

RLI20-P Panasonic interface



This data sheet contains an overview and specification of the Renishaw RLI20-P Panasonic interface.

The RLI20-P provides an interface between an RLE laser encoder system and a Panasonic controller (MINAS A5-series). It accepts differential analogue 1Vpp sine/cosine signals. The output is presented in RS485 format and as an incremental position reading.

When used with a double pass plane mirror interferometer system (PMI) (fundamental period of sinusoids is nominally 158 nm), the RLI20-P interpolates the position data and scales it to be 1 nm/LSB. If used with a single pass retroreflector system (RRI) (nominal fundamental period of sinusoids is 316 nm), the scale would be 2 nm/LSB.

The RLI20-P is suitable for single or dual axis laser encoder applications, with each axis scaled for the individual laser wavelength.

The system architecture consists of:

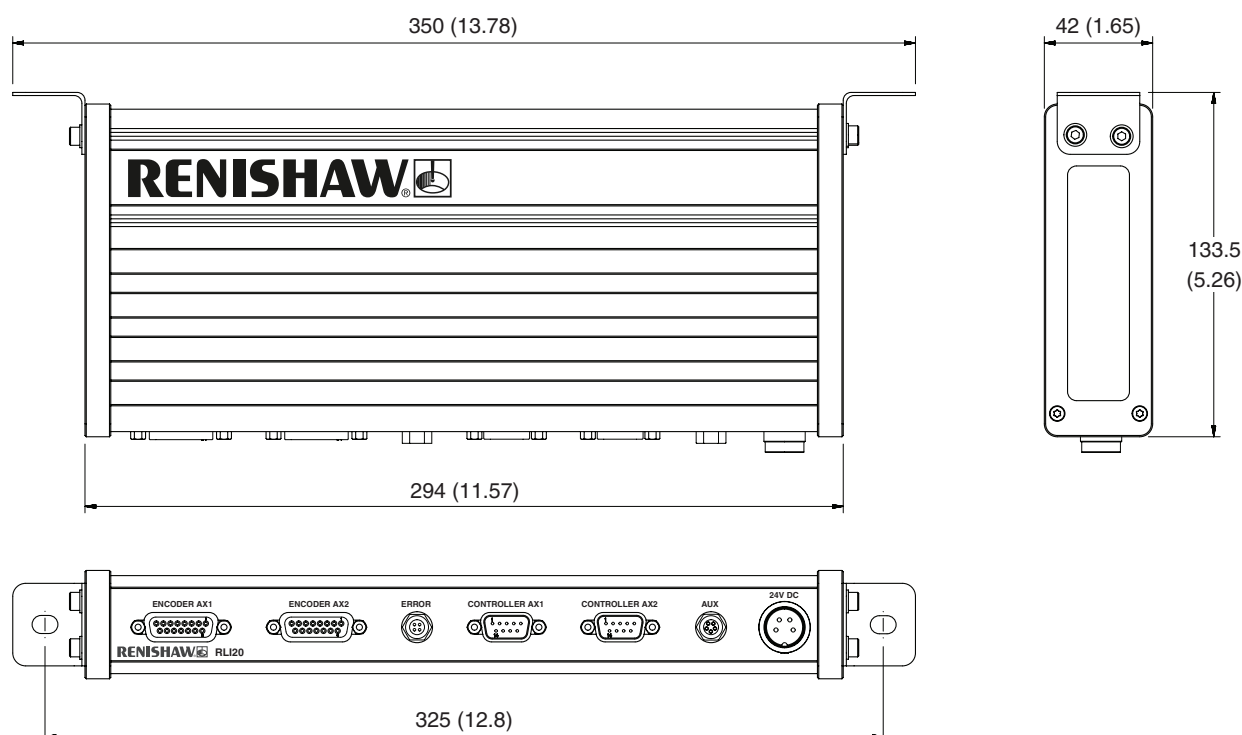
- 2 input channels, which take analogue quadrature from the Renishaw laser encoder system
- A high speed interpolator that converts input to position readings and formats for Panasonic controllers
- 2 RS485 output channels, an error line and the LED status indicator

RLI20-P performance specification

		Retro Reflector - RRI	Plane mirror - PMI
LSB resolution		2 nm	1 nm
Maximum Velocity (Panasonic interface is limited to 0.4 m/s)		2 m/s	1 m/s
Maximum data rate	Controller position update rate	25 kHz	
	Internal position data update rate	100 MHz	
Positional noise contribution (RMS)		2 nm	1 nm
SDE contribution	Velocity < 50 mm/s (PMI)	< ±1 nm	< ±0.5 nm
	Velocity < 100 mm/s (RRI)		
	Velocity > 50 mm/s (PMI) and < 1 m/s (PMI)	< ±4 nm	< ±2 nm
	Velocity > 100 mm/s (RRI) and < 2 m/s (RRI)		

RLI20-P dimensions

Dimensions in mm (inches)



General:

RLI20-P is intended to be mounted in an electrical control cabinet or similar environment. It is constructed with IP20 protection.

