



Process Control Instruments
Temperature Controllers
Programmable Timers
Programmable Counters
Protection Relay
Panel Meters

“ Origin of Company

Aavolate is recently shaped organization of **Elembica Group of Companies**. Our Managing Director **Maheshbhai P Patel** has enormous experience in these field since 1981. Elembica Group has achieved many milestones in his great leadership. We have worked with hundreds of companies, providing a total solution from product supply to system design. Our group of companies has been designated among the pioneer in the field of manufacturing control panels over the decades.





Company Vision, Values

Through market analysis, integrating facility systems, and improving the efficiency of the integrated systems, we are willing to build smart factories for the future in reliable cost. Aavolate also focuses on values which consists to provide consumer reliable products and services. Also updating market through creative thinking. Our company focuses on individual growth as company and also individual growth of our employees.



Innovation

Aavolate Technologies (P) Ltd. is an industrial process control instrument manufacturing company focused on reliable solution for various processes.



Control

Our company is focused on developing hardware and software simultaneously, allowing faster response time in the market. Through our services and products, Aavolate is focused on increasing facility efficiency and reducing costs for our customers.



Efficiency

Aavolate offers automated technologies for smart factories. We provide a total solution from product supply to system design for a faster response to your business needs.

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PROCESS CONTROL INSTRUMENT

8 CHANNEL SCANNER WITH RS-485 MODBUS CONNECTIVITY



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ATS - 980

96 x 96 x 52
92 x 92

ATS - 988T

96 x 96 x 52
92 x 92

Inputs

J / K / PT-100 2Wire or 3Wire (Configurable)

0-10V DC / 4-20mA DC / 0-20mA DC (Configurable)

Range

J (0°C - 400°C), **K** (0°C - 1200°C) ,
PT-100 2Wire or 3Wire (-99.9°C - 400.0°C)

(-999 to 9999)

Output

RS-485 MODBUS Communication (Optional)

Accuracy

±1% of FSD

Supply

100-270V AC (SMPS), 50/60 Hz

8 CHANNEL SCANNER WITH RS-485 MODBUS CONNECTIVITY

Upto 4 Relay Outputs, *Data Logging with Pen Drive compatibility (USB)*



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ATS - 984U

96 x 96 x 52
92 x 92

ATS - 988U

96 x 96 x 52
92 x 92

Inputs

J / K / PT-100 2Wire or 3Wire (Configurable)

J / K / PT-100 2Wire or 3Wire / 0 To 10V DC / 4 To 20mA DC / 0 To 20mA DC (Configurable)

Range

J (0°C to 600°C) **K** (0°C to 1200°C)
PT-100 2Wire or 3Wire
(-99.9°C to 400.0°C, -99.9°C to 400.0°C)

J (0°C - 400°C) , **K** (0°C - 1200°C) , **PT-100 2Wire or 3Wire**
(-99.9°C - 400.0°C)(For Temperature I/P)
(-999 to 9999 For Analog I/P)

Output

- ◆ 4 Relay with grouping facility
- ◆ RS 485 MODBUS Communication (Optional)
- ◆ USB Port with Data logging facility(Optional)

Control Action

ON/OFF

Accuracy

±1% of FSD

Supply

100-250V AC (SMPS), 50/60 Hz



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AFC - 91

96 x 96 x 52
92 x 92

Inputs

4 To 20mA DC / 0 To 10V DC / Pulse (Factory set)

Range

0 To 99999999 For Total Flow
0 To 9999 For Flow Rate

Output

- ◆ 4-20mA DC/0-10V DC Retransmission (Factory Set) (Optional)
- ◆ 24V DC Transmitter Supply@30mA (by default)
- ◆ 1Relay / 2Relay 5A, 230V AC (resistive load) (1 Relay by default)
- ◆ RS-485 MODBUS Communication (Optional)

Accuracy

±1% of FSD

Supply

100-270V AC (SMPS), 50/60 Hz or 24V DC (Factory set)

LOAD CELL INDICATOR / CONTROLLER



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AWC-91

96 x 96 x 100
92 x 92

Input

0-20mV DC/0-30mV DC from load cell (Factory set)

Range

0 to 9999

Output

- ◆ 1Relay & 2Relay (1 Relay by default)
- ◆ 10V DC@20mA DC Load cell supply (by default)
- ◆ 0-10V DC /4-20mA DC Retransmission (Any One Factory Set) (Optional)
- ◆ RS-485 MODBUS (Optional)

