User guide
M-6647-9138-02-A

RENISHAW
apply innovation™

ADTpro-100 Advanced Diagnostic Tool

Firmware version 3.1.x.

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Contents

1. Legal notices

Terms and conditions and warranty

Unless you and Renishaw have agreed and signed a separate written agreement, the equipment and/or software are sold subject to the Renishaw Standard Terms and Conditions supplied with such equipment and/or software, or available on request from your local Renishaw office.

Renishaw warrants its equipment and software for a limited period (as set out in the Standard Terms and Conditions), provided that they are installed and used exactly as defined in associated Renishaw documentation. You should consult these Standard Terms and Conditions to find out the full details of your warranty.

Equipment and/or software purchased by you from a third-party supplier is subject to separate terms and conditions supplied with such equipment and/or software. You should contact your third-party supplier for details.

Declaration of Conformity

Renishaw plc hereby declares that the ADTpro-100 Advanced Diagnostic Tool is in compliance with the essential requirements and other relevant provisions of:

- the applicable EU directives
- the relevant statutory instruments under UK law

The full text of the declaration of conformity is available at **www.renishaw.com/productcompliance**.

Compliance

Federal Code Of Regulation (CFR) FCC Part 15 – RADIO FREQUENCY DEVICES

47 CFR Section 15.19

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

47 CFR Section 15.21

The user is cautioned that any changes or modifications not expressly approved by Renishaw plc or authorised representative could void the user's authority to operate the equipment.

47 CFR Section 15.105

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

47 CFR Section 15.27

This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Unique Identifier: ADTpro-100

Responsible Party - U.S. Contact Information

Renishaw Inc.
1001 Wesemann Drive
West Dundee
Illinois
IL 60118
United States
Telephone number: +1 847 286 9953
Email: usa@renishaw.com

ICES-003 – Information Technology Equipment (including Digital Apparatus)

This ISM device complies with Canadian ICES-003(A).

Cet appareil ISM est conforme à la norme ICES-003(A).

Intended use

The ADTpro-100 is designed to assist installation and for fault diagnosis. It must be used as specified in Renishaw documentation and in accordance with the Standard Terms and Conditions of the Warranty and all other relevant legal requirements.

Further information

Further information relating to the ADTpro-100 and the compatible encoder systems can be found in the relevant data sheets and installation guides. These can be downloaded from our website at www.renishaw.com/opticalencoders and are also available from your local Renishaw representative.

Packaging

The packaging of our products contains the following materials and can be recycled.

Packing component	Material	ISO 11469	Recycling guidance
Outer box	Cardboard	Not applicable	Recyclable
	Polypropylene	PP	Recyclable
Inserts	Low density polyethylene foam	LDPE	Recyclable
	Cardboard	Not applicable	Recyclable
Bags	High density polyethylene bag	HDPE	Recyclable
	Metalised polyethylene	PE	Recyclable

REACH regulation

Information required by Article 33(1) of Regulation (EC) No. 1907/2006 (“REACH”) relating to products containing substances of very high concern (SVHCs) is available at **www.renishaw.com/REACH**.

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ADTpro-100 software notices

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KSDK Peripheral Driver
Licence: BSD-3-Clause

KSDK CMSIS Peripheral Drivers
Licence: Apache 2.0 & BSD-3-Clause

CMSIS Core header files
Licence: Apache Licence 2.0

The 3-Clause BSD Licence

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US government notice

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2. ADTpro-100

2.1 ADTpro-100 overview

The ADTpro-100 is a handheld, standalone encoder diagnostic tool featuring an integral colour touch screen that provides information to aid readhead set-up and system diagnosis.

It can be used in two different ways:

- **Standalone:** No PC, laptop, or tablet is required. The diagnostic information is displayed on the ADTpro-100 screen.
- **USB:** Requires a PC, laptop, or tablet with ADT View software. The diagnostic information is displayed via the ADT View software.

This guide covers the standalone use of the ADTpro-100. For information on using the ADTpro-100 in USB mode refer to the *ADT View software* user guide (Renishaw part no. M-6195-9413).
For instructions on how to install and set up the encoder system refer to the relevant system installation guide. These can be found at **www.renishaw.com/encoderinstallationguides**.

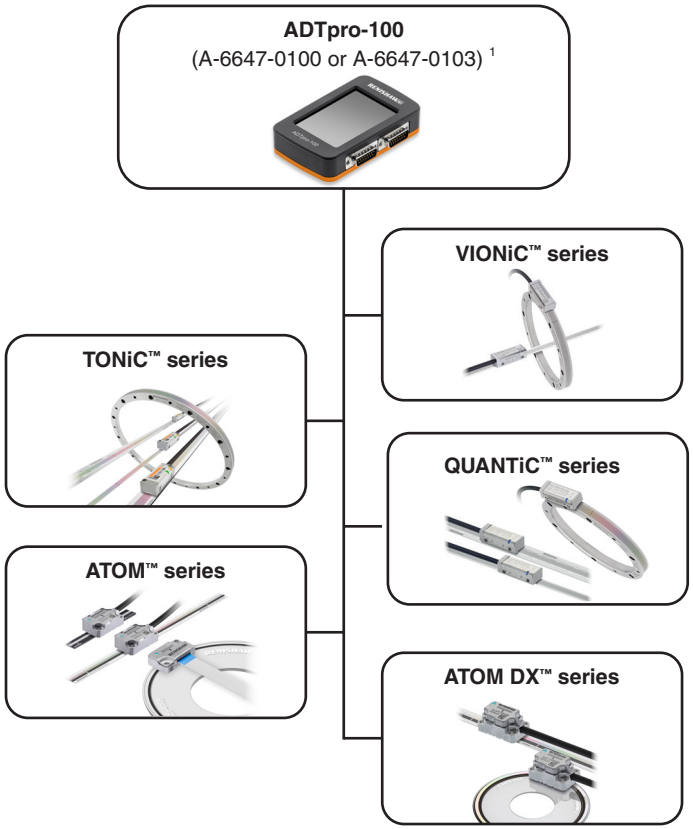
The ADTpro-100 can be used in-line connected between the encoder and the controller as part of the control loop.

