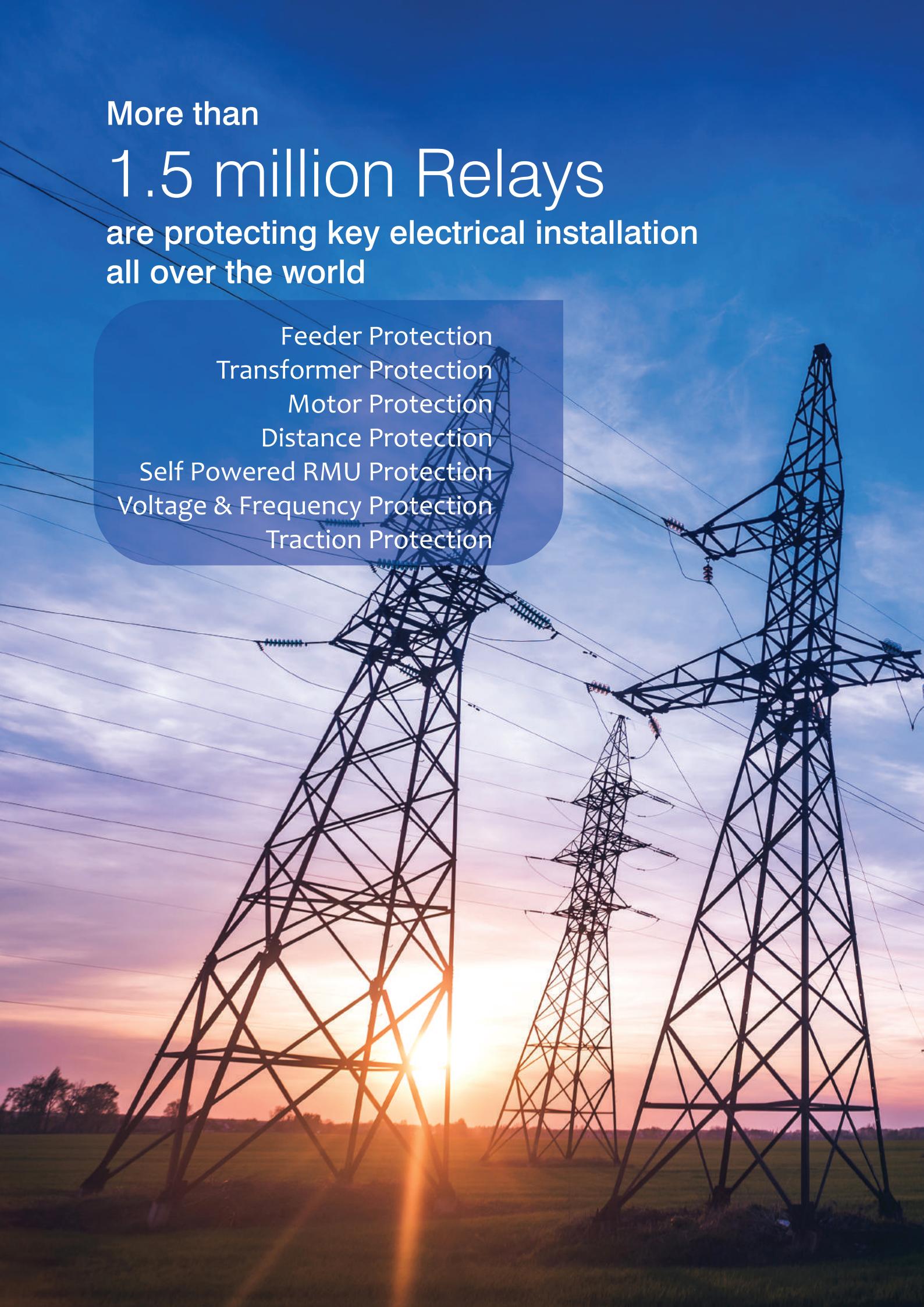


# Multifunction Power Protection Relays



World-class quality, comprehensive range of Relays  
for Generation, Transmission and Distribution

More than  
1.5 million Relays  
are protecting key electrical installation  
all over the world

A photograph showing the silhouettes of three large electricity pylons against a sky transitioning from blue at the top to orange and pink at the horizon, indicating either sunrise or sunset. The pylons are made of dark metal and have multiple cross-arms supporting wires.

