ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

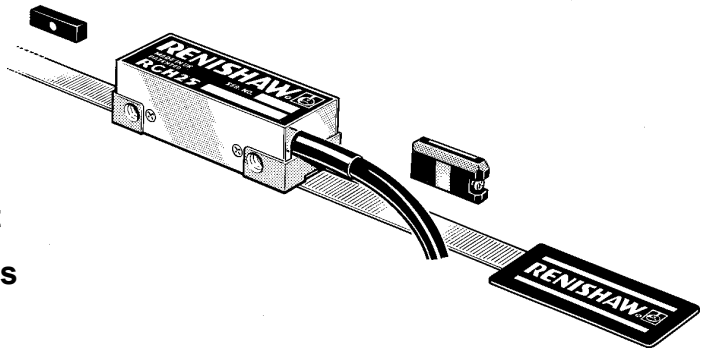
Expert team | Trust guarantee | 100% satisfaction

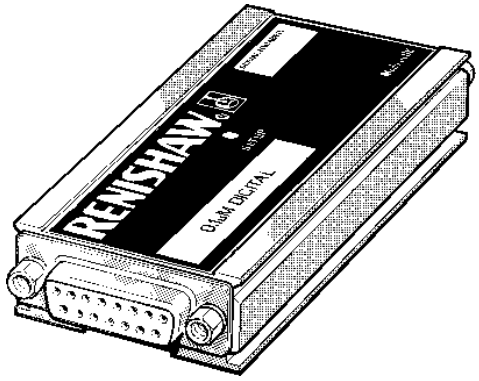
All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Renishaw RGB25X00R00* at our website: ***Click HERE***

RGH25 series - digital and analogue readhead system

- **New! 50nm resolution option**
- **Ultra-compact RGH25 readhead**
  - **Low mass**
- **Interpolation by RGB25 interface unit**
  - **Digital and analogue output options**
  - **Resolutions from 5µm to 0.05µm**
  - **Integral set-up LED**
- **Uses RGS-S self-adhesive scale**





Readhead	
RGH25 - common readhead	
Interface units	
Digital range	Analogue range
RGB25D - 5µm resolution	**RGB25B - 1Vpp differential**
RGB25X - 1µm resolution	**RGB25C - 12µA differential**
RGB25Z - 0.5µm resolution	
RGB25Y - 0.1µm resolution	
RGB25H - 0.05µm resolution	

Renishaw's RG2 linear encoder system is a non-contact optical encoder designed for position feedback solutions. The system uses a common reflective tape scale scanned by a readhead chosen from a range of options offering industry standard digital square wave or analogue sinusoidal output signal formats. Renishaw's unique patented optical scheme is used in the RGH22, RGH24 and RGH25 readhead series and gives proven performance benefits together with high tolerance to scale contamination.

RGH25 is an ideal feedback solution wherever precision controlled movement is required. The ultra-compact size and low mass of the RGH25 readhead makes the system ideal for size critical applications. The RGB25 interface units offer a wide selection of output configurations and feature an integral set-up LED for quick and easy installation.

Common applications include semiconductor manufacturing and inspection, coordinate measuring and layout machines, height gauges, electronic assembly and test, linear motors, pre-press printing and a variety of custom linear motion solutions.

NOTE: A vacuum compatible version (RGH25UHV) of the RGH25 readhead is available, refer to Data Sheet part number L-9517-0169.

