HDQ1S

Transfer Switching Equipment (TSE)

User Manual

☐ Please carefully read this User Manual before installing and operating the product, and keep this manual properly for future reference

Himel

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.
No responsibility is assumed by Himel for any consequences arising out of the use of this material.

Tenga en cuenta

Los equipos eléctricos deben ser instalados, operados, mantenidos y reparados únicamente por personal calificado.
Himel no asume responsabilidad alguna por las consecuencias derivadas del uso de este material.

Veuillez noter

Les équipements électriques doivent être installés, exploités, entretenus et réparés exclusivement par du personnel qualifié.
Himel décline toute responsabilité concernant les conséquences découlant de l'utilisation de ce matériel.

Lütfen Dikkat

Elektrikli ekipmanlar sadece nitelikli personel tarafından kurulmalı, çalıştırılmalı, bakımı yapılmalı ve onarılmalıdır.
Himel, bu materyalin kullanımından doğabilecek sonuçlardan sorumlu tutulamaz.

يرجى الملاحظة

يجب تركيب وتشغيل وصيانة وإصلاح المعدات الكهربائية فقط من قبل أشخاص مؤهلين.
لا تتحمل شركة Himel أي مسؤولية عن أي عواقب ناتجة عن استخدام هذه المواد.

请注意

电气设备的安装、操作、维护和维修工作必须由合格人员执行。
Himel对因使用本资料引起的任何后果不承担任何责任。

Назар аударыңыз

Электр жабдықтары тек білікті мамандар арқылы орнатылуы, пайдаланылуы, техникалық қызмет көрсетілуі және жөнделуі керек.
Himel осы материалды пайдалану нәтижесінде туындаған салдарлар үшін жауапкершілік алмайды.

Обратите внимание

Электрооборудование должно устанавливаться, эксплуатироваться, обслуживаться и ремонтироваться только квалифицированным персоналом.
Химел не несет ответственности за последствия, возникшие в результате использования данного материала.