Accuracy

±1% of FSD

Supply

230V AC ± 10% , 50Hz

DUAL PROCESS INDICATOR



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ATS-922

96 x 96x 52
92 x 92

Input 1 & 2

PT-100 3Wire / 4-20mA DC / 0-20mA DC /
0-10V DC (Any two factory set)

-999 to 9999 For Analog I/P,
PT-100 (0.0°C - 400.0°C)

Output

- ◆ 1 Relay / 2 Relay (Optional)
- ◆ 24V DC Transmitter Supply@30mA (Optional)
- ◆ RS-485 Modbus (Optional)

Control Action
Accuracy
Supply

ON-OFF
±1% of FSD
100-270V AC (SMPS), 50/60 Hz



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ATS-924

96 x 96x 52
92 x 92

Input

J / K / PT-100 2Wire or 3Wire (Factory set)
0-10V DC / 4-20mA DC / 0-20mA DC (Configurable).

Range

- ◆ (-999 To 9999 for Analog Input)
- ◆ **J** (0°C to 600°C), **K** (0°C to 1200°C), **PT-100 2Wire or 3Wire**
- ◆ (-99°C TO 400°C, -99.9°C TO 400.0°C) For Temperature Sensor

Output

4 Relay + 2 Retransmission + 24V DC Transmitter @30mA DC

Control Action
Accuracy
Supply

ON-OFF
±1% of FSD
100-270V AC (SMPS), 50/60 Hz

TEMPERATURE HUMIDITY + TEMPERATURE CONTROLLER



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AHC-91 (Humidity Controller)

96 x 96 x 52
92 x 92

AHT-92 (Humidity + Temp. Controller)

96 x 96 x 52
92 x 92

Sensor Range

Humidity Sensor
0.0 to 100.0%

S-1: PT-100 2Wire or 3Wire (RTD) S-2: Humidity Sensor

Output

1stRelay 1C/O, 5A @230V AC (Resistive Load)

**PT-100 2Wire or 3Wire (-50°C to 199.9°C)
Humidity Sensor (0.0 to 100.0%)**

1st Relay for Temperature and 2nd Relay for Humidity.
RS-485 Modbus (Optional)

Control Action Accuracy Supply

ON-OFF
±1% of FSD
100-270V AC (SMPS), 50/60 Hz

ON-OFF
±1% of FSD
100-270V AC (SMPS), 50/60 Hz

9 STAGE PROFILE CONTROLLER



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

APRC-91 (Profile Controller)

96 x 96 x 100
92 x 92

Sensor Range

J/ K/ PT-100 2Wire or 3Wire (Factory Set)

J (0°C to 600°C), **K** (0°C to 1200°C),

PT-100 2Wire or 3Wire
(-99°C to 400°C, 0.0°C to 400.0°C)

Output

2 Relay 1C/O (9 set point), 2nd Relay for Alarm.

Control Action Accuracy Supply

ON-OFF
±1% of FSD
100-270V AC (SMPS), 50/60 Hz

TEMPERATURE

Dual Output PID Controller - FULL FEATURED



MODEL	ATC-92P	ATC-72P	ATC-48P	ATC-92PA
Dimension (HxWxD) mm	96 x 96 x 52	72 x 72 x 85	48 x 48 x 95	96 x 48 x 85
Panel Cutout (mm)	92 x 92	68 x 68	45 x 45	92 x 45
Sensor	J / K / PT-100 2Wire or 3Wire (Configurable)			J / K / PT-100 2Wire or 3Wire (Confi.)
Range	J (0°C to 600°C, 0.0 to 400.0), K (0°C to 1200°C, 0.0 to 500.0°C) PT-100 2Wire or 3Wire (-50°C to 400°C, -50.0°C to 400.0°C)			
Output	2 Output : (SSR parallel to 1Relay) + 1Relay or 1SSR Drive O/P (2 Relay 1C/O 5A,230V AC (resistive load) & SSR Drive O/P 12V DC, 20mA)			
Operating Mode	Heat / Cool / Alarm			
Alarm	High / Inband / Absolute Low / Absolute Outband / Outband / End Alarm/ Low Alarm Outband + Soak Timer			
Control Action	PID / TP / ON-OFF (Configurable)			
Accuracy	±1% of FSD			
Supply	100-270V AC (SMPS), 50/60 Hz			