NOTES:

- Only one readhead can be connected to the ADTpro-100 at a time.
- Gloves should not be worn whilst operating the ADTpro-100 as this may affect the response of the touch screen.
- Readhead jitter, SDE and latency may be worse when used in-line with the ADTpro-100.
- The functionality and behaviour may vary depending upon the ADTpro-100 firmware version. See section 4 for instructions for updating firmware version.
- Use of the ADTpro-100 with Functional Safety (FS) encoder systems DOES NOT preserve the Functional Safe status of the system as a whole.

For instructions on how to install and set up the encoder system refer to the relevant system installation guide. These can be found at **www.renishaw.com/encoderinstallationguides**.

2.2 ADTpro-100 compatibility



NOTES:

- Ri digital, ACi, TD, DOP, DSi, Ti10KD, and Ti20KD interfaces are not compatible with ADTpro-100.
- Functional Safety encoder systems (e.g. TONiC FS) DO NOT preserve the Functional Safe status of the system as a whole when used with ADTpro-100.

[1] See section 9 for details of ADTpro-100 kit contents.

2.3 Connecting an ADTpro-100

The ADTpro-100 is powered either by a 12 V, 1000 mA power supply or a battery pack [1] connected via a 5.5 mm × 2.5 mm DC jack. See section 8 for details of the power supply and jack.

IMPORTANT: The ADTpro-100 can only be powered via the DC jack. It cannot be powered via USB or in-line, using the controller power.

Once power is applied, a splash screen, showing information about the ADTpro-100, will be displayed until the screen is touched. The ADTpro-100 will then display the 'Signal', 'Select Readhead' or 'Connection Help' screen dependent on which encoder system is connected, as detailed in the table below.

Encoder system		ADTpro-100 input port	Default screen	Applicable section
No encoder		-	'Connection Help' screen	Section 2.3.1
QUANTiC (digital) readhead [2]		Digital input	'Signal' screen	Section 3.2
QUANTiC (analogue) readhead [2]		Analogue input	'Signal' screen	Section 3.2
VIONiC readhead [2]		Digital input	'Signal' screen	Section 3.2
ATOM DX readhead [2]		Digital input	'Signal' screen	Section 3.2
TONiC readhead [4]	**Ti digital interface** [3]	Digital input	'Select Readhead' screen	Section 2.4
	Ti analogue interface	Analogue input	'Signal' screen	Section 3.2
ATOM readhead	**Ti digital interface** [3]	Digital input	'Select Readhead' screen	Section 2.4
	Ti analogue interface **Ri analogue interface** **No interface** [2]	Analogue input	'Signal' screen	Section 3.2

NOTES:

- The ADTpro-100 has standard pin-out 15-way D-type inputs and outputs, see section 7.
- The CAL line must be connected for the ADTpro-100 to function. The CAL line is not connected on the output side (not connected to the controller).
- For readheads with alternative pin-outs or connectors, adaptor cables are required. The most common adaptor cable sets are listed in the *ADTpro-100 Advanced Diagnostic Tool* data sheet (Renishaw part no. L-9518-0078). Contact your local Renishaw representative for more information.

1 The battery pack requires 8 × AA batteries (the batteries are not included).

2 Readhead with standard pin-out 15-way D-type connector.

3 Ti10KD and Ti20KD interfaces are not compatible with the ADTpro-100.

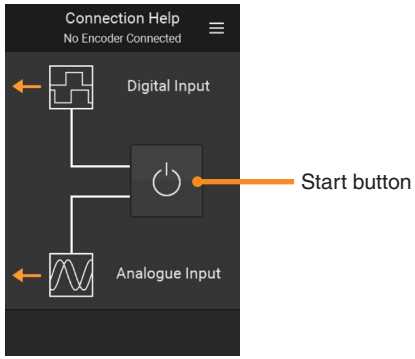
4 TONiC readheads with standard pin-out 15-way D-type connector or an Ri analogue interface are connected in the same way as the TONiC with a Ti analogue interface.

2.3.1 Connection Help

If no encoder system is connected, or the encoder is connected to the wrong port, the connection help screen will be displayed, indicating which port to use. The Start button will be grey (section 2.3).

Once an encoder is connected press the Start button. The button will turn green and either the ‘Signal’ or ‘Select Readhead’ screen will be displayed, depending on which encoder system is connected. See section 2.3 for details on connecting the encoder system and default screens.

If no encoder system is detected the Start button will turn green then flash red.



