



Automatic Transfer Switch |

DYNAGEAR

Lakshmi Electrical Control Systems Limited

Automatic Transfer Switch

DTR-LD03



Automatic Transfer Switch

Power voltage	AC230V/400V
Rated working current	6A, 10A , 16A, 20A, 25A, 32A, 40A, 50A, 63A
Poles	3P/4P
Controller Type	A/B/C
Operation mode	Auto and manual
Transfer mode	Auto change auto recovery
Overall dimension LxWxH	248x 125x 125mm
Installation dimension	229x 113mm
Mounting	Vertical

DTR-LDQ3NX



Automatic Transfer Switch

Power voltage	AC230V/400V
Rated working current	6A, 10A , 16A, 20A, 25A, 32A, 40A, 50A, 63A
Poles	3P/4P
Controller model	A/B/C/D
Operating mode	Automatic and Manual
Transfer mode	Auto change auto recovery/Auto change auto recovery; Auto change no auto recovery and power grid-generator; Auto change auto recovery/Auto change auto recovery; Auto change no auto recovery and power grid-generator
Overall dimensions (mm)	3P: 212.5x 125x 121, 4P: 248x 125x 121
Installation dimensions (mm)	3P: 193.5x 113, 4P: 229x 113

B-LDQ3NMA



Automatic Transfer Switch

Frame current	63A	125A	250A	400A	630A	800A	1250A
Rated current	6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A	80A 100A 125A	125A, 160A 180A, 200A 225A, 250A	250A' 315A 350A, 400A	500A 630A	800A	1250A
Operating voltage	400V						
Number of poles	3P/4P						
Controller model	A						
Operating mode	Automatic/Manual						
Transfer mode	Automatic transfer-automatic reset Automatic transfer-none automatic reset Power grid-generator						
Overall dimensions (mm)	3P: 390x240x 145, 4P: 420x240x 145(125 type)						
Installation dimensions (mm)	3P: 357x 220, 4P: 387x 220 (125 type)						

DTR-ATB



Automatic Transfer Switch

Frame current	63A	125A	250A	400A	630A	800A	1250A
Rated working current	6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A	80A	125A, 160A	100A 180A, 200A	250A, 315A 350A, 400A	500A 630A	800A 1250A
Power voltage	400V						
Poles	3P/4P						
Controller model	B						
Operating mode	Auto and manual						
Transfer mode	Auto change auto recovery; Auto change no auto recovery and power grid-generator						
Overall dimensions (mm)	3P: 390 × 240 × 145, 4P: 420 × 240 × 145(125 type)						
Installation dimensions (mm)	3P: 357 × 220, 4P: 387 × 220 (125 type)						

DTR-LDS2



Automatic Transfer Switch

Operating voltage	AC230V/400V
Rated current	100A, 160A, 250A, 630A, 1000A, 1600A, 2000A, 2500A, 3200A
Rated impulse withstand voltage	8KV
Rated limited short-circuit current	120kA
Using class	AC-33iB(PC class)
Number of poles	3P/4P

DTR-LDS3



Automatic Transfer Switch

Operating voltage	AC230V/400V
Rated current	16-125A, 140-250A, 315-630A
Rated impulse withstand voltage	8KV
Rated limited short-circuit current	120kA
Using class	AC-33B(PC class)
Number of poles	3P/4P

DTR -LCPS1 Control And Protective Switching Device



Rated working voltage (Ue)	400V、690V
Power voltage (Us)	AC230V、AC400V
Frame current (Inm)	45A、125A
Rated working current(Ie)	1A、3A、6A、12A、16A、25A、32A、45A、63A、80A、100A、125A
Ambient temperature	-5℃ — 40℃
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	distribution protection, motor protection
breaking capacity	C: 15KA、Y: 35KA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefighting、L-Leakage、G-Isolation、T-Communication
Mounting	Vertical
Dimension(mm)	45type3P: 202 × 78 × 140 125type3P: 245 × 104 × 180

DTR-CPS2

Control And Protective Switching Device



Frame class	63
Rated working voltage (Ue)	400V、690V
Use categeory	AC-43,AC-44
Conventional thermal current Ith(A)	12 32 63
Rated working current(Ie)	0.6、1.2、2.4、6、12 18、32 45、63
Rated frequency	50Hz
Poles	3P
Rated work system	Eight-Hour work system,Uninterrupted work system,intermittent work system intermittent work system level 600,load factor40%
Rated operating short-circuit breaking capacity Ics	50kA(AC400V),4kA(AC690V)
Breaking action time	≤ 2ms
Rated insulation voltage Ui	690V
Rated impluse withstand voltage Uimp	6kV
Electrical life span (AC-43)(Ten Thousand)	100(AC400V)
Mechanical life span(Ten Thousand)	1000
Mounting	Vertical
Dimension(mm)	180 × 55 × 158