PID TEMPERATURE CONTROLLER

Economy Range



MODEL	ATC-71P	ATC-71PJ	ATC-41P
Dimension (HxWxD) mm	72 x 72 x 45	72 x 72 x 45	48 x 48 x 70
Panel Cutout (mm)	68 x 68	68 x 68	45 x 45
Sensor	J/ K/ PT-100 2Wire or 3Wire (Factory Set)	J Type	J/ K (Configurable) or PT-100 2Wire or 3Wire (Factory Set)
Range	J (0°C to 400°C or 0°C to 600°C), K (0°C to 1200°C), PT-100 2Wire or 3Wire (0°C to 400°C, -50.0°C to 200.0°C)	J (0°C to 600°C)	J (0°C to 600°C), K (0°C to 999°C), PT-100 (-50.0°C to 200.0°C)
Output	1Relay 1C/O 5A,230V AC (resistive load) & SSR Drive O/P 12V DC,20mA (Parallel to Relay) (1 Set point)		
Control Action	PID/ ON-OFF (Configurable)		
Accuracy	±1% of FSD		
Supply	100-270V AC (SMPS), 50/60 Hz		

DIGITAL TEMPERATURE CONTROLLERS (Fixed Input)



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ATC-91

96 x 96 x 42
92 x 92

ATC-71

72 x 72 x 45
68 x 68

ATC-41

48 x 48 x 70
45 x 45

	ATC-91	ATC-71	ATC-41
Sensor	J/ K/ R/ S / PT-100 2Wire or 3Wire (Factory Set)		J/ K (Configurable) or PT-100 2Wire or 3Wire (Factory Set)
Range	J (0°C to 400°C or 0°C to 600°C), K (0°C to 1200°C), PT-100 2Wire or 3Wire (0°C to 400°C, -50.0°C to 200.0°C)		J (0°C to 600°C), K (0°C to 999°C), PT-100 (-50.0°C to 200.0°C)
Output	1Relay 1C/O 5A, 230V AC (resistive load) or SSR (Factory set)		1Relay 1C/O 5A, 230V AC (resistive load) & SSR Drive O/P 12V DC, 20mA (Parallel to Relay)
Control Action	TP / ON-OFF (Factory Set)		TP/ ON-OFF (Configurable)
Accuracy	±1% of FSD		±1% of FSD
Supply	230V AC ± 10%, 50Hz		100-270V AC (SMPS), 50/60 Hz

8 & 12 CHANNEL SEQUENTIAL TIMER

With Cascading Facility For 8 + 8 Outputs



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AST-94/98 (Sequential Timer)

96 x 96 x 52
92 x 92

AST 912

96 x 96 x 52
92 x 92

Range	99.99 Sec / 999.9 Sec / 99.59 Min / 999.9 Min / 99.59 Hrs / 999.9 Hrs (Configurable)
Output	8Relay/12Relay 1C/O 5A,230V AC (resistive load) or SSR Drive O/P 12V DC, 20mA Output (Any one factory set)
Operating Mode	Delayed ON / Delayed OFF / Cycle Mode (Configurable)
Count Direction	Up / Down (Configurable)
Memory	Yes / No (Configurable)
Reset	Front & Back Both Reset Available
Supply	100-270V AC (SMPS), 50/60 Hz
NOTE	Cascading facility available in AST-98 (8 Relay) Sequential timer up to 1 + 3 parallel SSR output is available on request Cascading facility available on request in AST-94 Sequential Timer

99.99 Sec / 999.9 Sec / 99.59 Min / 999.9 Min / 99.59 Hrs / 999.9 Hrs (Configurable)

8Relay/12Relay 1C/O 5A,230V AC (resistive load) or SSR Drive O/P 12V DC, 20mA Output (Any one factory set)

Delayed ON / Delayed OFF / Cycle Mode (Configurable)

Up / Down (Configurable)

Yes / No (Configurable)

Front & Back Both Reset Available

100-270V AC (SMPS), 50/60 Hz

Cascading facility available in AST-98 (8 Relay) Sequential timer up to 1 + 3 parallel SSR output is available on request
Cascading facility available on request in AST-94 Sequential Timer



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ART-91 (Real Time Clock Timer)

96 x 96 x 52
92 x 92

Range	23:59:59 Hrs / Min / Sec
Output	1Relay 1C/O
Parameters	ON Time / OFF Time (16 Program)
Supply	100-270V AC (SMPS), 50/60 Hz

