Data sheet
L-9518-0078-01-B

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ADTpro-100
Advanced Diagnostic Tool

The ADTpro-100 is a handheld, standalone encoder diagnostic tool that operates without additional set-up equipment. It features an integral colour touch screen, providing comprehensive, real-time encoder information without requiring connection to a computer. The tool assists in system setup and planned maintenance to help minimise unscheduled machine downtime and can be used across the full range of Renishaw incremental analogue and digital optical encoders.

The ADTpro-100:

- Requires no computer or additional set-up equipment to display comprehensive real-time encoder information.
- Is easy and intuitive to use with plug-and-play functionality to aid system setup and calibration.
- Interfaces with the optional ADT View computer software, which allows encoder data to be saved as a record of the system setup and performance. ADT View can also be used to update the ADTpro-100 firmware.
- Is suitable for use in secure working environments.
- Can be powered either by a mains power supply or a portable AA battery pack.

The ADTpro-100 is ideal for aiding system optimisation and diagnostics, particularly for installations when the readhead LED is not visible. It can be used standalone or in-line, connected between the readhead and the controller as part of the control loop.

Compatible readheads

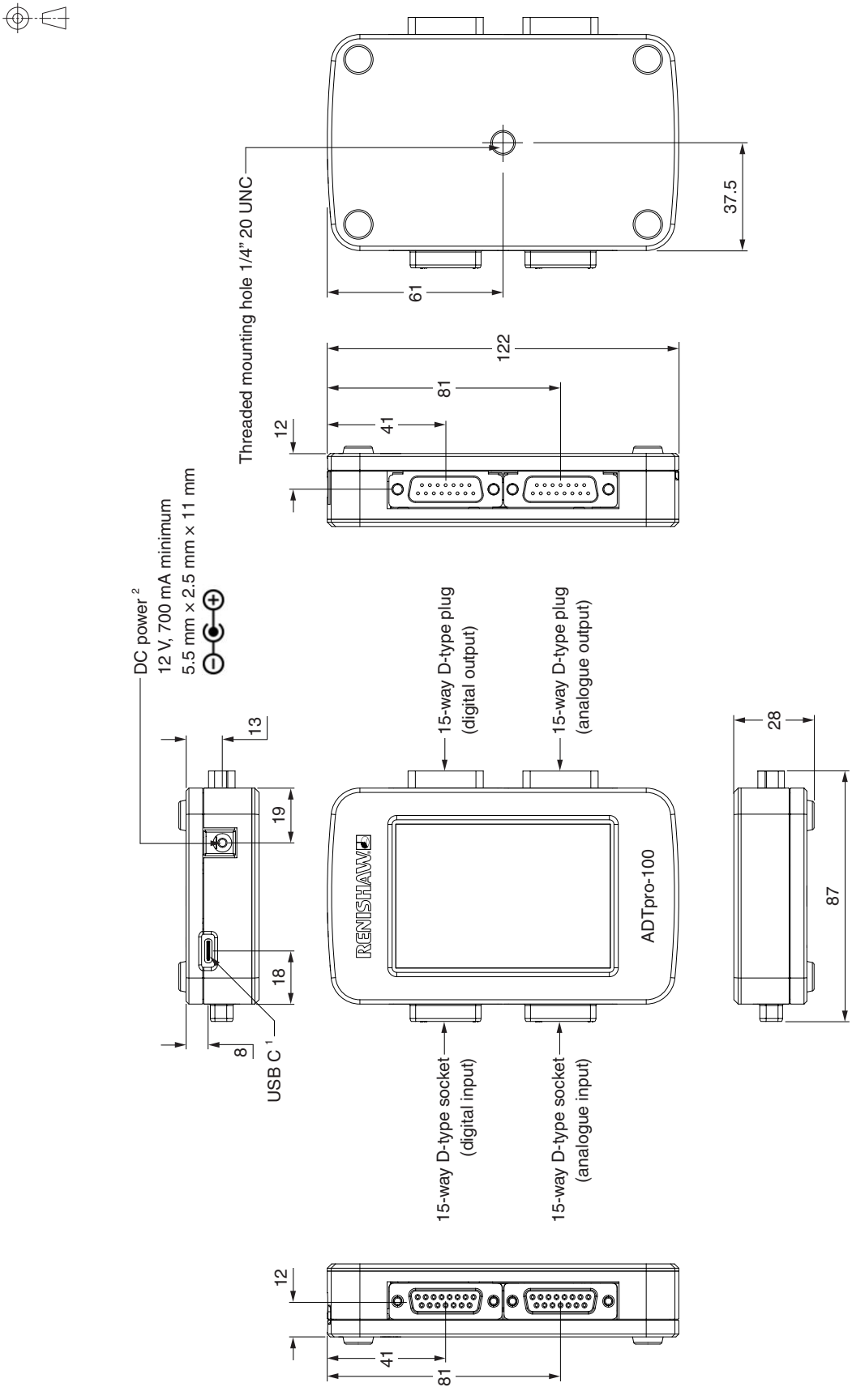
	QUANTiC	VIONiC	TONiC
			
Output	Analogue 1 Vpp Digital resolutions from 10 µm to 50 nm direct from readhead	Digital resolutions from 5 µm to 2.5 nm direct from readhead	Analogue 1 Vpp Digital resolutions from 5 µm to 1 nm from an interface
Recommended interfaces [1]	N/A	N/A	Ti analogue Ti digital
Readhead size (length × width × height)	35 mm x 13.5 mm x 10 mm	35 mm x 13.5 mm x 10 mm	35 mm x 13.5 mm x 10 mm
Pitch	40 µm	20 µm	20 µm
Sub-Divisional Error (typical)	Analogue: < ±120 nm Digital: < ±80 nm	< ±15 nm	±30 nm