100 mm connector/cable clearance is required from the front face of the RLI20-P.

The RLI20-P connector kit is available to order.
Part number: A-9926-0204.

Fixing:

Supplied with fixing kit:

- 4 off M4 x 5 cap head screws
- 4 off 4 mm plain washers
- 2 off mount brackets

It ensures that earthing is achieved directly through the brackets.

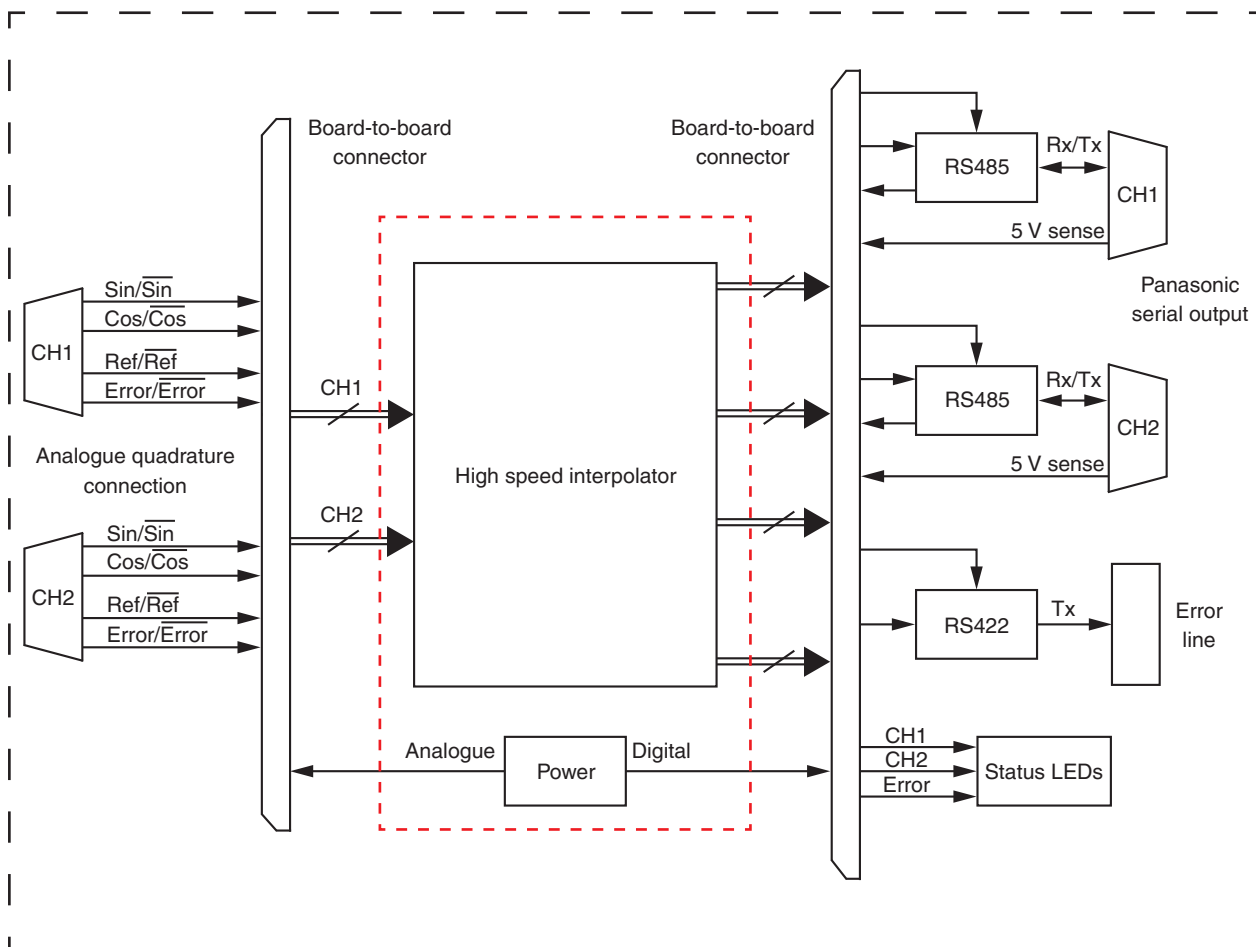
System compatibility

Input	Analogue quadrature sine/cosine, 1 Vpp		
Output	2.5 Mbps RS485, compatible with Panasonic MINAS A5 series controllers		
Error output	RS422		
Power supply	Power	3 W	
	Voltage	24 ±5 V	

Environmental requirements

Pressure	Normal atmospheric pressure (650 mbar - 1150 mbar)		
Humidity	0 - 95% RH (non-condensing)		
Temperature	Storage	-20 °C to +70 °C	
	Operating	+10 °C to +40 °C	

Block diagram of the system architecture



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