23:59:59 Hrs / Min / Sec

1Relay 1C/O

ON Time / OFF Time (16 Program)

100-270V AC (SMPS), 50/60 Hz

PROGRAMMABLE TIMER

Universal Timer - 1Relay Output



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

APT-91

96 x 96 x 52
92 x 92

APT-71

72 x 72 x 45
68 x 68

APT-41

48 x 48 x 70
45 x 45

APT - 48D

48 x 48 x 70
45 x 45

Start Pulse

Range

Output

**Program
Count Direction**

Memory

Reset

Supply

Micro Switch / Limit Switch / Proximity (Configurable)

9999 / 999.9 / 99.99 Sec/Min/Hrs (Configurable)

999 / 99.9 / 9.99 Sec/Min/Hrs (Configurable)

1Relay 2C/O 5A, 230V AC(resistive load) or SSR Drive O/P 12V max 20mA DC (Any one factory set)

Delayed ON / Delayed OFF / Cycle Mode (Configurable)

Up / Down (Configurable)

Yes / No (Configurable)

Front & Back Both Reset Available

100-270V AC (SMPS), 50/60 Hz

PROGRAMMABLE TIMER

UNIVERSAL TIMER - 2Relay Output



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

APT-92

96 x 96 x 52
92 x 92

APT-72

72 x 72 x 45
68 x 68

APT-48

48 x 48 x 70
45 x 45

Start Pulse

Range

Output

**Program
Count Direction**

Memory

Reset

Supply

Micro Switch / Limit Switch / Proximity (Configurable)

9999 / 999.9 / 99.99 Sec / Min / Hrs (Configurable)

2Relay 1C/O 5A, 230V AC (resistive load) or SSR Drive O/P 12V DC Output (Any one factory set)

Forward - Reverse Mode / Cyclic Mode / Sequential Mode / Combination Mode (Configurable)

Up / Down (Configurable)

Yes / No (Configurable)

Front & Back Both Reset Available

100-270V AC (SMPS), 50/60 Hz

Time Totalizer



MODEL	ATI-90	ATI-70	ATI-40	ATI-36	ATI-38
Dimension (HxWxD) mm	96 x 96 x 42	72 x 72 x 60	48 x 96 x 26	36 x 72 x 95	38 x 62 x 65
Panel Cutout (mm)	92 x 92	68 X 68	46 x 92	32 x 68	31 x 54
Range	1) 9999.59 hr/min. 2) 9999.59 min/sec 3) 99999.9 sec 4) 999999 sec 5) 9999.99 sec 6) 99999.9 min 7) 999999 min 99999.9 hr 9) 999999 hr (Configurable)				
Input	Micro Switch/ Limit Switch / Proximity Switch / 230V AC (Factory Set)				
Supply	230V AC ± 10%, 50Hz				

DIGITAL PRESETABLE TIMER

Multi range- Thumbwheel Setting



MODEL	AT-91TW	AT-71TW	AT-41TW
Dimension (HxWxD) mm	96 x 96 x 52	72 x 72 x 60	48 x 48 x 102
Panel Cutout (mm)	92 x 92	68 x 68	45 x 45
Range	999 , 99.9, 9.99 Hour / Min / Sec (Configurable)		
Output	1Relay 2C/O 5A,230V AC (resistive load) & SSR Drive O/P 12V max 20mA DC (Any one factory set)		
Operation Mode	Delayed ON / Delayed OFF (Configurable)		
Counting Direction	UP / DOWN (Configurable)		
Memory	YES / NO (Configurable)		
Supply	230V AC ± 10%, 50Hz		100-270V AC/DC (SMPS), 50/60 Hz

COUNTER DIGITAL BATCH COUNTER



MODEL	AC-91B	AC-71B	AC-40B
Dimension (HxWxD) mm	96 x 96 x 42	72 x 72 x 50	48 x 48 x 95
Panel Cutout (mm)	92 x 92	68 x 68	45 x 45
Input	NPN/ PNP Proximity Switch / Micro Switch (Configurable) / 230V AC Pulse (Factory Set)		NPN/ PNP Proximity Switch / Micro Switch / 230V AC Pulse (Factory Set)
Range	Upper display range (0 -999999 Count) Lower display range (0 -9999)		Upper display range (0 -99999 Count) Lower display range (0 -9999)
Output	1Relay+Buzzer / SSR + Buzzer		
Memory	Non-Volatile Memory		
Reset	Auto reset / Manual reset / Back reset		
Supply	230V AC ± 10%, 50Hz		100-270V AC (SMPS), 50/60 Hz