XLCP51D Double Speed



Control And Protective Switching Device

Rated working voltage (Ue)	400V、690V
Power voltage (Us)	AC230V、AC400V
Frame current (Inm)	45A、125A
Rated working current(Ie)	1A、3A、6A、12A、16A、25A、32A、45A、63A、80A、100A、125A
Ambient temperature	-5℃ — 40℃
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
Breaking capacity	C: 15KA、Y: 35KA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefighting、L-Leakage、G-Isolation、T-Communication
Mounting	Vertical
Dimension(mm)	45type3P: 400 × 450 125type3P: 450 × 550

XLCP51J Delta-Star



Control And Protective Switching Device

Rated working voltage (Ue)	400V、690V
Power voltage (Us)	AC230V、AC400V
Frame current (Inm)	45A、125A
Rated working current(Ie)	1A、3A、6A、12A、16A、25A、32A、45A、63A、80A、100A、125A
Ambient temperature	-5℃ — 40℃
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
breaking capacity	C: 15KA、Y: 35KA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefighting、L-Leakage、G-Isolation、T-Communication
Mounting	Vertical
Dimension(mm)	45type3P: 400 × 450 125type3P: 450 × 550

XLCP5 1 N Reversible



Control And Protective Switching Device

Rated working voltage (Ue)	400V、690V
Power voltage (Us)	AC230V、AC400V
Frame current (Inm)	45A、125A
Rated working current(Ie)	1A、3A、6A、12A、16A、25A、32A、45A、63A、80A、100A、125A
Ambient temperature	-5℃ — 40℃
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
breaking capacity	C: 15KA、Y: 35KA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefighting、L-Leakage、G-Isolation、T-Communication
Mounting	Vertical
Dimension(mm)	45type3P: 400 × 450 125type3P: 450 × 550



Dual Power Automatic Transfer Switch DTR-ATB Series

Application

DTR-ATB series Intelligent dual power auto transfer switch (ATS) suitable for emergency power supply system with rated AC voltage 400V, 50/60Hz. When there is fault in power source it can auto interchange from main power to backup power. No need for manual operation to protect the power supply stability. Mainly apply to the important places where power cutoff can't be allowed such as Hospital, shopping mall, bank, chemical industry, metallurgy, high building, military facilities and fire-fighting etc. Product conforms to IEC60947-6-1: (Auto transfer switch)

Working Conditions

- Ambient temperature: $-20^{\circ}\text{C} \sim +40^{\circ}\text{C}$; 24 hours average not more than $+35^{\circ}\text{C}$.
- Atmospheric conditions: humidity not more than 50% at max. $+40^{\circ}\text{C}$. higher humidity is allowed at lower temperature. at most wet month, the average max humidity is 90% at the average min temperature $+25^{\circ}\text{C}$. and have considered the condensation on the product surface due to temperature variation.
- Altitude: Not more than 2000m:
- Pollution Class : The installation site environment pollution Class 3.

Basic Structure

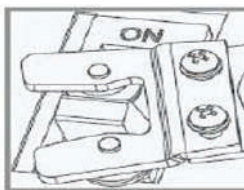
DTR-ATB series intelligent ATS comprised with two 3P or 4P MCCB and its accessories (Aux, contact, Alarm contact), Mechanical interlocking transmission mechanism, intelligent controller etc. Have integral and split type two structures. Integral type is controller and executive unit installed at a same base; Split type is controller installed on the panel and the executive unit installed on the base inside the panel box, a 2m length signal cable connecting the controller with the executive unit.

The features:

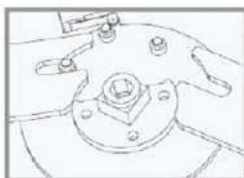
- There is a reliable mechanical interlock device and electric interlock protection between two MCCB, completely avoid the possibility of two MCCB closed at same time;
- Intelligent controller adopt the single chip microcomputer (SCM) as the control core. simple hardware, strong functions, easy extension, high reliability;
- Intelligent controller circuit layout design adopt power sampling separate with SCM control, from the hardware to overcome the electromagnetic interference;



- With short circuit, over load protection functions, over-volt & under-volt, phase missing auto transfer function and intelligent alarm function;
- Auto transfer data by external setting freely, with operation motor protect Function;
- Signal connecting cable have passed FLUKE instrument channel test, anti near crosstalk, attenuation crosstalk and back wave loss, can meet the test criteria for permanent link;
- The ATS controller installation method provide customer with highly autonomy, split installation only need simply connect the attached RJ45 signal cable to the corresponding terminal port;
- The controller part based on the previous similar product, have made enhancement process of the electronic components, make it more matching with the product operation.
- Product appearance lead in international design concept, more elegant and practical.
- Mechanism innovation made following improvements:



The push handle adopt adjustable slider structure design, have more wide circuit breaker's ON/OFF travelling distance, make the production process more simple.



