



## Applications:

The digital panel meter **RISH DPM 196 Hz & F48x96 AK** has been designed for frequency measurement in industrial applications.

Frequency measurement ranges available are 12...199.9 Hz and 12...500 Hz.

## Features:

- **Display range : 0...+1999**
- **Simple configuration**
- **Supply voltage : 230V (50 / 60Hz)**
- **Also available with 24V DC and 110 VAC (50 / 60Hz) Supply Voltage**
- **\*Universal Power Supply :** 1) 45 - 450 V AC/DC ( $\pm 5\%$ )  
2) 45 - 300 V AC/DC ( $\pm 5\%$ )

**\*Only for Model : RISH DPM F48x96 AK**

## Specifications :

### Display

Type	7 segment LED
Colour	Red
Character Height	14 mm
Display Range	max. 1999
Decimal Point	Selectable by jumpers at front side
Overflow Display	"1" , if display > 1999

### Input

Input voltage	80...500V (for 196 HZ) 80...700V (for F48x96Ak)
Measuring range	12...199.9 Hz 12...500 Hz

### RISH DPM 196 Hz

<b>Power supply</b>	3 ranges for power supply are available.	
	Direct voltage DC	: 24 V DC (21...30V) 5.5W approx. (isolated).
	Alternating voltage AC	: 110 V AC (+ 10% / -15%) 5.5W approx. (isolated). : 230 V AC (+ 10% / -15%) 5.5W approx. (isolated).
	Frequency	: 47 – 60 Hz.
<b>Ambient conditions</b>	Operating temperature	: 0 ... 55 °C.
	Storage temperature	: - 25 ... 70 °C.
	Relative Humidity	: max. 85%
<b>Dimensions and Weights</b>	Bezel size	: 96 mm x 96 mm DIN 43 700
	Panel cut-out	: 92 + 0.8 mm x 92 + 0.8 mm
	Overall depth	: 55 mm.
	Weight	: 500 gm. Approx.
<b>Sundry</b>	Connections	: Plug-in screw terminal blocks.

### RISH DPM F48x96 AK

<b>Power supply</b>	3 ranges for power supply are available.	
	Direct voltage DC	: 24 V DC (21...30V) 5.5W approx. (isolated).
	Alternating voltage AC	: 110 V AC (+ 10% / -15%) 5.5W approx. (isolated). : 230 V AC (+ 10% / -15%) 5.5W approx. (isolated).
	Universal	: 1) 45 - 450 V AC/DC ( $\pm 5\%$ ) 2) 45 - 300 V AC/DC ( $\pm 5\%$ )
<b>Ambient conditions</b>	Frequency	: 47 – 60 Hz.
	Operating temperature	: 0 ... +50 °C.
	Storage temperature	: - 20 ... +70 °C.
	Relative Humidity	: max. 85%
<b>Dimensions and Weights</b>	Bezel size	: 96 mm x 48 mm
	Panel cut-out	: 92 F 0.8 mm x 43.5 + 0.6 mm
	Overall depth	: 138 mm.
	Weight	: 500 gm. Approx.
<b>Sundry</b>	Connections	: Plug-in.

### Calibration

Instruments are calibrated at the factory.  
Range adjustment span : Fine adjustment is possible

### Error Limits

Intrinsic Error  $\pm (0.25\% \text{ of max. display} + 5 \text{ digits})$

### Additional Error

Temperature Coefficient <190 ppm / °C  
Zero Point Drift < 0.2 digits / °C

### Environment Conditions

Climatic class Class 2 to VDE / DIN 3540  
Safety class II to IEC 348 / VDE 0411  
Protection class IP 20 to IEC EN 60 529  
front IP 50  
Overvoltage category II  
Device safety According to IEC EN 61 010  
EMC immunity According to DIN EN 61 000-4-1 to 4  
EMC radiated interference According to IEC EN 61326 class B

### Test voltages: (Test duration 2 Sec.)

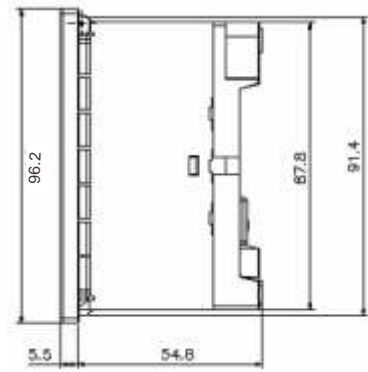
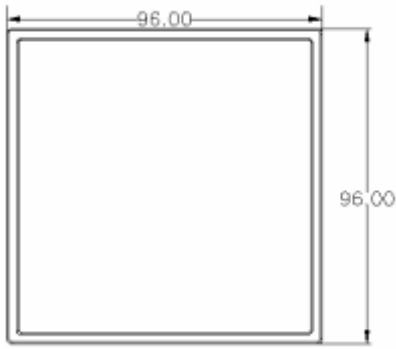
UH (Aux. voltage)	<b>230 / 110V AC 24V DC</b>
Supply – input signal	2 kV 0.5 kV
Supply – housing	2 kV 0.5 kV
Input signal – housing	2 kV 2 kV