DIGITAL LENGTH COUNTER

With Proximity /Single & Dual Channel Encoder Input



MODEL	AC-91L	AC-71L	AC-41LA	AC-41LD
Dimension (HxWxD) mm	96 x 96 x 42	72 x 72 x 50	48 x 96 x 110	48 x 48 x 95
Panel Cutout (mm)	92 x 92	68 x 68	46 x 92	45 x 45
Input	NPN/PNP Proximity Switch (Configurable) / Encoder (Factory set)			
Range	0-99999.9 / 0-999999 / 0-9999.99 / 0-999.999 Meter (Configurable)		0-9999.9 / 0-99999 / 0-999.99 Meter (Configurable)	
Output	1Relay 1C/O 5A@230V AC (resistive load)			
MPM Range	999.9 MPM			
Diameter	0-9999.99 MM			
Memory	Non-Volatile Memory			
Reset	Auto Reset / Manual reset facility & front and back reset			
Supply	230V AC ± 10%, 50Hz		100-270V AC (SMPS), 50/60 Hz	
Note	In AC-41LD if back reset option is required , then Input would be Proximity Sensor (NPN OR PNP) (Factory Set) RS-485 MODBUS Communication is available as per requirement in 96 X 96 Size (AC - 91L)			

**COUNTER
SPEED / RATIO INDICATOR**



MODEL
Dimension (HxWxD) mm 96 x 96 x 52 / 72 x 72 x 75
Panel Cutout (mm) 92 x 92 / 68 x 68

ARPM-91 / ARPM-71
96 x 96 x 52 / 72 x 72 x 75
92 x 92 / 68 x 68

Start Pulse	NPN/PNP Proximity Switch (Configurable), Proximity Input (Stretch Ratio Indicator)
Range	0 to 9999 or 0 to 999.9 MPM (Factory set), 0 to 9999 RPM
Output	1Relay on RPM/MPM (Factory Set) & Retransmission Output (4-20mA DC / 0-10V DC) (Factory set) (Optional)
Diameter Range	0 to 999.9 MM (Only for MPM / Stretch Ratio MPM)
Accuracy	±1% of FSD
Supply	100-270V AC (SMPS), 50/60 Hz

**PROGRAMMABLE COUNTER
COUNTER + RPM**



MODEL
Dimension (HxWxD) mm 96 x 96 x 42
Panel Cutout (mm) 92 x 92

ACR-71
72 x 72 x 50
68 x 68

Input	NPN/PNP Proximity switch / Micro Switch (Configurable) / 230V AC Pulse(Factory Set)
Range	Upper Display Range: (0-999999 Count) , Lower Display Range: (0-9999 RPM)
Output	1Relay 1C/O 5A, 230V AC (resistive load)
Memory	Non-Volatile Memory
Reset	Auto Reset / Manual Reset / Back Reset
Supply	230V AC ± 10%, 50Hz

COUNTER DIGITAL PROGRAMMABLE COUNTER



MODEL	AC-91P	AC-71P	AC-41PA	AC-41P	AC-91D	AC-71D
Dimension (HxWxD) mm	96 x 96 x 52	72 x 72 x 45	48 x 96 x 120	48 x 48 x 70	96 x 96 x 42	72 x 72 x 60
Panel Cutout (mm)	92 x 92	68 x 68	46 x 92	45 x 45	92 x 92	68 x 68
Sensor	NPN/PNP Proximity Switch / Micro Switch (Configurable) / 230V AC Pulse / Encoder (Factory Set)					
Range	0 - 9999 / 0 - 999.9 Count				0 - 999999 Count	
Output	1Relay 1C/O 5A, 230V AC (resistive load)					
Count Direction	Up / Down (Configurable)					
Memory	Yes / No (Configurable)					
Reset	Auto Reset / Manual Reset / Reset at back					
Supply	230V AC \pm 10%, 50Hz		100-270V AC (SMPS), 50/60 Hz		230V AC \pm 10%, 50Hz	
Note	Dual Set Point, Scale factor & 2 Relay Option Available on customer request in AC-91D & AC-71D					