Optimized cam transmission mechanism design ensures the reliability of mechanical interlock and at the same time makes the mechanical life more than 10000 times.



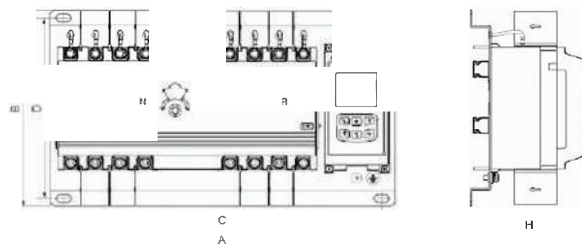
Adopt mechanical positioning detect structure, make the ATS switching more accuracy and reliable during linkage.



Working Mode

- DTR-ATB series intelligent dual power ATS have two working mode: Auto mode and Manual mode.
- Auto Mode: Three modes: Auto Change Auto recovery (R) Auto change no auto recovery (S) and Power Grid-Generator (F), the first two mode used in power grid-power grid system, the latter mode is used in power grid-generator system.
- Manual mode: manual mode has three working mode, main power, backup power and breaker trip modes. Under manual working mode, there will be no auto transfer function.
 - Main power mode: Forced disconnecting backup power, and turn ON the main power;
 - Backup power mode: Forced disconnecting the main power and turn ON the backup power.
 - Breaker trip mode: To disconnecting two power sources, also can switch on the fault tripped circuit breaker.

Outline And Installation Dimensions(mm)

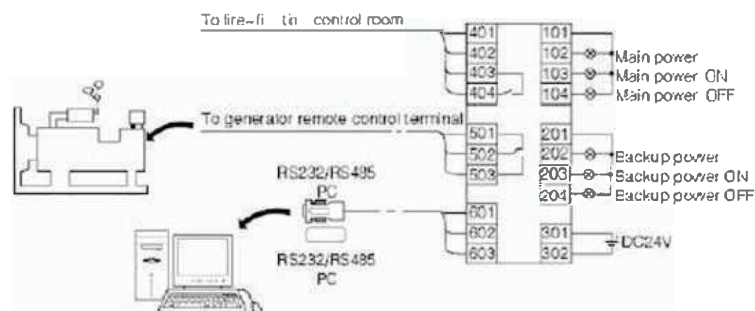


Note: The 4pcs mounting screw is M8 size.

Type	Size	A		B	C		D	
		3P	4P		3P	4P		
DTR-ATB-63	355	380	240	322	348	220	145	
DTR-ATB-100	390	420	240	358	388	220	145	
DTR-ATB-225	435	470	240	402	438	220	145	
DTR-ATB-400	565	615	330	505	555	300	200	
DTR-ATB-630	682	740	330	622	680	300	200	
DTR-ATB-800	720	790	350	665	735	320	200	
DTR-ATB-1250	730	800	390	685	755	367	252	



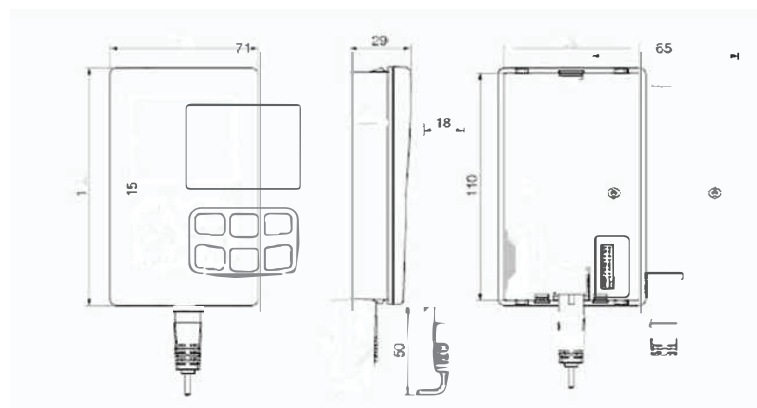
Terminal Wiring



Controller Features And Functions

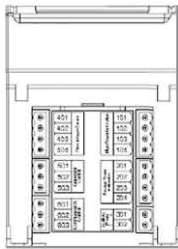
- Adopts B type controller:
- Can set the controller working mode and transfer data by the controller;
- Through the display can view the measuring and control data. Including the voltage and delay time etc.
- Fire linkage control function: controller with a set of passive fire-fighting signal input terminal. The input signal using opto-coupler isolation, have strong anti-interference ability; And also have a set of passive feedback signal output terminals, can send the switching position back to fire-fighting control equipment.
- Generator start/stop control function: Controller with a relay contact point to control the generator start and stop, and also can manually setting the generator start/stop delay time (need connect a aux. power with DC15-30V);
- Can remove the display panel and install on the switchgear panel. Users can observe the ATS status without opening the panel doors.