2.4 Selecting a readhead type

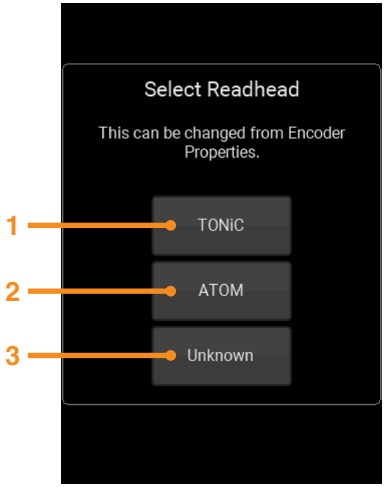
For encoder systems using a Ti digital interface [1]

The ‘Select Readhead’ screen will be displayed when a system with a Ti digital interface is connected as the ADTpro-100 cannot determine which type of readhead is connected.

Select the readhead type. If the readhead type cannot be determined ‘Unknown’ should be selected and reduced functionality will be available. Once a readhead type is selected the ADTpro-100 will automatically display the ‘Signal’ screen.

NOTES:

- The power to the readhead will be cycled when the readhead selection is changed.
- The readhead type can also be changed from the ‘Encoder Properties’ screen in the menu (section 3.1).
- It is important that the correct readhead type is selected to ensure correct operation of the calibration routine.



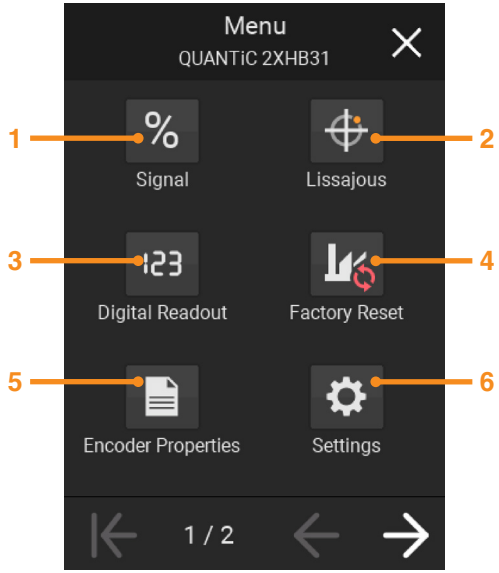
1. TONiC readhead 
2. ATOM readhead 
3. Unknown readhead

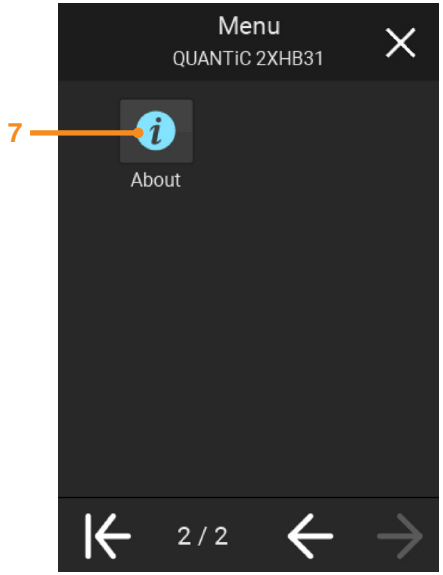
[1] Ti10KD and Ti20KD interfaces are not compatible with the ADTpro-100.

3. Operating the ADTpro-100

3.1 Menu screen

The ‘Menu’ screen allows navigation to other screens on the ADTpro-100. The available options depend on the readhead or interface connected. It can be accessed by pressing the menu icon which appears in the top right corner of most screens.



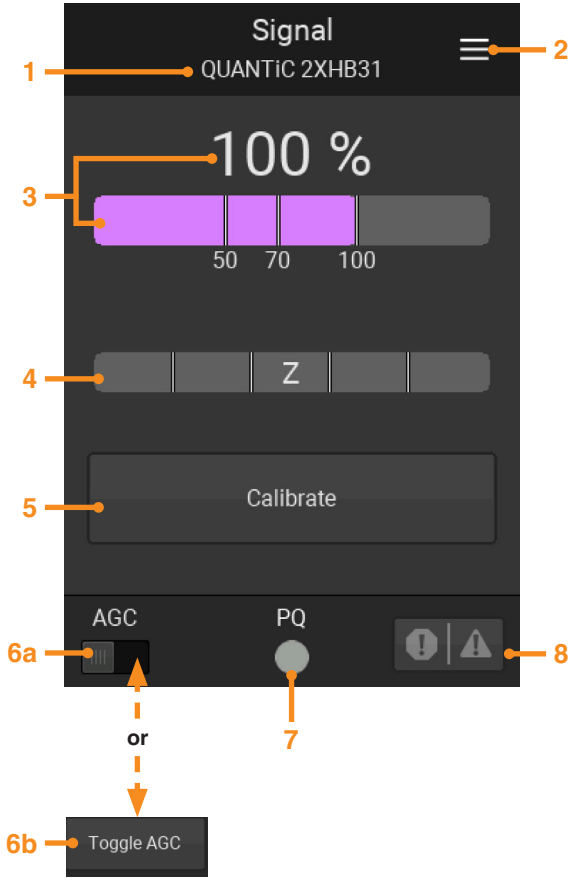


1. **Signal** (section 3.2)
   Default screen displaying signal strength, reference mark phasing and calibration
2. **Lissajous** (section 3.7)
   (Not available with a Ti digital interface)
3. **Digital Readout** (section 3.8)
   (Not available with a Ti digital interface)
4. **Factory reset** (section 3.9)
   Resets the readhead to the settings it had when it left the factory.
   (Not available with ATOM and a Ti digital interface)
5. **Encoder properties**
   Display information about the connected system.
   Ti digital systems only: Allows selection of the readhead type, see section 2.4.
6. **Settings**
   Select language
7. **About**
   ADTpro-100 information and legal notifications

3.2 Signal screen

The ‘Signal’ screen is used to aid system set-up and optimisation, and to initiate calibration.