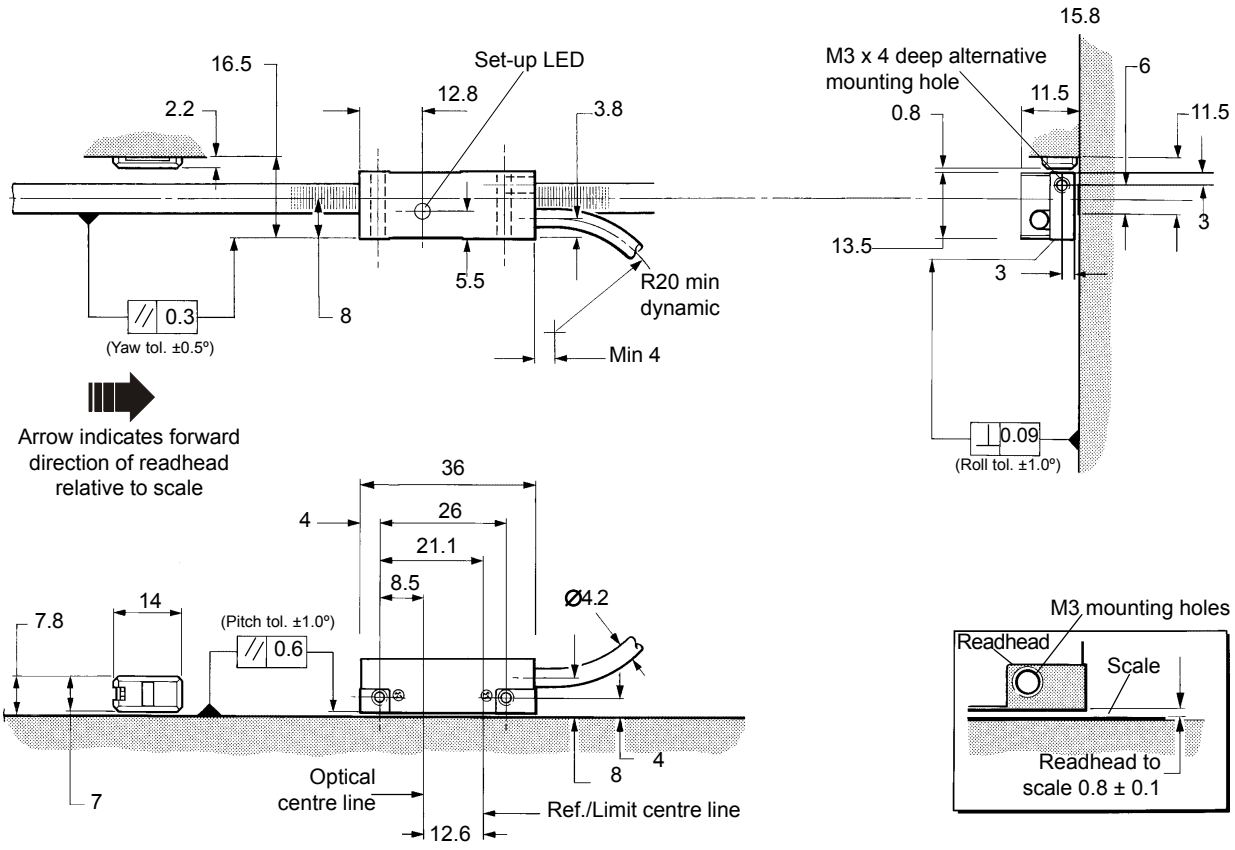
RENISHAW®

DATA SHEET

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

RGH25 readhead

General outline and dimensions.
Dimensions and tolerances in mm

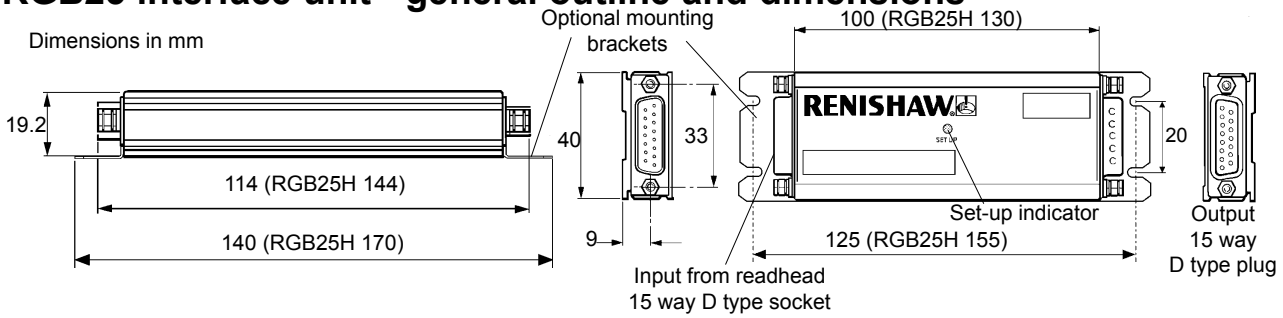


RGH25 readhead - operating and electrical specifications

Temperature (system)	Storage -20ºC to +70ºC Operating 0ºC to +55ºC
Humidity (system)	10 - 90% RH non-condensing
Sealing (system)	IP40
Acceleration (system)	operating 30g
Shock non-operating	100g 11ms, ½ sine
Vibration operating	10g 55 to 2000Hz as per IEC 68-2-6
Weight	Readhead 9g Cable 34g/m
EMC compliance (system)	BS EN 50081-2 BS EN 50082-2 BS EN 55011
Cable	1.5m ∅4.2mm integral double shielded cable as standard. Flex life >20 x 10^6 cycles at 20mm bend radius
Termination to RGB25	15 way D type plug

