# 55 CE

# $A^{P}_{AQ-LR}/A^{P}_{AQ-LC}$

# Multirange 2-wire DIN Rail Temperature Transmitters

APAQ-LR and APAQ-LC are two multirange 2-wire temperature transmitters for DIN rail mounting.

APAQ-LR is used for Pt100 input, and APAQ-LC for different thermocouple inputs.

Designed for highest reliability and costefficiently manufactured, the APAQ-L transmitters combine attractive pricing with high quality and excellent industrial performance.

#### Main features

#### Multirange design

- Reduced inventory costs.
- APAQ-LR for Pt100 input with selectable measurement ranges.
- APAQ-LC for T/Č J, L, T, K, and N inputs with continuous range adjustment.

#### Accurate measurements

• *Temperature linear* 4-20 *mA* output for Pt100 input.

#### Space saving and simple mounting

- Only 17.5 mm / 0.7 inch wide.
- *Quick mounting on DIN rail.*

#### Safety

- Genuine sensor break detection with selectable action, upscale or downscale.
- Excellent EMC performance.

#### High load capacity

• Only 6.5 V voltage drop over the transmitter allows for high loads.

#### **Competitive pricing**

5 year limited warranty



### **Description**

APAQ-LR and APAQ-LC are analog, 2-wire, DIN rail transmitters with selectable ranges for Pt100 and selectable types and ranges for thermocouple input.

The compact housing snaps onto a 35 mm DIN rail and is equipped with rugged terminals for easy and safe wire connections.

APAQ-LR is adjustable for different Pt100 ranges and has a temperature linear 4-20 mA output.

APAQ-LC covers 5 different thermocouple types, is continuously adjustable and has a voltage linear 4-20 mA output.

The selection of measuring ranges and thermocouple types is made with internal solder pads. The fine adjustment is made with potentiometers in the front.

APAQ-LR and APAQ-LC are covered by a 5 year limited warranty.



#### APAQ-LR/LC-

# **Specifications**

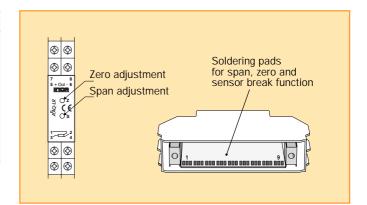
Input	APAQ-LR	APAQ-LC		
Pt100 ( $\alpha$ = 0.00385), 3-wire connection	Adjustable to specific ranges within:			
	-50 to +550 °C / -60 to +1120 °F			
Thermocouples		Selectable, type J, L, T, K and N with		
		ranges within -5 to +55 mV		
Sensor current	~ 1 mA			
Input impedance		>5 MΩ		
Max. sensor wire resistance	15 Ω/wire	500 $Ω$ (total loop)		
Monitoring				
Sensor break detection, selectable	Upscale ~25 mA, downscale ~ 3 mA	Upscale ~25 mA, downscale ~ 3 mA		
Adjustments				
Zero	-50 to +50 °C / -60 to +120 °F	±10 % of span		
Span, selectable	50 to 500 °C / 100 to 1000 °F	10 to 50 mV		
Span, fine adjustment	±10 % (± 5% for 600/800/1000°F)	±10 %		
Output				
Current	4 - 20 mA	4 - 20 mA		
Linearity	Temperature linear	Voltage linear		
Current limitation	~ 25 mA	~ 25 mA		
Permissible load See load diagram	700 Ω @ 24 VDC, 25 mA	700 Ω @ 24 VDC, 25 mA		
Temperature				
Ambient, storage	-20 to +70 °C / -4 to +158°F	-20 to +70 °C / -4 to +158°F		
Ambient, operating	-20 to +70 °C / -4 to +158°F	-20 to +70 °C / -4 to +158°F		
General data				
Response time 10-90%	≤ 0.2 s	≤ 0.2 s		
Humidity (non-condensing)	0 to 95 %RH	0 to 95 %RH		
Power supply, polarity protected				
Supply voltage	6.5 to 32 VDC	6.5 to 32 VDC		
Permissible ripple	4 Vp-p @ 50/60 Hz	4 Vp-p @ 50/60 Hz		
Accuracy		· P. F. Sana a		
Linearity	±0.1 % of span	±0.1 % of span		
Calibration	±0.1 % of span	±0.1 % of span		
Cold Junction Compensation (CJC)		±1.0 °C /±1.8 °F		
Temperature influence	±0.6 % of span/25°C, ±0.7 % of span/50°F	±0.6 % of span/25°C, ±0.7 % of span/50°F		
Temperature influence CJC		±1.25°C/25°C, ±2.5 °F/50°F <sup>2)</sup>		
Sensor wire influence	±0.005 °C/Ω / ±0.009 °F/Ω <sup>1)</sup>	0.5 μV/Ω		
RFI influence,0.15-1000MHz, 10 V or V/m	±0.2 % of span(typical)	±0.2 % of span(typical)		
Supply voltage influence	±0.02 % of span/V	±0.02 % of span/V		
Supply ripple influence, 50/60 Hz, 4 Vp-p	±0.05 % of span	±0.05 % of span		
Long term stability	±0.1 % of span/year	±0.1 % of span/year		
Housing				
Material / Flammability(UL)	PC + Glassfibre / VO	PC + Glassfibre / VO		
Mounting	Rail acc. to DIN EN 50022, 35 mm	Rail acc. to DIN EN 50022, 35 mm		
Connection, single/stranded wires	$\leq 1.5 \text{ mm}^2$ , AWG 16	≤1.5 mm <sup>2</sup> , AWG 16		
Weight	55 g	55 g		
Protection, housing / terminals	IP 20 / IP 20	IP 20 / IP 20		
rotection, nousing / terminals	11 207 IF 20	11 207 IF 20		

<sup>1)</sup>Per wire, with equal resistance <sup>2)</sup>±2.5 °C/25 °C, ±5.0 °F/50 °F for type T

The User Instructions must be read prior to adjustment and/or installation.

## Range adjustments APAQ-LR

Zero adjustment	-50 to +50 °C	-60 to +120 °F	
Span selection	50 °C	100 °F	
	100 °C	200 °F	
	150 °C	300 °F	
	200 °C	400 °F	
	300 °C	600 °F	
	400 °C	800 °F	
	500 °C	1000 °F	



## Range adjustments APAQ-LC

Zero adjustment Adjustable ±10 % of span							
Span selection	mV	T/C J *	T/CL*	T/C T *	Т/СК*	T/C N *	
	10 to 50	186 - 870°C	183 - 855°C	213 - >400°C	246 - 1232°C	319 - >1300°C	
	(no gap)	335 - 1566°F	329 - 1540°F	383 - >720°F	443 - 2218°F	574 - >2340°F	

\*The temperature spans correspond to the mV spans with zero adjustment = 0 % of span