NOTE: The functionality of the ‘Signal’ screen will depend upon the type of readhead and interface connected.



1. Interface or readhead type and serial number.

   For QUANTiC, VIONiC, and ATOM DX systems: When the readhead is first switched on (out of box), or after factory defaults have been restored, the readhead will be in ‘Installation Mode’. An orange bar saying ‘Installation Mode’ will be displayed.

2. Opens the ‘Menu’ screen, see section 3.1
3. Signal strength indication, shown on a purple bar and as a percentage
   - The signal bar remains purple at all signal amplitudes regardless of Automatic Gain Control (AGC) status
4. Reference mark phasing indication (section 3.4)
5. Calibration initiation (section 3.3)
6. Automatic Gain Control (AGC) switching (section 3.5)
   a. Most encoder systems: AGC switching and display AGC status
   b. Ti digital interfaces: Toggle only (AGC status not shown)

   NOTE: AGC is disabled in ‘Installation Mode’ (QUANTiC VIONiC and ATOM DX only) and cannot be switched on.
7. P and Q limits
   (Not available with ATOM or ATOM DX systems)
8. Alarms and warnings (section 3.6)
   (Not available with TONiC or ATOM analogue systems)

NOTE: QUANTiC encoder system screen shown.

3.3 Calibration

Calibration is an essential operation that completes readhead set-up, with the optimum incremental and reference mark signal settings stored in the readhead's non-volatile memory.

NOTES:

- If using a Ti or Ri interface **DO NOT** use the button on the interface to initiate calibration.
- The signal strength must be greater than 70% to initiate calibration.
- Clean the scale and readhead window before calibration.
- When realigning the readhead, reinstalling the system or in the case of continued calibration failure, factory defaults should be restored prior to recalibration.

For ATOM with a Ti digital interface

When using an ATOM readhead with a Ti digital interface the ADTpro-100 will only toggle calibration, it cannot display the calibration status. The calibration LED on the readhead, along with the relevant system installation guide, should be used to assist calibration. The installation guides can be found at **www.renishaw.com/atomdownloads**. If 'Unknown' readhead is selected when the Ti digital is connected (see section 2.4) the ADTpro-100 will behave as if an ATOM readhead is connected and only toggle the calibration status.

1. To initiate calibration, press the Calibrate button, 'Toggling Calibration' will briefly appear before the 'Signal' screen is displayed.
2. Move the axis back and forth across the reference mark to complete the calibration procedure, no instructions will be shown on the screen. If the readhead LED is visible it should be used to ensure calibration is completed. Refer to the relevant ATOM installation guide for the LED sequence.

For all other supported readheads and interface combinations

1. To initiate calibration, press the Calibrate button, 'Toggling Calibration' will briefly appear before the calibration instructions are displayed.
2. Follow the instructions on the screen to calibrate the incremental signals.

   QUANTiC, VIONiC and ATOM DX systems: If the ADTpro-100 remains on the incremental calibration screen after moving the axis press 'Help'. Follow the instructions in the 'Help' window and, if required, exit calibration and repeat system installation and calibration.

   TONiC systems only: The ADTpro-100 does not automatically move to the reference mark calibration screen once the incremental calibration is complete, the 'Next' button must be pressed to proceed. If the 'Next' button is not pressed and the readhead is moved back and forth past the reference mark the system will complete both the incremental and reference mark calibration and display the calibration status on the screen. Pressing 'Finish' will return to the 'Signal' screen.

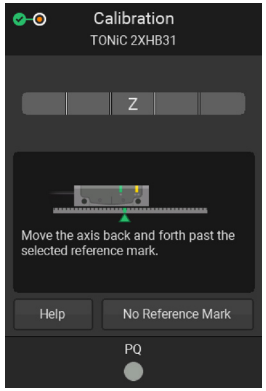
3. Follow the instructions on the screen to calibrate the reference mark. If the system does not have a reference mark, select 'No Reference Mark'.

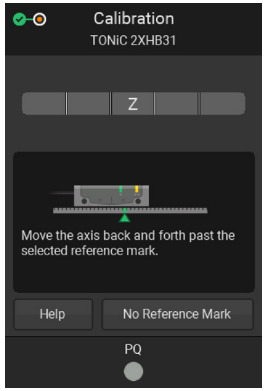
4. Once the reference mark calibration is complete the calibration status will be displayed on the screen.

5. Press ‘Finish’ to return to the ‘Signal’ screen.

   If the ADTpro-100 remains on the reference mark calibration screen after moving the axis back and forth over the reference mark press ‘Help’. Follow the instructions in the ‘Help’ window and, if required, exit calibration and repeat system installation and calibration. In the case of repeated calibration failure restore factory defaults, see section 3.9, before recalibrating the system.

NOTE: If calibration is exited before completion the system will not store the calibration data and the calibration process will need to be repeated.





3.4 Reference mark phasing

The reference mark phasing is displayed as a coloured bar; the length and colour of the bar indicate the phasing of the last reference mark passed. The bar flashes brightly as the reference mark is passed then fades, retaining the colour of the last reference mark.

Well phased reference mark; no action required.

Poorly phased reference mark; recalibration recommended (section 3.4).