- Feeder Protection
- Transformer Protection
- Motor Protection
- Distance Protection
- Self Powered RMU Protection
- Voltage & Frequency Protection
- Traction Protection

# Numerical Protection Relays

ASHIDA has designed economical & reliable multifunction Basic (B0), Enhanced (E0), Modular (M0) & Draw out (DWO) version of Relays. Modular version relays are available in 14" and 19" inch rack. In 14" rack case with combination of 32 programmable inputs and programmable outputs and in 19" rack case with combination of 64 programmable inputs and programmable outputs are provided. The simple and compact construction of ADITYA series relays provides integrated Protection, Control and Monitoring functions.

## Protection Relays Different Versions

	B0	E0	M0 - 14"	M0 - 19"
Directional Feeder Protection	■	■	■	■
Transformer Protection	■	■	■	■
Motor Protection	■	■	■	■
Distance Protection			■	■

## Relays with varied applications:

Relays are designed with fast and selective tripping function which ensures the stability and availability of electrical power system. Wide range of Relay options enables the customer to choose appropriate and economical solution. As per customer's requirements and specifications we can provide different communication protocols like IEC 103, IEC 61850, MODBUS, DNP3, etc. with different communication ports like RS485, RS422, RJ45, Ethernet Port, USB port, etc.

### FEEDER PROTECTION RELAYS

Designed for Transmission Line Protection, Underground Cables & Feeder Protection, Machine Protection and Shunt Capacitor Bank Protection applications.

### TRANSFORMER DIFFERENTIAL RELAYS

Designed for Transformer, Generator, Motor & Reactor protection applications.

### MOTOR PROTECTION RELAYS

Designed for electric motor protection applications.

### LINE DISTANCE PROTECTION RELAYS

Designed for Line, Feeder & Machine protection applications.

### RING MAIN UNIT PROTECTION RELAYS

Designed for Ring Main Unit protection applications. It is a Self Powered Relay.

## Bay Control Protection Unit (M0-19") Features:

- IEC 61850 native platform.
- Extensive dynamic range in current inputs & voltage inputs
- Modular Hardware.
- Program features with logic, latches, timers, counters, flip-flop & edge-triggers.
- Analog parameter measurement, Maximum Demand, Energy measurement.
- Digital inputs from basic 16 Nos extendable to 32 Nos for control functions or automatic functions.
- Digital outputs from basic 16 Nos extendable to 32 Nos for control/tripping and signalling.
- USB port, RS 485 port or RJ45 port for configuration.
- Dual ethernet port for Redundancy.
- Web Server
- Applicable in redundant grid.



## Self Powered RMU Protection Relay

ANSI	Functions	Model	AM 460 (Ver.) ADR241S	AM 760 (Ver.) ADR241S	AM 5111 (Hor.) ADR241S	AM 521 (DIO) ADR241S
37	Under Current Protection	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
46	Negative Phase Sequence	NA	<input checked="" type="checkbox"/>	NA	NA	
46BC	Broken Conductor Detection	NA	<input checked="" type="checkbox"/>	NA	NA	
49	Thermal Overload Protection	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
50	Instantaneous/Definite Time Phase OC Protection	<input checked="" type="checkbox"/>				
50N	Instantaneous/Definite Time Ground OC Protection	<input checked="" type="checkbox"/>				
51	Inverse Time Phase OC Protection	<input checked="" type="checkbox"/>				
51N	Inverse Time Ground OC Protection	<input checked="" type="checkbox"/>				
68	Inrush Blocking	<input checked="" type="checkbox"/>				
79	Auto Reclosing	NA	<input checked="" type="checkbox"/>	NA	NA	
86	Lockout (Trip Command)	<input checked="" type="checkbox"/>				
CLP	Cold Load Pick Up	<input checked="" type="checkbox"/>				
	Disturbance Recording	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Event Recording	<input checked="" type="checkbox"/>				
	Fault Recording	<input checked="" type="checkbox"/>				
3OL		<input checked="" type="checkbox"/>	NA	NA	NA	
	Self Supervision	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	3 Mechanical Flags	NA	NA	NA	<input checked="" type="checkbox"/>	
	DI/DO	4/4	4/3	4/4	4/5	