Split Controller Outline And Mounting Size(mm)





TerminalWiring Instruction



- 101~104 Main power external indicator signal (Active AC220V/0.5A)
 - 101-Indicator common null line 02-Main power Indicator signal output
 - 103-Main power ON signal output 104-Main power trip signal output
- 201-204 Backup power external Indicator signal (Active AC220V/0.5A)
 - 201-Indicator common null line 202-Backup power Indicator signal output
 - 203-Backup power ON signal output 204-Backup power trip signal output
- 301-302 Controller DC aux. power Input (DC15V-30V/0.5A)

The main purpose to put an aux. power is to control the generator start delay time under the Power grid-Generator mode, If without aux. power, the generator start delay time is 0s. If the generator start delay function not needed. then no need to connect the aux. power .
- 401~404 Fire linkage control terminal; Used to remote control cutoff the ATS power supply after the fire alarm.

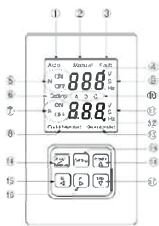
401, 402 Fire linkage control signal input terminal. this terminal external only connect to a set of NO passive contact point(If the signal from fire-fighting equipment is an active signal, must first pass through a small relay, then connect the relay NO point to controller, otherwise will burn the controller), when the external contact point closed, the controller Immediately control the switch transfer to OFF position to switch off the load power supply. at same time through 403 and 404 terminal to send the signal back to fire-lighting control center:

403, 404 Inside is a set of NO relay contact point, used for sending the fire-fighting movement signal back; when it is normal, the contact is NO status, when there is fire-fighting signal input to the controller, and the switch transfer to OFF position, the 403 and 404 closed. (Notes: when the fire linkage function is active, the ATS will stop working, If want the ATS to working again, must first clear up the fire-fighting signal and then switching the Auto/Manual control switch one time, the ATS will recovery normal working)
- 501~503 Generator start control output terminals

When the backup power is Auto start generator. users can connecting the 501~503 terminal to the generator controller to achieve the generator auto start function. inside 501-503 terminal, there is a 3A passive relay contact point. 502 is the relay common terminal, 503 is relay NC point, 501 is relay NO point Under Power grid-Generator mode and controller is auto mode, when main power normal, 502 and 501 is closed. 502 and 503 open, If main power failure and backup power no electricity, 502 and 503 closed after generator start delay time, and meanwhile 502 and 501 open to send the generator start signal, after generator start successfully. it auto transfer to the backup power supply. during the backup power supply normally and if main power recovery, then after the recovery delay time control, it transfer to main power supply, main power circuit breaker ON, then after generator stop delay time 502 and 501 Closed, 502 and 503 open to send generator stop signal.



Controller Panel Functions



1. Auto mode indication;
2. Manual mode indication;
3. Fault indication: When ATS is fault or load short circuit causes the circuit breaker trip, this indicator will light;
4. Main power voltage data indication zone : under working status. It display the main power voltage and time delay, under setting status, it display the item code;
5. Main power circuit breaker ON/OFF Indicate;
6. Setting status indicate;
7. Backup Power circuit breaker ON/OFF Indicate;
8. Fire linkage function start indicate;
9. Main power voltage, time and frequency unit;
10. A. B. c phase Indicat
11. Backup power voltage, time and frequency unit
12. Backup power voltage data Indication zone
under working status, It display the backup power voltage and time delay, under setting status, It display the item code;
13. Generator start signal indicate;
14. Auto/Manual mode select button:
under working status it used to select the Auto and Manual mode, under the setting status it used as save and escape function;
15. Main power transfer button:
under manual control mode and main power good, push this button will forced to transfer to main power: Under setting status. It used for up page button:
16. Backup power transfer button:
under manual control mode and backup power good, push this button will forced to transfer to backup power; Under setting status, It used for down page button:
17. Trip button:
under manual control mode If any one of the two power is good, push this button will change to OFF position; under setting status it is used for data reduce button;
18. Fault inquiry button:
If the fault indicator is light on the display through this button can check the fault code: under setting status It is used for data Increase button;
19. Setting button:
push this button Will enter into the controller setting menu.

SYNAGEAR

Lakshmi Electrical Control Systems Limited (LECS) is one of the leading manufacturer of switchgear products from 1982.

LECS manufactures custom-engineered control panel for Textile Machinery, Machine Tools, APFC, Energy Saver – Lighting, Compressor and many other applications conforming to International Standards.

LECS manufactures Engg. Plastic components with total expertise and facilities to deliver complete design solutions and ready to fit products. The company has strong background in R & D, Engineering, Tooling and Automation.

SYNAGEAR

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