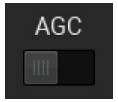
Incorrectly phased reference mark; recalibrate the system (section 3.4).

3.5 Automatic Gain Control (AGC)

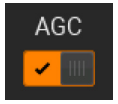
AGC adjusts the gain of the readhead to help maintain optimum signal size.

The AGC switch allows the user to enable or disable the AGC and view the current state of AGC. Ensure the system has been calibrated before switching on AGC.

QUANTiC, VIONiC and ATOM DX systems: AGC is switched off when the readhead is in 'Installation Mode' and the AGC switch is disabled.



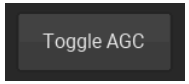
AGC off



AGC on

Encoder systems using a Ti digital interface:

For Ti digital interfaces the AGC can only be toggled, the AGC status is not available.



The LED on the readhead, can be used to confirm the AGC status. The system can be calibrated regardless of the AGC status and the AGC status will be maintained after calibration.

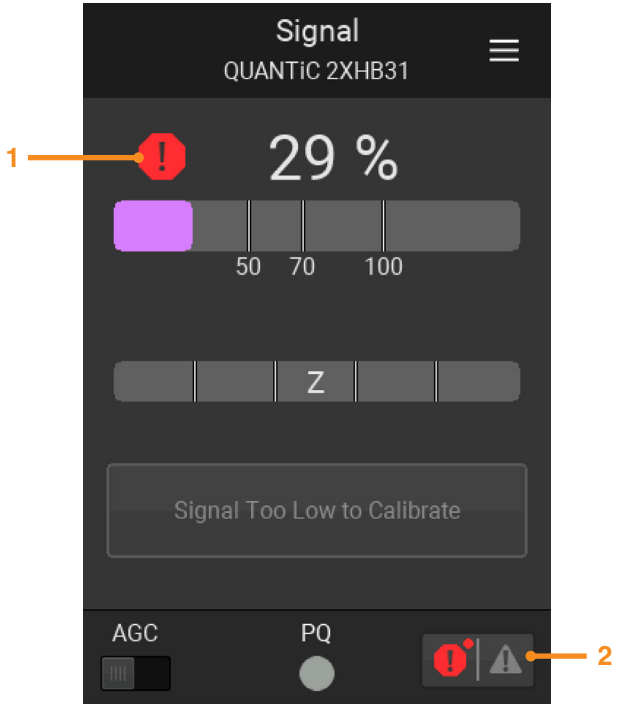
NOTE: DO NOT use the button on the Ti interface to toggle the AGC.

3.6 Alarms and warnings

Alarms and warnings, collectively known as errors, are displayed on the ‘Signal’ screen while they are active and are also recorded in the error log.

NOTE: TONiC and ATOM readheads will only show errors on the ADTpro-100 when connected to a Ti digital interface

3.6.1 Alarm and warning indications



1. Whilst the system is in error a red alarm symbol, or orange warning triangle, will be displayed next to the signal strength.
2. Whilst the system is in error the red alarm symbol, or orange warning triangle, in the bottom bar will be highlighted.
    - If the cause of the error remains, this symbol will remain highlighted, even if the error is cleared, see section 3.6.2.
    - A red dot indicates that there is an alarm or warning in the error log that has not been viewed. Press the button to open the error log, see section 3.6.2.

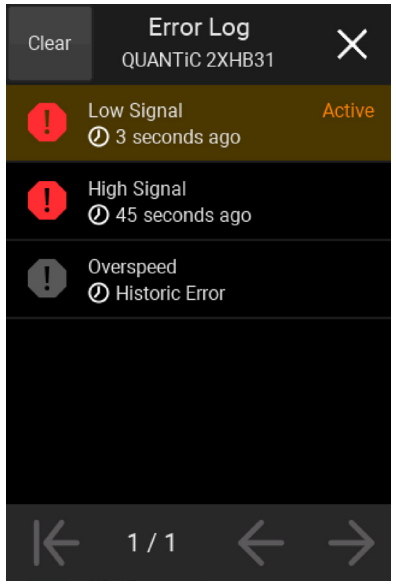
3.6.2 Error log

To enter the Error Log select the alarm and warnings icon on the bottom bar, see section 3.6.1.

The error log contains the alarms and warnings reported by the encoder system, including the type of error and the time that it was first observed by the ADTpro-100.

The ‘Clear’ button removes all errors from the log including Historic Errors. Active errors will remain.

Press the ‘X’ button to close the Error Log.



NOTES:

- The error log holds up to 3 pages of alarms. Once the error log is full, the oldest error in the list will be removed when another error is detected.
- Some errors will take priority over others, for example, whilst a low signal error is present overspeed errors will not be shown in the log.
- For VIONiC, QUANTiC, ATOM DX the highest priority error is preserved in readhead memory and will be displayed as a ‘Historic Error’.
- For QUANTiC analogue and ATOM DX [1] only, errors which are still being reported by the readhead are highlighted as ‘Active Errors’ these cannot be cleared until resolved.

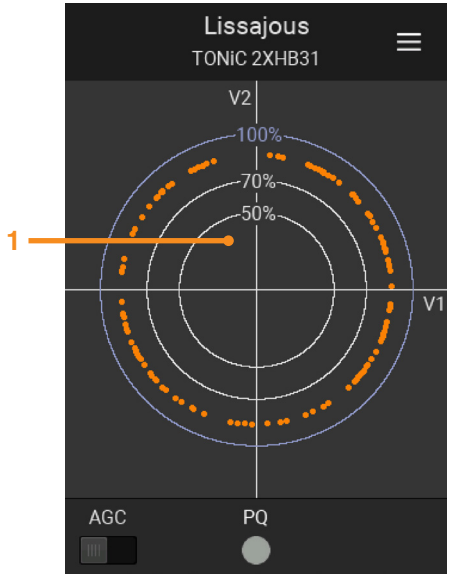
[1] Older ATOM DX readheads may not display Active Errors.