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

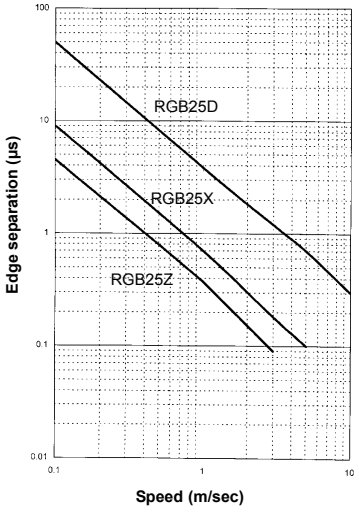
RGB25 interface unit - general outline and dimensions



Operating and electrical specifications

Power supply	5V ±5%	120mA (typical) 150mA (RGB25Y option 00) 300mA (RGB25Y options 08, 12, 20, 30) 190mA (RGB25H option 00) 340mA (RGB25H options 08, 12, 20, 30)

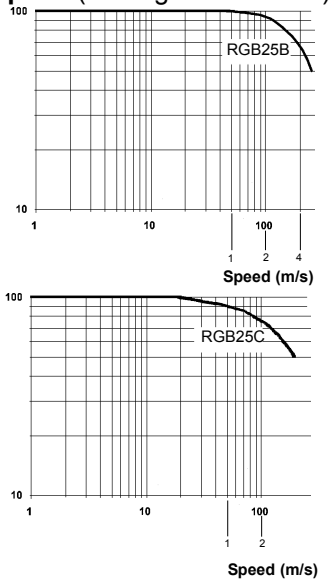
Edge separation (Digital interfaces)



0.1µm resolution (Y) and 0.05µm resolution (H) interfaces have a variety of different clocked (limited frequency) outputs to choose from. Depending on the clock frequency, each option has a different maximum speed and associated minimum recommended counter clock frequency (see accompanying table).

Head type	Maximum speed (m/s)		Minimum recommended counter clock frequency (MHz)
D X Z	10.0 5.0 3.0		(Encoder velocity (m/s) / Resolution (µm)) x4 safety factor
Y/H option	**Y**	**H**	
08	0.4	0.2	8
12	0.5	0.25	12
20	1.0	0.5	20
30	1.25	0.6	30
00	0.7	0.35	40

Speed (Analogue interfaces)

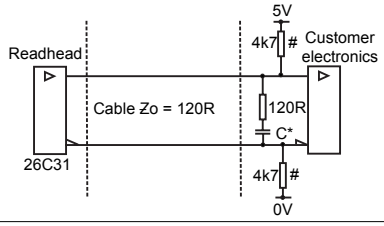


Weight	95g (RGB25H 120g)
Input connector	15 way D type socket
Output connector	15 way D type plug

Recommended signal terminations

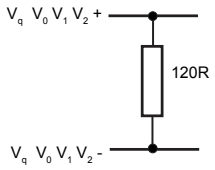
Digital interfaces - type RGB25D, X, Z, Y, H

Cable length	C
<25m	4n7F
>25m	10nF



* Optional power saving capacitor
#Only required on alarm channel E for fail safe operation
Standard RS422A line receiver circuitry

Analogue termination network - type RGB25B only



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

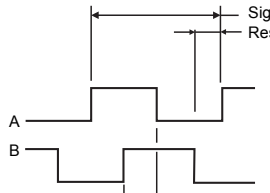
RGH25 series - digital and analogue system

Output specifications

Digital output signals - type RGB25D, X, Z, Y, H

Form - Square wave differential line driver to EIA RS422

Incremental 2 channels A and B in quadrature (90º phase shifted)



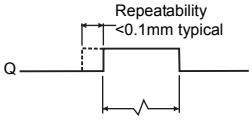
Model	P(µm)	S(µm)
RGB25D	20	5
RGB25X	4	1
RGB25Z	2	0.5
RGB25Y	0.4	0.1
RGB25H	0.2	0.05

Reference



Synchronised pulse Z, duration as resolution S. Repeatability of position (uni-directional) maintained within ±10ºC from installation temperature and for speed <250mm/s.

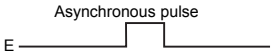
Limit



Asynchronous pulse Q

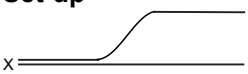
NOTE RGH25 readheads and RGB25 digital interfaces are available with reference mark **or** limit switch detection. Select output option at order.