DIGITAL PRESETABLE COUNTER

With Thumbwheel Setting



MODEL	AC-91TW	AC-71TW
Dimension (HxWxD) mm	96 x 96 x 52	72 x 72 x 85
Panel Cutout (mm)	92 x 92	68 x 68
Input	NPN/PNP Proximity switch / Micro Switch (Configurable) / 230V AC Pulse / Encoder (Factory Set)	
Range	0 To 9999	
Output	1Relay 2C/O 5A, 230V AC (resistive load)	
Operating Mode	Delayed ON/ Delayed OFF (Configurable)	
Count Direction	Up / Down (Configurable)	
Memory	Yes / No (Configurable)	
Speed Selection	Medium(Up to 5000 rpm), Fast(Up to 15000 RPM) (Configurable)	
Supply	100-250V AC (SMPS), 50/60 Hz	

COUNTER DIGITAL RPM INDICATOR



MODEL	ARPМ-90	ARPМ-70	ARPМ-40A	ARPМ-40
Dimension (HxWxD) mm	96 x 96 x 42	72 x 72 x 60	48 x 96 x 26	48 x 48 x 70
Panel Cutout (mm)	92 x 92	68 x 68	46 x 92	45 x 45

Input	NPN/PNP Proximity Switch (Configurable)				
	Range	4 - 5000 RPM			
		Supply	230V AC \pm 10%, 50Hz	100-270V AC (SMPS), 50/60 Hz	

DIGITAL COUNT TOTALISER



MODEL	ACI-90	ACI-70	ACI-40	ACI-36	ACI-38
Dimension (HxWxD) mm	96 x 96 x 42	72 x 72 x 60	48 x 96 x 26	36 x 72 x 95	38 x 62 x 65
Panel Cutout (mm)	92 x 92	68 x 68	46 x 92	32 x 68	31 x 54

Input	NPN/PNP Proximity Switch / Micro Switch (Configurable), 230V AC Pulse / Encoder (Any one factory set)					
	Range	0 To 999999 Count				
		Memory Reset	Non-Volatile Memory Manual Reset, Back Reset (Optional)			
	Supply		230V AC \pm 10%, 50Hz	100-270V AC (SMPS), 50/60 Hz		230V AC \pm 10%, 50Hz

PROTECTION RELAY EARTH LEAKAGE RELAY & EARTH TO NEUTRAL VOLTAGE



MODEL **AEL-91**
 Dimension (HxWxD) mm 96 x 96 x 52
 Panel Cutout (mm) 92 x 92

Input Signal	0 To 10 Voltage AC
Range	00.00 To 10.00 Voltage AC
Output	1 Relay 1 C/O Contact 230V AC, 5A
Accuracy	Class 0.5
Power Supply	100-270V AC (SMPS), 50/60 Hz, Approx 4VA
Note:	RS-485 MODBUS is available in AEL-91 as per request

SINGLE PHASE - CURRENT RELAYS



MODEL	ACC-91	ACC-91D
Dimension (HxWxD) mm	96 x 96 x 52	96 x 96 x 52
Panel Cutout (mm)	92 x 92	92 x 92

Current	5A AC Direct (CT ratio selectable 5/5A to 1600/5A)
Output	1 Relay (NO-C-NC) 5A,230V AC (resistive load)
Tripping Facility	High / Low / Inband / Outband / Absolute Low / Absolute Outband Alarm (Configurable)
Accuracy	Class 0.5
Power Supply	100-270V AC (SMPS), 50/60 Hz, Approx 4VA

PROTECTION RELAY PROTECTION DEVICE - 3 PHASE



MODEL
Dimension (HxWxD) mm 96 x 96 x 52
Panel Cutout (mm) 92 x 92

AMP - 91
96 x 96 x 52
92 x 92

Input Signal	Voltage	3 Ø 4 Wire / 3 Ø 3 Wire			
	Current	50 - 520V AC (L-L) , 30 - 300V AC (L-N)			
Output	1st Relay	10 A, 230V AC, (resistive load)			
	2nd Relay	5A (with simultaneous actuation)			
Tripping Facility	Over Current	Under Current	Short Circuit	Lock Rotor Point	
	Over Voltage	Under Voltage	Phase sequence	Unbalance	
	Over Frequency	Under Frequency	Phase Loss	Neutral Loss	
	Accuracy	Class 1.0			
Power Supply	100 to 270V AC (SMPS), 50/60Hz				
	Note:	AMP-91 is also available in 415V AC ± 10%, 50Hz Power Supply (ON Request) RS-485 MODBUS Communication (Optional) Earth leakage features are available(Optional) External CT 30A,60A,100A Available As per Request			