3.7 Lissajous

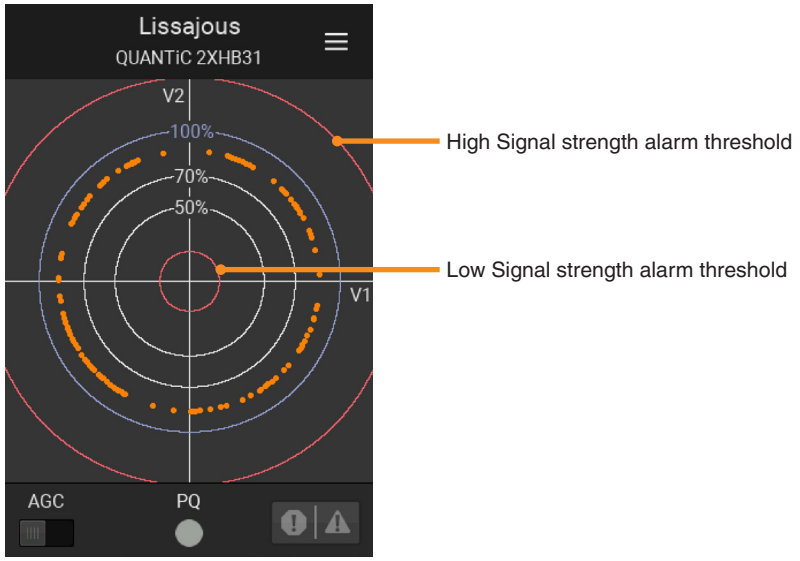
The ‘Lissajous’ screen can be used to confirm the quality of the setup.

NOTE: The Lissajous screen is not available for encoder systems using a Ti digital interface.

VIONiC, QUANTiC and ATOM DX will show red rings indicating the Low Signal strength and High Signal strength alarm threshold.



1. Lissajous indicator

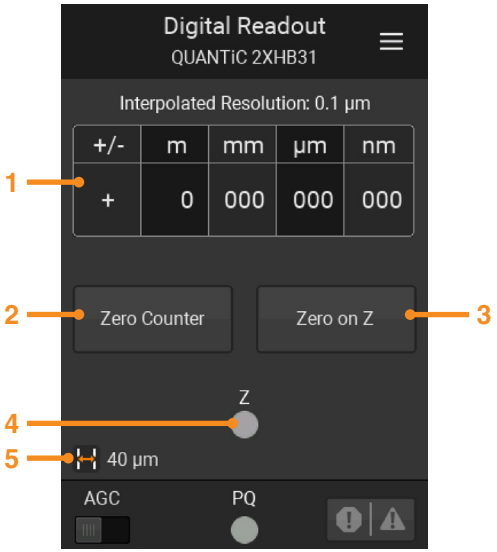


3.8 Digital Readout (DRO)

The ‘Digital Readout’ (DRO) screen is used to provide position information from the encoder. When entering the DRO screen the encoder position will automatically be set to 0.

NOTES:

- The DRO screen is not available for enocder systems using a Ti digital interface.
- The DRO count may not agree exactly with the count registered by the controller. The DRO counter is based on calculated position rather than actual count.



1. Digital Readout (DRO)
2. Zero the DRO count at the current position
3. Zero the DRO count when it passes the next reference mark
4. Reference mark indication

   NOTE: A yellow flash indicates the presence of a reference mark, not the phasing. For reference mark phasing see section 3.4.

5. Scale pitch

3.9 Factory Reset

When reinstalling the system, or in the case of calibration failure, the readhead should be restored to factory default settings to ensure correct system set-up.

To restore factory defaults, click on the factory symbol and follow the instructions on the screen.

For ATOM and TONiC the power to the readhead will be cycled when factory defaults are restored.

Once factory defaults have been restored, repeat the readhead set-up and calibration procedure as detailed in the relevant installation guide

NOTE: 'Factory Reset' is not available on the ADTpro-100 for an ATOM with Ti digital interface. Refer to the relevant ATOM installation guide for details on how to restore factory defaults.

QUANTiC, VIONiC and ATOM DX readheads: Once factory defaults have been restored the readhead will enter 'Installation Mode', see section 3.2.

4. System updates

Periodically new ADTpro-100 firmware may become available to add new features or to fix an unexpected behavior.

This is achieved by connecting the ADTpro-100 to a PC running the ADT View software via a USB connection.

Ensure that the latest version of ADT View is being used. This is available for free from the Renishaw website **www.renishaw.com/adt**.

Please refer to the *ADT View software* user guide (Renishaw part no. M-6195-9413) for details on the update process.