## Transformer Differential Protection Relay

Model	B0	EO	M0	DW0	A21T
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ADR233B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
M0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
DW0					
A21T					

Feeder Protection Relay										Motor Protection Relays															
ANSI	Functions	Body Type	Model								B0	E0	M0	DWO	DWO	NDWO	ADR241B	ADR241B	ADR241C	A21F	ADR244B	ADR244B	ADR244B	ADR244A	A21M
			ADR245B	ADR245B	ADR245B	ADR241A	ADR241B	ADR241B	ADR241C	A21F															
21FL	Fault Locator			●																NA	NA	NA	NA	NA	
25	Sync Check			●	●															NA	NA	NA	NA	NA	
27	Under Voltage Protection		■	■	■														■						
32P	Directional Power Protection		■	■	■														■	■	■	■			
32R	Reverse Power Protection	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA							
37	Under Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
40	Loss of Excitation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	■	■	■	■	■		
46	Negative Phase Sequence Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
46BC	Broken Conductor Detection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
47	Negative Phase Sequence Over Voltage Protection	■	■	■	■	■													■	■	■	■	■		
48	Motor Prolong Start Protection	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	■	■	■	■	■		
49	Thermal Overload Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50	Instantaneous/Definite Time Phase Over Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50N	Instantaneous/Definite Time Ground Over Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50BC	Broken Conductor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50BF	Breaker Failure	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
50LR	Locked Rotor / Motor Stall Protection	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	■	■	■	■	■		
50SEF	Sensitive Ground Over Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
51	Inverse Time Phase Over Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
51N	Inverse Time Ground Over Current Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
51V	Voltage Dependant Over Current	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
55	Power Factor Protection	■	■	■	■	■													■	■	■	■	■		
59	Over Voltage Protection	■	■	■	■	■													■	■	■	■	■		
59N	Residual Over Voltage Protection	■	■	■	■	■													■	■	■	■	■		
62	Timer Element	■	■	■	■	■													■	■	■	■	■		
64R	High Impedance Restricted Earth Fault Protection	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
66	Prolonged Start Protection	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	■	■	■	■	■		
67P	Directional Phase Over Current Protection	■	■	■	■	■													NA	NA	NA	NA	NA		
67N	Directional Ground Over Current Protection	■	■	■	■	■													NA	NA	NA	NA	NA		
68	Out of Step	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	■	■	■	■	■		
74	Alarm Output	■	■	■	■	■													■	■	■	■	■		
79	Auto Reclosing	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	NA	NA	NA	NA	NA		
81O/U	Frequency Protection	■	■	■	■	■													■	■	■	■	■		
81R	Rate of Change of Frequency	●	●	●															●	●	●	●	●		
86	Lockout (Trip Command)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
CLP	Cold Load Pick Up	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
VTS/60	VT Supervision Detection	■	■	■	■	■													■	■	■	■	■		
CTS	CT Supervision Detection	■	■	■	■	■													■	■	■	■	■		
Eload	Load Encroachment	■	■	■	■	■													NA	NA	NA	NA	NA		
SOTF	Switch On To Fault	●	●	●	●	●												●	●	●	●	●			
	Trip Circuit Supervision	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Digital Inputs		12	10	16/32	4	8	8	12	2	6								12	10	16/32	4	6			
Digital Outputs		11	11/16	16/32	8	8	8	11	4	6								11	11/16	16/32	7	6			
Independent Protection Setting Groups		2	4	4	2	2	2	2	2	2								2	4	4	2	2			
Disturbance Recording		10	10	10	10	10	10	10	N	5								10	10	10	10	5			
Event Recording		■	■	■	■	■	■	■	■	■								■	■	■	■	■			
Fault Recording		10	10	10	10	10	10	10	5	5								10	10	10	10	5			