DANGER / خطر / ҚАУІП / PELIGRO / TEHLİKE / 危险 / ОПАСНО

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See local equivalent. This equipment must only be installed and serviced by qualified electrical personnel. Turn off all power supplying this equipment before working on or inside equipment. Lock the switchgear in the isolated position. Always use a properly rated voltage sensing device to confirm power is off. Install safety barriers and display a danger sign. Put back all devices, doors, and covers before turning on power to this equipment. Failure to follow these instructions will result in death or serious injury.	RISQUE DE CHOC ÉLECTRIQUE, D'EXPLOSION OU D'ARC ÉLECTRIQUE Utiliser des Équipements de Protection Individuelle (EPI) et respecter les normes de sécurité électrique locales. Cet équipement doit être installé/maintenu par des électriciens qualifiés. Couper toutes les alimentations avant intervention. Verrouiller les armoires en position isolée. Vérifier l'absence de tension avec détecteur certifié. Installer des barrières de sécurité et signalisation de danger. Remettre en place toutes protections avant mise sous tension. Le non-respect entraînera des blessures graves ou mortelles.	خطر صدمة كهربائية أو انفجار أو وميض قوسي استخدم معدات وقائية مناسبة واتبع مواصفات الأمان المحلية. يجب تركيب/صيانة هذا الجهاز فقط من قبل فنيين معتمدين. أطفئ جميع المصادر قبل التدخل وأقفل محولات القدرة. استخدم جهاز كشف جهد معتمد للتأكد من انعدام التيار. ركّب حواجز حماية وعلّق لوحات تحذير. أعد تركيب جميع الأجزاء قبل التشغيل. عدم الامتثال سيسبب إصابات قاتلة.	ЭЛЕКТР ТОҒЫ, ЖАРЫЛЫС НЕМЕСЕ ЭЛЕКТРДОҒА ҚАУІПІ Сәйкес ЖҚЖ киіп, жергілікті электр қауіпсіздік ережелерін сақтаңыз. Бұл жабдықты тек сертификатталған электршілер орната/техникалық қызмет көрсете алады. Өңдеу алдында барлық қуат көздерін өшіріңіз. Коммутаторларды оқшауланған күйде құлыптаңыз. Электр жоқтығын растау үшін сертификатталған детектор қолданыңыз. Қауіпсіздік тосқауылдарын орнатып, ескерту белгілерін қойыңыз. Барлық қорғанышты құрылғыларды орнатпай электр бермеңіз. Ережелерді бұзу өлімге әкелетін жарақаттарға себеп болады.
PELIGRO DE DESCARGA ELÉCTRICA, EXPLOSIÓN O ARCO VOLTAICO Utilice EPP adecuado y cumpla con normativas eléctricas locales. Solo personal eléctrico certificado debe instalar/mantener este equipo. Desenergice completamente antes de operar. Bloquee cuadros eléctricos en posición aislada. Verifique ausencia de tensión con detector certificado. Instale barreras de seguridad y señalización de peligro. Reinstale todas las protecciones antes de energizar. La violación de procedimientos causará lesiones mortales.	ELEKTRİK ÇARPMASI, PATLAMA VEYA ARK FLAŞI RİSKİ Uygun KKD kullanın ve yerel elektrik güvenlik standartlarına uyun. Bu ekipman sadece sertifikalı elektrikçiler tarafından kurulmalı/-bakımı yapılmalıdır. Müdahale öncesi tüm güç kaynaklarını kesin. Şalt panosunu izole konumda kilitleyin. Gerilim yokluğunu onaylamak için sertifikalı test cihazı kullanın. Güvenlik bariyerleri kurun ve tehlike işaretleri yerleştirin. Tüm koruyucu parçaları yeniden takmadan enerji vermeyin. Kurallara uymamak ölümcül yaralanmalara yol açacaktır.	触电、爆炸或电弧闪光危险 采用适当的个人防护设备（PPE）并遵循电气作业安全规范。参见当地对应标准。 该设备必须由具备相应资质的电气人员安装维护。 操作设备前请关闭所有电源，将开关柜锁定在隔离位置。 使用额定电压检测装置确认断电。 安装安全隔离栏并设置危险警示标识。 恢复所有组件及防护装置后方可通电。 违反操作将导致人员伤亡。 .	PELIGRO DE DESCARGA ELÉCTRICA, EXPLOSIÓN O ARCO VOLTAICO Utilice EPP adecuado y cumpla con normativas eléctricas locales. Solo personal eléctrico certificado debe instalar/mantener este equipo. Desenergice completamente antes de operar. Bloquee cuadros eléctricos en posición aislada. Verifique ausencia de tensión con detector certificado. Instale barreras de seguridad y señalización de peligro. Reinstale todas las protecciones antes de energizar. La violación de procedimientos causará lesiones mortales.

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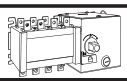
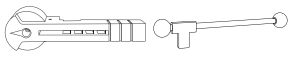
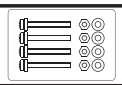
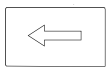
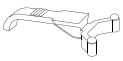
1 Introduction to HDQ1S TSE

1.1 Packing List

No.	Name	Qty
1	Main Switch	1 Pcs 
2	Handle	1 Pcs  (100AF～250AF) (800AF～3200AF)
3	Mounting screws	1 Bag 
4	Passport	1 Pcs  Passport
5	Interphase barriers	

Frame Size	Poles	Qty	Poles	Qty	Poles	Qty
100AF	2P	No	3P	4 Pcs	4P	6 Pcs
160-250AF	2P	No	3P	No	4P	6 Pcs
800AF	\	\	3P	4 Pcs	4P	6 Pcs
1600-3200AF	\	\	3P	No	4P	No

No.	Name	Qty
6	G type	8-Pins terminal 1 Pcs  7-Pins terminal 1 Pcs 
7	D type	Controller 1 Pcs  connecting cable 1 Pcs  3-Pins terminal 5 Pcs  2-Pins terminal 2 Pcs  Retention Clip 4 Pcs 