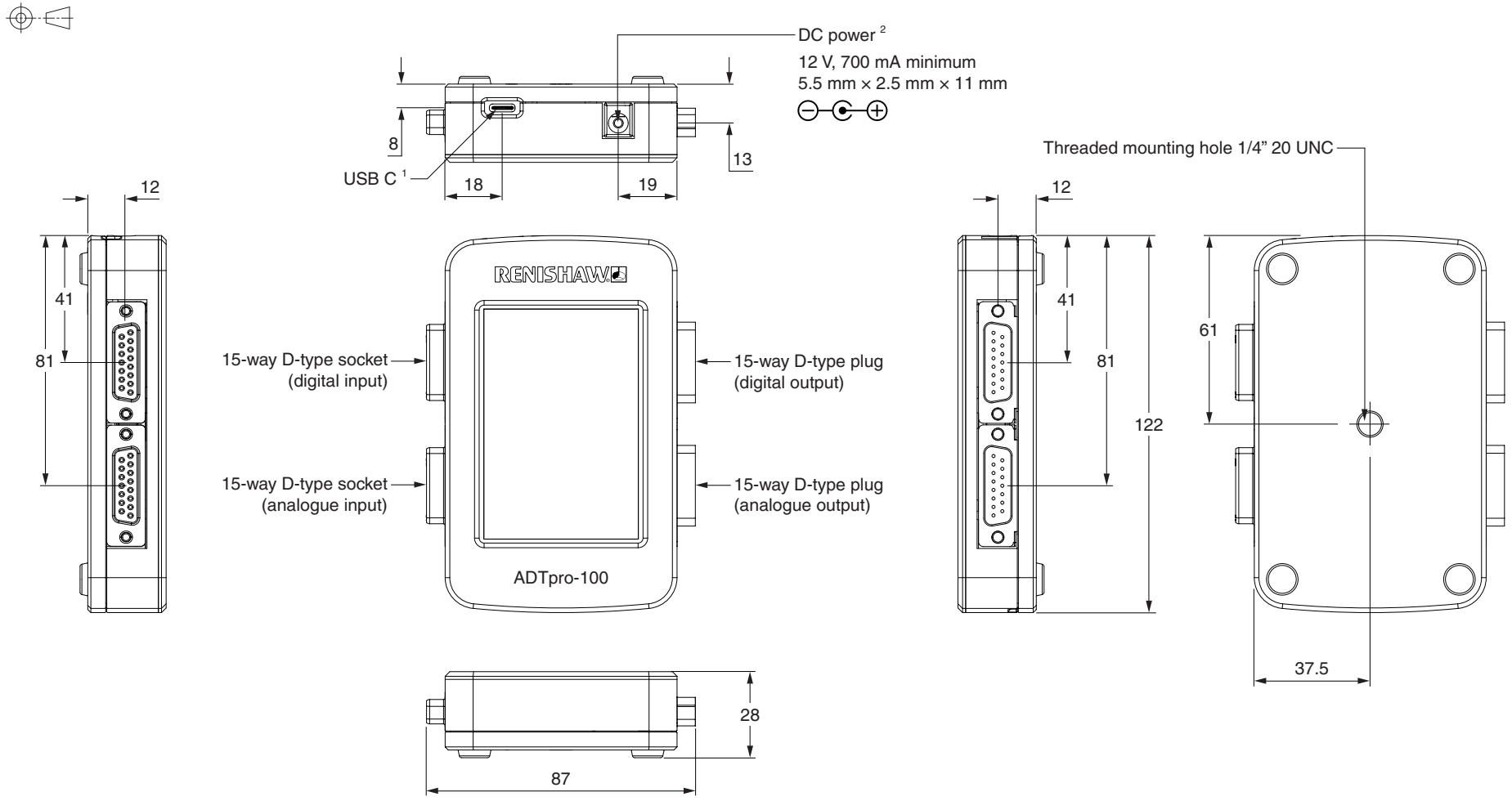
5. Troubleshooting

Problem	Cause	Solution
The ADTpro-100 does not power up	No power from the supply	Replace batteries or try a different power source [1]
The ADTpro-100 turns off during use	The battery power supply is low	Replace the batteries
The in-line encoder signal does not work correctly	Power supply issues to the ADTpro-100	Replace the batteries or try a different power source [1]
The ADTpro-100 was working but has stopped responding or there is an unexpected behaviour	The ADTpro-100 has received an unexpected input	Disconnect the readhead (and controller) remove the power supply to the ADTpro-100. Wait 10 seconds and reconnect
The ADTpro-100 powers up but does not recognise a readhead	Faulty connection	Check connections
	Faulty encoder or interface	Try a different encoder to eliminate this possibility
	The encoder is connected to the wrong input port	Connect to the other port
	The encoder connected is not supported	See section 2.2 for supported encoder systems
Functionality different to expected	Different version of firmware installed on the ADTpro-100 compared to the user guide	Update the firmware, following the instructions shown in section 4 or download the user guide that matches the firmware.
	The incorrect readhead selected when selecting the readhead type	Select the 'Encoder properties' screen from the main menu to change the readhead type or cycle power to the ADTpro-100 and select the correct readhead
	The selected readhead has reduced functionality	Some readhead and interface combinations have reduced functionality. See relevant sections for further details.
The ADTpro-100 screen doesn't power up	Power supply failure	Connect to ADT View to confirm if the ADTpro-100 is functioning. If ADTpro-100 is not functioning change power supply. [1]
	Flat batteries in the battery pack	Connect to ADT View to confirm if the ADTpro-100 is functioning. If ADTpro-100 is not functioning change batteries. [1]
	ADTpro-100 screen failure	Connect to ADT View to confirm if the ADTpro-100 is functioning [1]
When the readhead is powered off it seems to take a long time to reconnect.	This is normal behavior for some readheads and my take up to 3 seconds to reconnect.	Nothing to be done as it is normal behavior.