### A-D Conversion

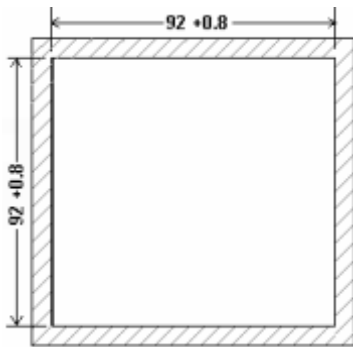
Conversion Method Dual slope  
Integration Time Approx. 100 ms  
Measurements per Second Typically 3 per sec.

## Design & Installation :

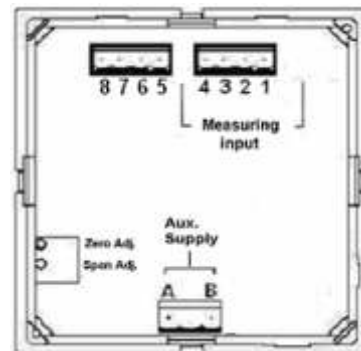
### RISH DPM 196 Hz



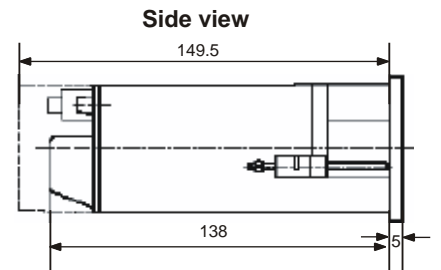
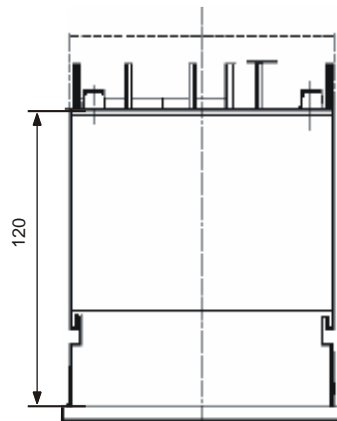
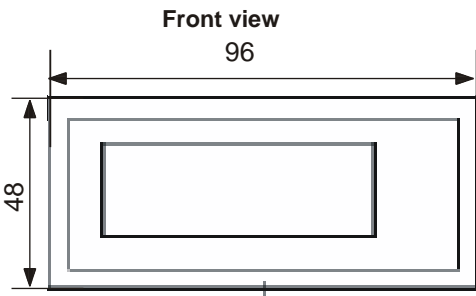
#### Installation cut-out



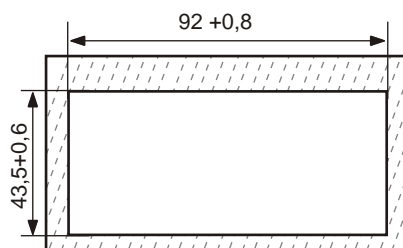
#### Connections



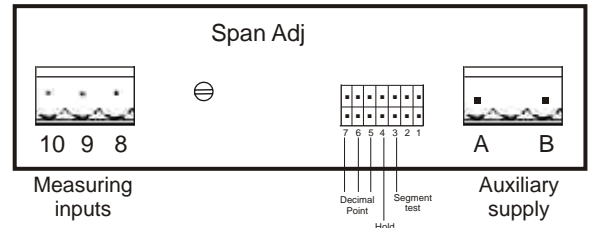
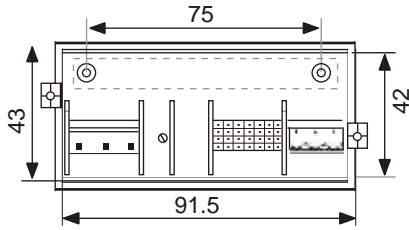
### RISH DPM F48x96 AK



#### Installation Cut-out



## Connections



## Order Details :

### **RISH DPM 196 Hz**

Type	<b>Example1</b> RISH DPM 196 Hz	<b>Example2</b> RISH DPM 196 Hz
Measuring input	12...199.9 Hz	12 ... 500 Hz
Input Voltage	(80...500V)	(80...500V)
Display	0...+1999	0...+500
Display caption	Hz	Hz
Supply voltage	230VAC, 50HZ	110VAC, 50HZ

### **RISH DPM F48x96 AK**

Type	<b>Example1</b> RISH DPM F48x96 AK	<b>Example2</b> RISH DPM F48x96 AK
Measuring input	12...199.9 Hz	12 ... 500 Hz
Input Voltage	(80...700V)	(80...700V)
Display	0...+1999	0...+500
Display caption	Ak	Ak
Supply voltage	45 - 300 V AC/DC (± 5%)	45 - 450 V AC/DC (± 5%)



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