VOLTAGE MONITOR RELAY

MODEL
Dimension (HxWxD) mm 96 x 96 x 42
Panel Cutout (mm) 92 x 92

AVM - 91
96 x 96 x 42
92 x 92

Input	Voltage	50 to 520V AC (L-L) 30 to 300V AC (L-N)
	Primary	100 to 999 Kv AC (L-L)(Selctable)
Output	1st Relay	5A, 230V AC (Resistance load)
	2nd Relay	(Optional)
Tripping Parameter	◆	Over Voltage / Under Voltage
	◆	Over Frequency / Under Frequency
	◆	Phase Loss / Phase Sequence
	◆	Asymmetry & Neutral Loss
Power Supply	230V AC ±20%, 50Hz	
Note	RS-485 Modbus is Available in AVM - 91	



PANEL METERS

3 PHASE AMPERE METER



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AMA-90D

96 x 96 x 42
92 x 92

AMA-90

96 x 96 x 42
92 x 92

AMA-70

72 x 72 x 42
68 x 68

INPUT

Current

0.5A to 5A

Primary : 5A to 6000 AC CT Selction
Secondary : 5A

0.5A to 5A

Primary : 5 to 10K Ampere (Selectable)
Secondary : 1A/5A (Selectable)

0.5A to 5A

Primary : 5A to 6000 AC CT Selction
Secondary : 5A

Accuracy

Class 0.5

Power Supply

230V AC \pm 10%, 50Hz

Note

RS-485 Modbus Available in AMA-70

3 PHASE VOLT METER



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AMV-90D

96 x 96 x 42
92 x 92

AMV-90

96 x 96 x 42
92 x 92

AMV-70

72 x 72 x 45
68 x 68

Voltage

50 to 520V AC (L-L)

50 to 520V AC (L-L) 30 to 300V AC (L-N)
Primary : 100 to 999Kv AC (L-L)(Selectable)
Secondary : 100 to 520V AC (L-L) (Selectable)

50 to 520V AC (L-L) 30 to 300V AC (L-N)
Primary : 100 to 999Kv AC (L-L)(Selectable)
Secondary : 100 to 520V AC (L-L) (Selectable)

Accuracy

Class 0.5

Power Supply

230V AC \pm 10%, 50Hz

3 PHASE AND 1 PHASE PANEL METER

VAF Meter



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AMF-70

72 x 72 x 45
68 x 68

AMF-90

96 x 96 x 52
92 x 92

AMF-90D

96 x 96 x 52
92 x 92

Input Signal Voltage Current

3Ø 4 Wire / 3Ø 3Wire / 1Ø 2 Wire
30 To 300V AC (L-N) / 50 To 520V AC (L-L)
Primary : 6000A
Secondary : 5A

3Ø 4 Wire / 3Ø 3Wire / 1Ø 2 Wire
30 To 300V AC (L-N) / 50 To 520V AC (L-L)
Primary : 10000A
Secondary : 5A

Parameter

Voltage (L-L)
Voltage (L-N)
Average Current (L1,L2 & L3)
Line Current (L1,L2 & L3)
Phase Sequence
Average Voltage (L-N)
Average Voltage (L-L)
Frequency
Load Hour/No Load Hour
RPM

Voltage (L-L)
Voltage (L-N)
Average Current (L1,L2 & L3)
Line Current (L1,L2 & L3)
Phase Sequence
Average Voltage (L-N),
Average Voltage (L-L),
Frequency,
Load Hour,
RPM

Accuracy Power Supply

Class 0.5
230V AC 50Hz

Class 0.5
100 To 270V AC(SMPS), 50/60Hz

DC PANEL METER

VOLT / AMP Meter



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

ADA-90/ADV-90

96 x 96 x 42
92 x 92

ADA-70/ADV-70

72 x 72 x 60
68 x 68

ADA-40/ADV-40

48 x 96 x 65
46 x 92

ADA-40A/ADV40A

48 x 48 x 70
45 x 45

AVW-40A

48 x 96 x 26
46 x 92

Ampere (DC)

0 to 9999 Ampere DC Through 75mV DC external shunt

Voltage (DC)

19.99V DC / 49.99V DC / 99.99V DC / 199.9V DC / 750V DC (Factory set)

Watt (DC)