[1] The ADTpro-100 can only be powered from the DC jack and not via the controller or USB port.

6. ADTpro-100 installation drawing

Dimensions and tolerances in mm



1 The USB port is for connecting the ADTpro-100 to a PC for use with ADT View software only. The ADTpro-100 cannot be powered via USB.

2 Power from a mains power supply or battery pack.

7. ADTpro-100 pin-out

Digital

Function	Signal		Encoder input/output [1] (15-way D-type)
Power	5 V		7, 8
	0 V		2, 9
Incremental	A	+	14
		–	6
	B	+	13
		–	5
Reference mark	Z	+	12
		–	4
Limits [2]	P		11
	Q		10
Alarm	E	–	3
Calibrate [3]	CAL		1
Shield	Outer shield		Case

Analogue

Function	Signal		Encoder input/output [1] (15-way D-type)
Power	5 V		4, 5
	0 V		12, 13
Incremental (analogue input)	Cosine	V_1+	9
		V_1-	1
	Sine	V_2+	10
		V_2-	2
Reference mark	V_0+		3
	V_0-		11
Limits [2]	V_p		7
	V_q		8
Setup [4]	V_x		6
Calibrate [3]	CAL		14
Shield	Outer shield		Case

NOTES:

- Cables need to be high quality screened cables to prevent interference from external sources.
- High quality connectors should be used to prevent premature wear of the 15-way connectors on the ADTpro-100. In cases where repeated connection and disconnection is likely, port savers may be advisable.

1 ADTpro-100 is powered from DC power jack only.

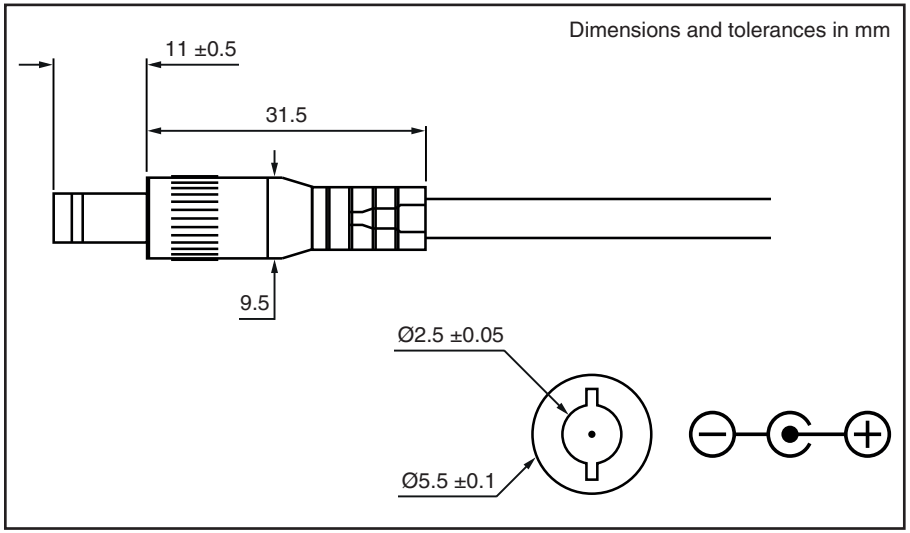
2 ATOM and ATOM DX readheads do not have limits.

3 The CAL line must be connected for the ADTpro-100 to function. The CAL line is not connected on the output side (not connected to the controller).

4 The V_x line must be connected for the ADTpro-100 to function. The V_x line is not connected on the output side (not connected to the controller).

8. ADTpro-100 general specifications

Power supply		12 V, 1000 mA via power socket 700 mA minimum 5.5 mm (OD) × 2.5 mm (ID) × 11 mm (length) 
Temperature	Storage	–20 °C to + 70 °C
	Operating	0 °C to + 55 °C
Humidity		95% relative humidity (non-condensing) to IEC 60068-2-78
Sealing		IP20
Shock	Operating	500 m/s², 11 ms, ½ sine , 3 axes
Mass		260 g
USB cable		USB C IF certified cables ≤ 2 m should be used.



8.1 Power supply safety instructions:

Basic safety precautions should always be followed.

DANGER: To reduce the risk of electric shock read all the instructions before using this power supply. Always unplug this power supply from the mains socket immediately after using.

WARNING: To reduce risk of burns, fire, electric shock or injury to persons or animals:

1. Use this power supply only for its intended use.
2. Do not use outdoors.
3. Do not allow to be used as a toy.
4. Use only attachments recommended by the manufacturer.
5. Never operate this power supply if it has a damaged cord or plug, if it has been dropped or damaged or if it has fallen into water.
6. Never drop or insert an object into any openings.
7. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
8. The power supply should be used near to a convenient and easily accessible mains socket.
9. Do not use the screw mount in areas of high vibration.

9. ADTpro-100 kit contents

Two different ADTpro-100 kits are available, A-6647-0100 [1] (ADTpro-100, mains power supply and battery pack) and A-6647-0103 (ADTpro-100 and battery pack).

ADTpro-100

Mains power supply (12 V, 1000 mA - 700 mA minimum) [2]

Battery pack

Powered by 8 × AA batteries (batteries not included)

[1] Only available in Australia, China, Canada, Europe (EEA & EFTA), Israel, New Zealand, Switzerland, Turkey, UK, and the US.

[2] The mains power supply is not included in A-6647-0103.

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+44 (0) 1453 524524 uk@renishaw.com

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