■ Yes   ● Optional   NA Not applicable



## ASHIDA Draw Out Electro-Mechanical Relays

ASHIDA has launched new series of Auxiliary Relays. 'Ojas Series' is a premium series of Electro-Mechanical Relays having Draw Out facility. Draw Out cabinet makes these Relays easy to install and handle. ASHIDA Relays are known for reliability, performance and security. ASHIDA Auxiliary Relays are designed for all conditions and applications. Models are specifically designed to be best suited for electrical installations.

### ADE-A

Low burden Relays for event recording, alarm, contact multiplication, interlocking etc.

Available in single coil & double coil with Self Reset, Self + Hand Reset and Hand Reset Contacts.

Standard Flag, Reverse Flag & No Flag options

### ADE-T

Master Trip Relays which directly operate circuit – breaker trip coils. ADE-T Relays have instantaneous high speed tripping contacts. The Relay is an important link between Protection Relays and Circuit Breakers.

Available in single coil & double coil with Self Reset, Hand Reset, Electrical Reset and Hand + Electrical Reset Contacts. Standard Flag Following Flag options

### ADE-S

Supervision Relays which supervise AC or DC auxiliary supply as well as trip circuit healthy condition.

AC Supervision & DC Supervision Relay models are available in single coil & double coil with Self Reset and Hand Reset Contacts. ADE-S Trip Circuit Supervision Relay models are available in triple coil with Self Reset Contacts. Standard Flag, Reverse Flag & No Flag options

### ADE-C

Relays are contact multiplication relays with electrical reset.

Available in double coil with Electrical Reset Contacts. Following Flag

### ARTB (ASHIDA Relay Test Block) & ARTP (ASHIDA Relay Test Plug)

provides facilities for monitoring & secondary injection testing of any power system protection scheme. Available in Horizontal & vertical type.

The models are available in Case Size 2 & Case Size 4 with panel cut out size 159mm (H) x 48mm (W) and 159mm (H) x 100mm (W) respectively.



Flag Relay



Auxiliary Relay in CSB Cabinet  
(92mm x 92mm)



Auxiliary Relay in CSC Cabinet  
(186mm x 92mm)



## Auxiliary Relays

ASHIDA electro-mechanical type auxiliary relays. Full range of auxiliary relays for applications of control & monitoring, tripping circuit breakers, supervising, signaling and interlocking. Simple, compact and robust design. All relays conform to IS:3231 requirements.

### Contact Rating:

	Make and Carry	Make and carry for 3 Sec	Break
AC	1250VA with max. of 5A & 660 Volts	7500VA with max. of 30A & 660 Volts	1250VA with max. of 5A & 660 Volts"
DC	1250 W with max. of 5A & 660 Volts.	7500 W with max. of 30A & 660 Volts	100 W Resistive, 50 W Inductive, 5A / 660V

### Models

Master trip Relays: AVAJH13, AVAJH23, AVAJH33, AVAJS13, AVAJS23, AVAJHM23, AVAJHM33, AVAJC11

Auxiliary Relays: AVA11, AVA12, AVA13, AVA21, AVA22, AVA23, AVA31, AVA32, AVA33, AVA41, AVA42, AVA43

Supervision Relays: AVA21A, AVA21D, ATSR31A

Flag Relay: AFLGR (Alarm Control Indications and other auxiliary duties in AC and DC system)

The relays are offered with single coil, double coil or triple coil depending upon the application. The relays are available with self reset contacts, hand reset contacts or self + hand reset contacts with HR mechanical flag.



ASHIDA H.O & R&D

ASHIDA UNIT No 2

ASHIDA UNIT No 3



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