	ATOM	ATOM DX
		
Output	Analogue 1 Vpp Digital resolutions from 10 µm to 2 nm from an interface	Digital resolutions from 10 µm to 5 nm direct from readhead
Recommended interfaces	Ti analogue Ti digital Ri analogue No interface	N/A
Readhead size (length × width × height)	Cabled variant: 20.5 × 12.7 × 7.85	Cabled variant: 20.5 × 12.7 × 10.85 Top exit variant: 20.5 × 12.7 × 7.85
Pitch	20 µm or 40 µm	20 µm or 40 µm
Sub-Divisional Error (typical)	20 µm version: < ±75 nm 40 µm version: < ±120 nm	20 µm version: < ±75 nm 40 µm version: < ±120 nm

[1] ADTpro-100 also works with TONiC with either a standard pin-out 15-way D-type connector without an interface or an Ri analogue interface.

ADTpro-100 dimension drawing

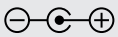
Dimensions and tolerances in mm

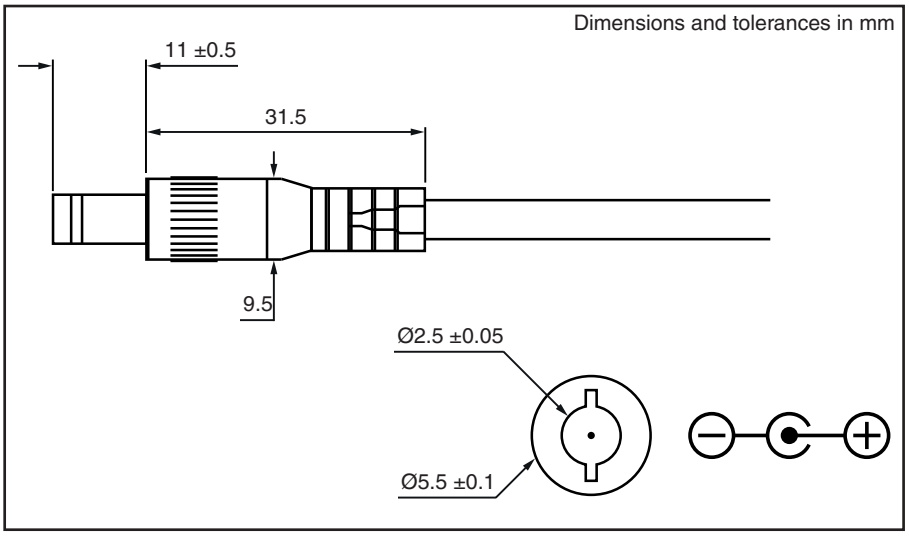


[1] The USB port is for connecting the ADTpro-100 to a PC for use with ADT View software only. The ADTpro-100 cannot be powered via USB.

[2] Power from a mains power supply or battery pack.

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		500 m/s², 11 ms, ½ sine , 3 axes
Mass		260 g



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
Set-up [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).

ADTpro-100 and accessory part numbers

Part description	Part number	Contents	Product image
ADTpro-100 kit	A-6647-0100 [1]	ADTpro-100 12 V power supply Mains adaptors AA battery pack [2]	
ADTpro-100 kit	A-6647-0103	ADTpro-100 AA battery pack [2] (No mains power supply)	
ADT View software [3]	Free to download from www.renishaw.com/adt	-	

Power supply safety approvals

Certification	Standard
UL	UL60950-1, UL62368-1
	ANSI/AAMI ES60601-1
EN	EN60950-1, EN62368-1
	EN60601-1
CB	IEC60950-1, IEC62368-1
	IEC60601-1
CSA	CSA C22.2 No. 60601
CCC	China Compulsary Certification, GB4943
AU/NZ	AU/NZ 60950.1
CE	Meets all applicable directives
UKCA	Meets all applicable legislation

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

2 Requires 8 AA batteries. Batteries not supplied.

3 Minimum software version 4.0.0.0.

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Adaptor cables

Adaptor cables enable readheads with different terminations to be connected to the 15-way D-type input of the ADTpro-100.

Adaptor kits include two cables. One to enable the readhead to be connected to the ADTpro-100. The other, if required, to enable the ADTpro-100 to be connected in-line to the controller

Readhead termination [1]	Readhead supplied connector/pin-out	Adaptor kit part number
A	9-way D-type	A-6195-0102
J	14-way JST	A-6195-2073 (Digital only)
K	10-way JST	A-6195-2074
H	15-way D-type (alternative pin-out)	A-6195-0103 (Digital only) A-6647-0102 (Analogue only)
X	12-way circular	A-6195-0104

[1] Determined from readhead nomenclature. Refer to relevant readhead series data sheet for full readhead nomenclatures.

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