1.2 Structure

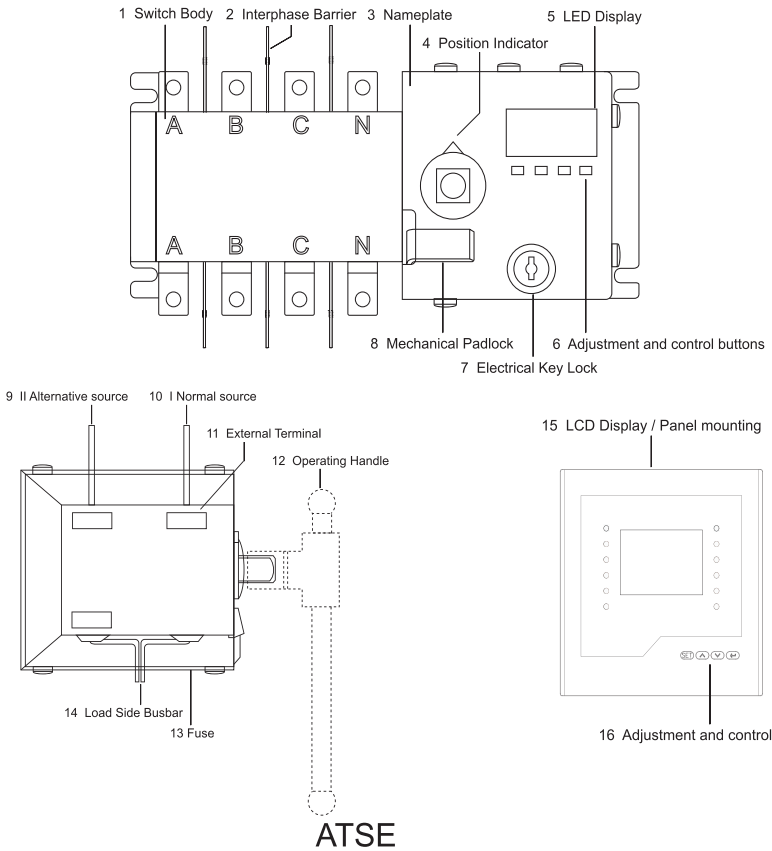


Figure 1 Schematic Diagram of the TSE

1.3 Features

" HDQ1S series TSE comply with GB/T 14048.11 & IEC 60947-6-1, is designed as a PC-class Automatic Transfer Switch (ATS) equipment. It is primarily utilized in AC 50/60 Hz power systems with a rated operating voltage of 230/400 V and a rated operating current ranging from 32 to 3200 A. This device facilitates the automatic or manual switching between the normal and alternative sources.

This device has three different types of controllers, each with distinct functional features. Specific features can be found in the Parameters."

"Electrical Key Lock: Controls the control switch's internal control circuit power supply. " Auto " indicates the power is on, " Manual " indicates the power is off.

P-Type: Auto position, allows both automatic and remote control; Manual position, only handle operation is permitted.

G-Type: Auto position, manual/automatic functions can be toggled via buttons;

Manual position, automatic/button switching is disabled, allowing only configuration and handle operation.

D-Type: Auto position, manual/automatic functions can be toggled via buttons;

Manual position, automatic/button switching is disabled, allowing only configuration and handle operation."

Operating Handle: When using the handle to operate the switch, the electrical key lock must be Manual position.

Mechanical Padlock: Rotate the electrical key lock to the manual position, use the operating handle to transfer the switch contacts to the OFF position, engage and secure the mechanical padlock, thereby disconnecting the internal power supply of the controller, with this safety lockout achieved, the switch can not transfer by both auto and manual, maintenance and inspection can now be safely performed on downstream equipment connected to the switch.

Position Indicator: Displays switch contacts status positions (I, O, II).

Switch Main Body: Front section - Source I "Normal Source" , Rear section - Source II "Alternative Source" .

1.4 Code System

HDQ1S 0160 4 0160 D D

Series	Frame size	Poles	Rated Current	Controller	Line/load
HDQ1S	0100:100AF	2:2P 3:3P 4:4P	0032/0063/0080/0100	P: Integrated without screen G: Integrated with LED screen D: Split with LCD screen & Rs485	U: Top entry D: Bottom entry
	0160:160AF		0125/0160		
	0250:250AF		0200/0250		
	0800:800AF	3:3P 4:4P	0315/0400/0500/0630/800		
	1600:1600AF		0800/1000/1250/1600		
	3200:3200AF		2000/2500/3200		

G Type can be optionally equipped with RS485 communication. Please contact the manufacturer.

1.5 Main Technical Parameters

1.5.1 Switch parameter table

100 to 3200A	Frame size	100AF				160AF		250AF		800AF					1600 AF				3200AF		
Rated voltage	Utilisation category	Rate operational currents Ie(A) according to IEC 60947-6-1 & GB/T 14048.11																			
415 VAC	AC-32B	32	63	80	100	125	160	200	250	315	400	500	630	800	800	1000	1250	1600	2000	2500	3200
415 VAC	AC-33iB	32	63	80	100	125	160	200	250	315	400	500	630	630	800	1000	1250	1600	2000	2500	3200
415 VAC	AC-33B	32	63	63	63	125	125	125	125	160	200	250	315	315	400	500	630	800	1000	1250	1600
Rated voltage Ue (V)	2P	230V								—											
	3P/4P	400V																			
Rated insulation voltage Ui (V)		800													1000						
Rated impulse withstand voltage Uimp (kV)		8													12						
Rated frequency (Hz)		50/60																			
Number of poles		2P/3P/4P								3P/4P											
Rated Short-Time Withstand Current Icw (kA)		5				10				16					32				50		
Rated Short-Circuit Making Capacity Icm (kA)		7.65				17				32					67.2				105		
Conversion time		⩽3s																			
Certificate		CCC/CE/CB																			
Applicable standard		IEC 60947-6-1 / GB/T 14048.11																			
Equipment Class		PC class																			
Pollution Level		Operate in Pollution Level III environments																			
"Dimension (WxHxD) without handle	2P	233*118*141				268*126*191		312*176*210		—											
	3P	233*118*141				268*126*191		312*176*210		375*287*267					520*370*325				540*440*505		
	4P	243*116*141				306*146*193		370*164*195		435*287*267					635*370*325				640*440*505		

1.5.2 Controller function introduction

■: Standard □: Opotionnal -: Without

Function\Controller	P	G	D
Controller Location	Integrated	Integrated	Split
Display Mode	—	LED	LCD
Manual Handle Operation	■	■	■
Auto. Transfer and recover	■	■	■
Auto. Transfer and without recover	—	■	■
Auto. Transfer and each as backup	—	■	■
Remote Control	■	—	■ (RS485)
Communication (RS485)	—	—	■
Baud Rate	—	—	(1200/2400/4800/9600)
Power to Power	■	■	■
Power to Generotar	—	■	■
Normal source phase failure monitoring	■	■	■
Normal source voltage loss monitoring	■	■	■
Alternative Source phase failure monitoring	—	■	■
Alternative Source voltage loss monitoring	■	■	■
Fire OFF	■(Passive Signal)	■(DC24V Signal)	■(DC24V Signal)
Fire OFF Signal	—	■(Passive Signal)	■(Passive Signal)
Transfer delay time adjustable	—	■	■
Return delay time adjustable	—	■	■
Normal and Alternative source state output	■	■	■
Normal and Alternative source ON state output	■	■	■
Normal and Alternative source state LED Indication	■	■	■
Normal and Alternative source ON stateLED Indication	—	■	■
Fuse	■	■	■
Over-Voltage and Under-Voltage state output	—	■	■
Over-Frequency Protection	—	—	■
Under-Frequency Protection	—	—	■
Phase sequence protection	—	—	■
Alarm signal Output	—	—	■
Transfer Failure Alarm	—	—	■
Fault records/queries	—	—	■
Manual/Auto Switch	■	■	■

2 Storage and Transportation

a) During transportation and installation, handle the machine with care, do not invert it, avoid severe colision andvibration, and make sure the free fall height during transportation does not exceed 0.4m

b) Avoid rain and snow and long-term direct exposure to sunshine

c) Ambient temperature -25℃ and +70℃, relative humidity ≤90%

3 Installation

3.1 Installation Environment

a) The ambient temperature does not exceed +50℃ and its average temperature within 24h does not exceed +35℃, The lower limit of ambient air temperature is -5℃;

b) The altitude of the installation site does not exceed 2,000m;

c) The relative humidity shall not exceed 50% when the maximum temperature is +50℃. A higher relative humiditymay be allowed at lower temperature, for example, 90% at +20℃; special measures shall be taken for occasiona condensation due to temperature changes;