750V DC/1000V DC
0000 - 7499 KW DC

Accuracy

± 1% Of Full Range ±1 Count

Power Supply

230V AC ±10%, 50Hz

100 - 270V AC , 50/60 Hz

Note

0 to 5A DC / 10A DC / 20A DC Direct through shunt is available in model ADA-90, 70, 40A

SINGLE PHASE AC PANEL METER VOLT / AMP Meter



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AMA-901/AMV-901

96 x 96 x 42
92 x 92

AMA-701/AMV-701

72 x 72 x 35
68 x 68

AMA-401/AMV-401

48 x 96 x 26
46 x 92

AMA-401A/AMV-401A

48 x 48 x 46
45 x 45

Ampere (AC)
CT Ratio
Volatge (AC)

5A AC Direct
Primary: 5/5A to 4000/5A AC
30 to 500V AC

Primary: 5/5A to 2000/5A AC

Accuracy
Power Supply

Class 0.5
230V AC ±10%, 50Hz

SINGLE PHASE AC PANEL METER VOLT + AMP meter



MODEL

Dimension (HxWxD) mm
Panel Cutout (mm)

AVA-90

96 x 96 x 42
92 x 92

AVA-70

72 x 72 x 60
68 x 68

AVA-90A

48 x 96 x 65
46 x 92

AVA-40

48 x 48 x 46
45 x 45

Current Input
Voltage Input

Primary: 5/5A to 2000/5A AC
30 to 500V AC

30.0A AC Direct
30 to 500V AC

Accuracy
Power Supply

Class 0.5
230V AC ±10%, 50Hz

Note

30A AC Direct CT Available at back side

DIN RAIL PROTECTION RELAY

22 ENERGY SERIES

MODEL

Dimension (HxWxD) mm
Mounting

ASPP (Single Phase Preventor)

105 x 22.5 x 76.85
Din rail mounting



INPUT
OUTPUT
TRIPPING PARAMETER
POWER SUPPLY

Input Voltage : 280 to 520V AC (L-L)
3Ø-3W

1 Relay (5A, 230V AC (Resistance load))

Phase loss
Phase sequence
Phase asymmetry

No Power Supply to be given separately



MODEL

Dimension (HxWxD) mm
Mounting

AFR

105 x 22.5 x 76.85
Din rail mounting

RANGE
OUTPUT
POWER SUPPLY

Forward & Reverse Time Range : 0.1 sec to 10 Hour
Pause Time : 1 Sec to 100 Sec

- ◆ 2 Relay O/P (1 C/O, 5A 230V AC (Resistive Load))
- ◆ 1st Relay for Forward Time &
- ◆ 2nd Relay for Reverse Time

230V AC ±20%, 50Hz

MODEL

Dimension (HxWxD) mm
Mounting

ACY

105 x 22.5 x 76.85
Din rail mounting



TIME RANGE
OUTPUT
POWER SUPPLY

0.1 Sec to 10 Hour

1 Relay O/P
(2 C/O, 5A 230V AC (Resistive Load))

230V AC ±20%, 50Hz



MODEL

Dimension (HxWxD) mm
Mounting

AS10s, AS30s, AS60s, AS30M

105 x 22.5 x 76.85
Din rail mounting

TIME RANGE

0 to 10 Sec (For AS 10S)
0 to 30 Sec (For AS 30S)
0 to 60 Sec (For AS 60S)
0 to 30 Min (For AS 30M)

OUTPUT

1 Relay O/P (ON Delay/ OFF Delay)
(1 C/O, 5A 230V AC ,Resistive Load)

POWER SUPPLY

230V AC ±20%, 50Hz / 24V DC/ 415V AC
(Factory set)

MODEL

Dimension (HxWxD) mm
Mounting

ASD

105 x 22.5 x 76.85
Din rail mounting

RANGE

Time Range : 0 to 60 Sec
Pause Time : 50 ms or 100 ms Selection
by front key

OUTPUT

- ◆ 2 Relay O/P
(1 C/O, 5A 230V AC ,Resistive Load)
- ◆ 1st Relay for star connection &
- ◆ 2nd Relay for delta connection

POWER SUPPLY

230V AC ±20%, 50Hz

Note

415V AC Supply Available on Request



MODEL

Dimension (HxWxD) mm
Mounting

ASH

105 x 22.5 x 76.85
Din rail mounting

TIME RANGE

0.1 Sec to 10 Hour

OUTPUT

1 Relay O/P
(2 C/O, 5A 230V AC ,Resistive Load)

POWER SUPPLY

230V AC ±20%, 50Hz



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