Alarm



Alarm asserted for signal amplitude <15%. For RGB25Y and RGB25H only - alarm asserted when signal amplitude <45%

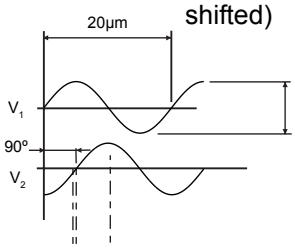
Set-up



Analogue output signals

Type RGB25B

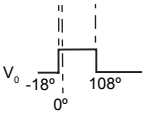
Incremental 2 channels V_1 and V_2 differential sinusoids in quadrature (90º phase shifted)



0.6 - 1.2Vpp with green LED indication and 120R termination

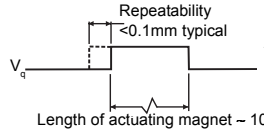
Inverse signal not shown for clarity

Reference



Differential pulse V_0 - 18º to 108º. Duration 126º (electrical) Repeatability of position (uni-directional) maintained within ±10ºC from installation temperature and for speed <250mm/s

Limit



Asynchronous pulse V_q

Set-up

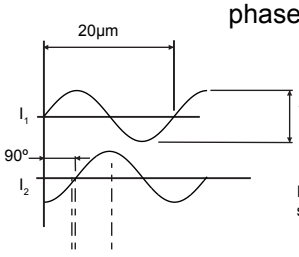


5V = good
0V = adjust

LED signal
external output

Type RGB25C

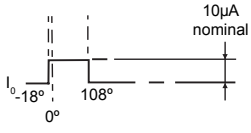
Incremental 2 channels I_1 and I_2 differential sinusoids in quadrature (90º phase shifted)



7 -16µA

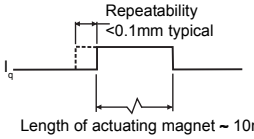
Inverse signal not shown for clarity

Reference



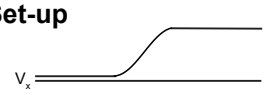
Differential pulse I_0 - 18º to 108º. Duration 126º (electrical) Repeatability of position (uni-directional) maintained within ±10ºC from installation temperature and for speed <250mm/s

Limit



Asynchronous pulse I_q

Set-up



5V = good
0V = adjust

LED signal
external output

Renishaw plc,
Encoder Products Division,
New Mills, Wotton-under-Edge,
Gloucestershire, GL12 8JR,
United Kingdom
Telephone: +44 (0)1453 524524
[07000 RENISHAW]
Fax: +44 (0)1453 524901
email: genenq@renishaw.com
Internet: http://www.renishaw.com

USA
Renishaw Inc,
Tel +1 847 843 3666
Fax +1 847 843 1744

Japan
Renishaw KK,
Tel +81 3 5332 6021
Fax +81 3 5332 6025

Germany
Renishaw GmbH,
Tel +49 7127 9810
Fax +49 7127 88237

France
Renishaw S.A.,
Tel +33 1 64 61 84 84
Fax +33 1 64 61 65 26

Italy
Renishaw S.p.A.,
Tel +39 011 9 66 10 52
Fax +39 011 9 66 40 83

Spain
Renishaw Iberica S.A.
Tel +34 93 478 21 31
Fax +34 93 478 16 08

Switzerland
Renishaw A.G.,
Tel +41 55 410 66 66
Fax +41 55 410 66 69

Hong Kong
Renishaw (Hong Kong) Ltd.,
Tel +852 2753 0638
Fax +852 2756 8786

Brazil
Renishaw Latino Americana Ltda.,
Tel +55 11 7295 2866
Fax +55 11 7295 1641

Renishaw's Representative Offices
Australia, Melbourne
Tel +61 3 9553 8267 Fax +61 3 9552 6738
China, Beijing
Tel +86 10 641 07993 Fax +86 10 641 07992
Shanghai,
Tel +86 21 6353 4897 Fax +86 21 6353 4881
Indonesia, Jakarta
Tel +62 21 428 70153 Fax +62 21 424 3934
Singapore
Tel +65 438 2779 Fax +65 438 2780
Taiwan
Tel +886 4 2513665 Fax +886 4 2513621

Renishaw Liaison Offices
India, Bangalore
Tel +91 80 509 5419 Fax +91 80 509 5421
South Korea, Seoul
Tel +82 2 565 6878 Fax +82 2 565 6879

© 1998 - 2000 Renishaw plc *Renishaw reserves the right to change specifications without notice* Printed in England 3m 0300 Part No. L-9517-0168-03

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP