vial	Sensitivity 10' / 2 mm

Optical plummet

Image	Erect
Magnification	3x
Field of view	5°
Focussing range	0.5 m (1.6 ft) to infinity

Optical laser plummet (option)

Wave length	635 nm
Laser class	Class 2
Focusing range	∞
Laser diameter	Approximately 2 mm

Display and keypad

Display type	Graphical LCD
Resolution	128 × 64
Display illumination	Backlight
Keys	25

Connections in the base of instrument

Communications	
Type	RS-232C
Maximum baud rate	38400 bps asynchronous
External power supply input voltage	4.5 V through 5.2 V DC

Battery pack

Output voltage	3.8 V DC rechargeable
Continuous operation time	
Continuous distance/angle measurement	10 hours
Distance/angle measurement every 30 seconds	16 hours
Continuous angle measurement	30 hours

Note – Tested at 25 °C (77 °F) (normal temperature). Operation times may vary depending on the condition and deterioration of the battery.

Environmental performance

Operating temperature range	–20 °C through +50 °C (–4 °F through +122 °F)
Storage temperature range	–25 °C through +60 °C (–13 °F through +140 °F)

Dimensions

Main unit	149 mm W x 145 mm D x 306 mm H (5.87 inch W x 5.7 inch D x 12.0 inch H)
Carry case	435 mm W x 206 mm D x 297 mm (17.1 inch W x 8.1 inch D x 11.7 inch H)

Weight

Main unit (without battery)	Approximately 3.5 kg (7.7 lbs)
Battery	Approximately 0.1 kg (0.22 lbs)
Carry case	Approximately 2.4 kg (5.3 lbs)
Charger and AC adaptor	Approximately 0.4 kg (0.88 lbs)

Environmental protection

Watertight/dust-proof protection	IP66
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Standard components

- Instrument main body
- Battery pack (x 2)
- Universal Charger, power cord, and adaptors
- Adjustment pin, Allen wrench
- Vinyl cover
- The *Spectra Precision Focus 4 Total Station User Guide* (this document)
- Carry case

External device connector

This connector can be used to connect to an external power source or to communicate with an external device.

Before using the external device connector, make sure that the external device meets the specifications below.

Input voltage	4.5 V DC to 5.2 V DC
System	RS-232C
Signal level	±9 V standard
Maximum baud rate	38400 bps asynchronous
Compatible male connector	Hirose HR10A-7P-6P or HR10-7P-6P



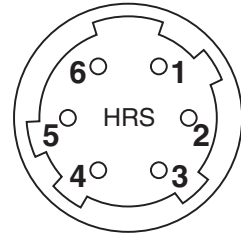
CAUTION – Except when connected as shown in the [System diagram, page 18](#), use of the Hirose HR10A-7P-6P or HR10-7P-6P is at your own risk.



CAUTION – Use only the male connectors specified above. Using other connectors will damage the instrument.

The external device connector is a Hirose HR 10A-7R-6S female connector. The pinouts for connecting the Focus 4 to an external device connector are shown below:

Pin	Signal	Description
1	RxD	Receive data (Input)
2	TxD	Send data (Output)
3	NC	No connection
4	V	Power
5	GND	Ground
6	NC	No connection



CAUTION – Only use the pin connections shown above. Using other connections will damage the instrument.



CAUTION – The Focus 4 total station has different pin assignments from other Spectra Precision total stations.

To connect to an external power source, supply power to Pin 4 (power terminal) and Pin 5 (ground terminal) on the instrument. The instrument will use the external power source even if the internal battery packs is attached.



CAUTION – Make sure that the power supplied is within the rated input range (4.5 V to 5.2 V, 1 A maximum). Power supplied outside this range will damage the instrument.

To communicate with an external device, connect the RS-232C signal from the external device to Pin 1 (input terminal) and to Pin 2 (output terminal) on the Focus 4.

