



EBOMAC
The ight electrical choice



إبوماك
الاختيار الكهربائي الأمثل

LOW VOLTAGE AUTOMATIC TRANSFER SWITCHES (ATS) (TYPE : CONTACTOR / MCCB / ACB)



Technical data:

Standard compliance to :

MEW S1/IEC 60439-1	:	Panel construction
IEC 60529	:	Degree of protection
BS 159/IEC	:	Busbars/Connections
IEC 60947	:	Breakers/Contactors/Other components
BS 88/IEC 60269	:	Fuses
IEC 60051/BS 89	:	Meterings
And other relevant standards.	:	Kuwait Oil Company(KOC) Specifications Kuwait National Petroleum Co.(KNPC) Specifications

System :

Rated operational voltage & frequency (Ue,f)	:	415/240V*, 50Hz.
Rating	:	Upto 4000A
Phases, No of Poles	:	1-Phase/2 Pole, 3-Phase/4 Pole
Contactor or MCCB ATS	:	Below 600A
ACB ATS	:	Rating 600A & above
<i>ATS Electrically & Mechanically interlocked and with or without Manual by-pass switches</i>		
*Other voltages on request.		

Enclosures :

Material	:	Electro galvanized, Zinc coated steel sheet
Painting	:	Powder coating, Shade RAL-7032, light grey.
Degree of protection(IEC 60529)	:	IP 42 / IP 52 / IP 54
Cable access	:	Front/Rear
Cable entry	:	Top or Bottom

STANDARD OVERALL DIMENSIONS FOR ATS WITH MANUAL BY PASS

Rating	Height mm	Width mm	Depth mm	Type of ATS	Rating	Height mm	Width mm	Depth mm	Type of ATS
Upto 63A	1500	1100	225	C *	800/1000/ 1250A	2250	2380	985	A
100-160A	2180	900	445	M / C	1600A	2250	2430	1085	A
200-250A	2180	900	600	M / C	2000A				
400-500A	2250	1330	885	M / C	2500A 3000A	2250	2830	1285	A
630A	2250	1630	885	M					

C-CONTACTOR M-MCCB A-ACB *Wall mounting type

EBOMAC ATS offers advantages that sets safety & ease of maintenance

- Ensure the protection of person against direct contact with live parts.
- Electrically & Mechanically interlocked.
- Enclosed type complying to IEC 60439-1.
- Modular construction for maximum installation flexibility.
- Transfer switch position indicating lights on the front door.
- Easy selection to control the operation of ATS on NORMAL-AUTO-EMERGENCY-OFF by selector switch.
- Control supply fed from Normal source, in case of failure of normal source, fed automatically from emergency source. No external control supply required.
- Manual bypass changeover switches-isolation provides full isolation of ATS during maintenance & repair.
- Front or Rear access for cable termination.
- Top or Bottom cable entry.

Optional :

- Exerciser timer to test the generator periodically with or without load transfer.
- Test switch to momentarily simulate normal source failure.
- Microprocessor(PLC) based control.(Continuous DC control supply should be available).

SEQUENCE OF OPERATION FOR ATS

- 1) Selector Switch 'S1' on 'OFF' Position :-
Both Breakers (Transformer & Generator) are opened.
- 2) Selector Switch 'S1' on 'Transformer' Position :-
Transformer Breaker 'Q1' is closed and remains closed even in case of failure of Transformer supply.
- 3) Selector Switch 'S1' on 'Generator' Position :-
Generator is to run and Generator Breaker 'Q2' is closed and remains closed even when Transformer supply is available.
- 4) Selector Switch 'S1' on 'AUTO' Position :
 - 4.1- If Transformer supply is available Transformer Breaker 'Q1' is closed.
 - 4.2- If Transformer supply Fails:-
Generator will start (Terminals 1 X2 , 2 X2) after a preset time delay by Timer 'K11'. After the Generator Voltage is stabilized (Checked by U/V relay KF2) control relay 'K2' and 'K5' will be energized which inturn opens the Transformer Breaker 'Q1' and close the Generator Breaker 'Q2' after a preset time delay by Timer 'K15'.
 - 4.3- If Transformer supply is Restored:-
Generator Breaker 'Q2' will opens after a preset time delay by Timer 'K12' and then close the Transformer Breaker 'Q1' after a preset time delay by Timer 'K14'.

After another time delay given by Timer 'K13' Generator will stop.

Sizes other than mentioned or any non standard sequences available on request and to be co-ordinated with Ebomac design department.

Development is a continuous process thus ebomac reserves the right to change data or design without any prior notice.

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