Cap the data output/external power input connector securely when the Focus 4 is not in use. The instrument is not watertight if the cap is detached or not attached securely, or when the data output/external power input connector is in use.

The Focus 4 can be damaged by static electricity from the human body discharged through the data output/external power input connector. Before handling the instrument, touch any other conductive material once to remove static electricity.

Error Messages

In this chapter:

- Cogo
- Communications
- Data
- Job manager
- Stakeout
- Programs
- Recording data
- Searching
- Settings
- Station setup
- System error

The appendix describes the error messages that may appear when you use the Focus 4 total station.

Cogo

NO Result

The system was unable to calculate an area because points were not entered in the correct order.

Press any key to return to the Cogo menu. Then enter the points in the correct order.

Same Coordinate

The point or coordinate that you entered is identical to the previous input point.

Press any key to return to the point input screen. Then use a different point.

XY-coordinate is required

The input point does not have XY (NE) coordinates.

Press any key to return to the point input screen. Then enter a point that has X and Y coordinates.

Communications

If an error is detected while data is being transferred to the Focus 4 total station, the Focus 4 total station stops the transfer and displays one of the following messages:

Check Data

There are errors in the data that is being transferred to the Focus 4 total station, such as an alphabetic character in a coordinate field.

Press any key. Then check the specified line in the data.

DUPLICATE PT



CAUTION – If the existing point is a UP, CC, or MP record, and the point is not referred to by ST or BS, the existing point will be overwritten by the uploaded record. No error message appears.

The uploaded data contains a duplicate PT.

Press any button. Then check the specified point in the data.

PT MAX20 chars

The uploaded data contains a PT with a name or number that is longer than 20 digits.

Press any button. Then check the specified line in the data.

XYZ OVERRANGE

The uploaded data contains a coordinate that is longer than 13 digits.

Press any button. Then check the specified line in the data.

Data

Can't Edit Current ST

You have tried to edit the current ST.

You cannot edit the current ST.

Note – Old ST records can be edited, but no recalculation can be performed on the instrument.

Press any key to return to the code/layer name input screen.

Can't Edit ST/BS refer to this PT

You have tried to edit a coordinate that the current ST or BS refers to. You cannot change a coordinate if the current ST or BS refers to it.

Press any key to return to the Data view screen.

Can't Edit XYZ from measurement

You have tried to change the coordinates of an SO, SS, or CP record. You cannot change the coordinates of these records.

Press any button to return to the previous screen.

DELETE Stn-XYZ

You have tried to delete a coordinate record that the current ST or BS refers to. You must confirm that you want to delete this record.

To...	Press...
delete XYZ	the DEL softkey
return to the previous screen without deleting XYZ	ESC or the Abort softkey

Job manager

Cannot Assign

You have tried to set the current job as the control file.

Press any button to return to the previous screen. Then select a different job.

Can't Create

There is no space available to create a job or record a point.

Press any button to return to the Job Manager. Then select the **DEL** softkey to delete old jobs.

Existing Job

You have entered an existing job name for a new job.

Press any button and then change the name for the new job.

MAX 32Jobs

You are trying to create a new job when the maximum number of jobs (32) is already stored.

Press any button to return to the Job Manager. Then select the `DEL` softkey to delete old jobs.

Stakeout

Input Error

The point name style used in the Fr field is not the same as the style used in the To field. For example, the Fr field style is 1, and the To field style is A200.

Press any button to return to the Fr/To input screen. Then re-enter the point name, using the same naming style in both fields.

NO Stn Setup

You did not perform a station setup or BS check before entering the Stakeout function.

To...	Press...
go to the Stn Setup menu	<code>2</code> or select <code>Stn Setup</code>
return to the Basic Measurement Screen (BMS)	<code>ESC</code>
go to the Stakeout menu	<code>1</code> or select <code>Continue</code>



CAUTION – Selecting `Continue` does **not** resume the last ST record. You should only use the `Continue` option if you are sure that the previous ST coordinates and the current HA orientation are correct. Otherwise, records in the Stakeout function may not be correct.

Programs

NO Stn Setup



CAUTION – Selecting Continue does **not** resume the last ST record. You should only use the Continue option if you are sure that the previous ST coordinates and the current HA orientation are correct. Otherwise, records in the Programs function may not be correct.

You did not perform a station setup or BS check before entering the Programs function.

To...	Press...
go to the Stn Setup menu	2 or select Stn Setup
return to the BMS	ESC
go to the Programs menu	1 or select Continue

Recording data

DATA FULL

The data storage is full.

Press any button to return to the Basic Measurement Screen (BMS). Then:

To...	Press...
delete unnecessary data	MENU and select Data
delete jobs	MENU and select Job

DUPLICATE PT

The input PT you are trying to record already exists in the current job. An existing coordinate record cannot be overwritten by measured data.

Press any button to return to the point input screen. Change the setting in the PT field.

Duplicate PT

The input PT you are trying to record already exists in the current job as an SS, SO, or CP record. An existing SS, SO, or CP record can be overwritten by measured data.

To...	Press...
return to the PT input screen	ESC or the Abt softkey
record RAW data and update XYZ data	the XYZ softkey
record RAW data only	the RAW softkey

No Open Job

No job is open.

To...	Press...
open the job list, if there are existing jobs	[1] or select Select Job
create a new job	[2] or select Create Job
return to the previous screen	[ESC]

NO Stn Setup

There is no station record in the current job, or a station setup or BS check has not been done since the program was rebooted.

To...	Press...
continue recording	[1] or select Continue . If there is already an ST record in the job, the message CO, Use current orientation appears.
go to the Stn Setup menu	[2] or select STN Setup
return to the previous screen	[ESC]

OVER RANGE

You are trying to record a coordinate with more than 13 digits.

Press any button to return to the previous screen. Then check the setting for the current ST coordinate.

Searching

PT Not Found

There is no point that matches the criteria entered.

Press any button to return to the point input screen.

This message may appear in any function where the PT/CD is input, such as Station Setup or Stakeout.

Settings

Job Settings will be changed

You have changed one or more of the following job settings:

- VA zero or HA in the Angle screen (see [Angle, page 96](#))
- Scale, T-P, Sea Lvl, or C&R in the Distance screen (see [Distance, page 96](#))
- Coord or Az Zero in the Coordinates screen (see [Coordinate, page 99](#))
- Angle, Dist, Temp, or Press in the Unit screen (see [Unit, page 99](#))

To...	Press...
discard the changes to the job settings	ESC or the ABRT softkey. The current job remains open.
close the current job and save the changes to the job settings	ENT or the OK softkey.

Note – To record a point using the new settings, create a new job using the new settings.

Station setup

Same Coordinate

The input PT or coordinate is identical to the current station in STN/2:Known, or the same coordinate or point name/number is found in Resection.

Press any button to return to the PT input screen. Then use a different PT.

Space LOW

There is not enough space to record a station when you start any of the Station Setup functions.

To...	Press...
return to the BMS	press ESC or select the ABRT softkey. Select the DEL softkey in Job Manager to delete old jobs.
continue	press ENT or select the OK softkey. You may not be able to record the whole process.

XY-coordinate is required

The input point for ST/BS does not have N/E coordinates.

Press any button to return to the PT input screen. Then use a PT that has N/E coordinates.

Z-coordinate is required

The input point for Benchmark does not have a Z coordinate.

Press any button to return to the PT input screen. Then use a PT that has a Z coordinate. See [page 68](#).

System error

=SYSTEM ERROR=

The system has detected an internal error that is related to the lower-level system. Press any key to turn the instrument off. The system will reboot when this error is reported. If you still have more points to shoot in the site, turn the instrument on and repeat the open a job and station setup procedures.

Data stored before this error will be kept safely in the Job file. If the error appears frequently, please contact your dealer or Trimble Support and report the message that appears below the =SYSTEM ERROR= line.

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