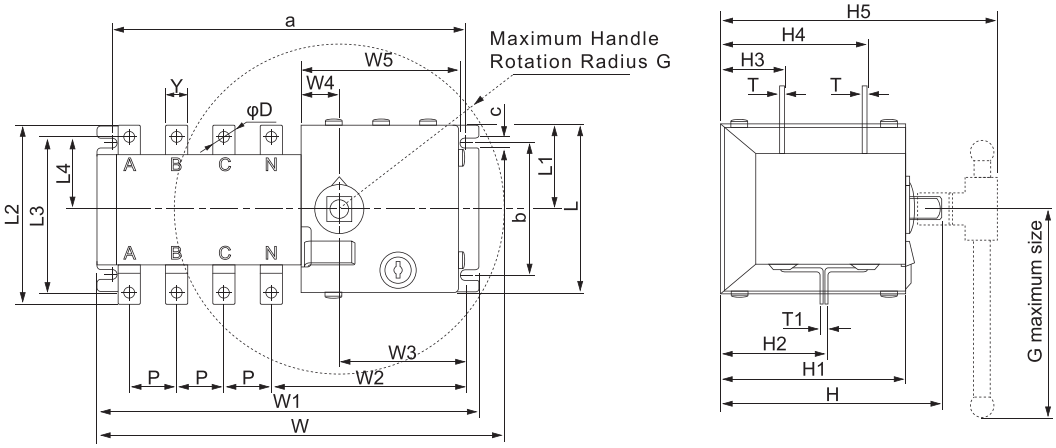
d) Contamination level is Level 3. The machine causes conductive contamination, or condensation may make drynonconductive contamination conductive;

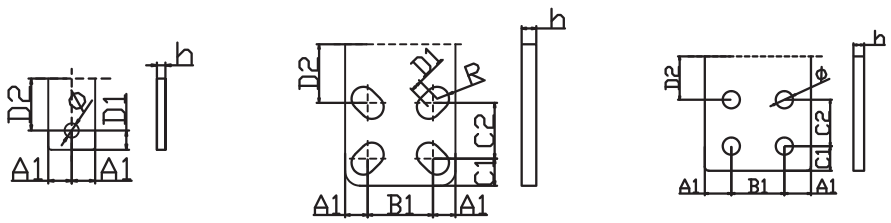
e) Installation category is IV; horizontal power incoming terminal;

f) Environmental category is B. Install the machine by avoiding rain and snow, and obvious vibration.

3.2 Dimensions

3.2.1 Overall and Installation Dimensions



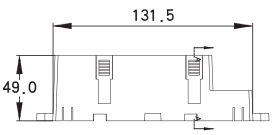


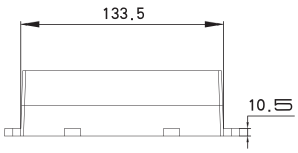
100A~800A 1000A~1600A 2000A~3200A

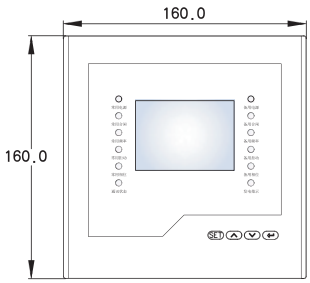
Dimensional Parameters / Frame Type Classification			External Dimensions			Installation Dimensions			Copper Busbar Dimensions								
			W1	L2	H	a	b	c	A1	B1	C1	C2	D1	D2	R	Φ	h
100AF	2P/3P		233	118	141	215	83	6.5	6.5	/	/	/	8	10.2	/	6	2.55
	4P		243	116		230			7	/	/	/	8	10.2	/	6	2.55
160AF	2P/3P		265	142	195	245	102	7	10	/	/	/	10	15	/	8.5	3.5
	4P		305	147		284			10	/	/	/	10	15	/	8.5	3.5
250AF	2P/3P		312	176	210	292	106	7	12.5	/	/	/	13.5	15.5	/	10.5	3.5
	4P		370	164	195	347	102		12.5	/	/	/	13.5	15.5	/	10.5	3.5
800AF	800 3P		375	287	267	350	180	9	22.5	/	/	/	22	31	/	12.5	6
	800 4P		435			412			22.5	/	/	/	22	31	/	12.5	6
1600AF	3P	630-1000A	520	350	325	496	220	11	12	36	15	30	6	20	6	/	8
		1250A		370					22	36	18	30	6	22	6	/	8
		1600A							22	36	18	30	6	22	6	/	10
	4P	630-1000A	635	350		606			12	36	15	30	6	20	6	/	8
		1250A		370					22	36	18	30	6	22	6	/	8
		1600A							22	36	18	30	6	22	6	/	10
3200AF	3P	2000A	540	420	505	495	219	11	20	40	18	35	/	57	/	13	10
		2500A		430					20	40	18	35	/	62	/	13	10
		3200A		440					20	40	18	35	/	65	/	13	18
	4P	2000A	640	420		610			20	40	18	35	/	57	/	13	10
		2500A		430					20	40	18	35	/	62	/	13	10
		3200A		440					20	40	18	35	/	65	/	13	18

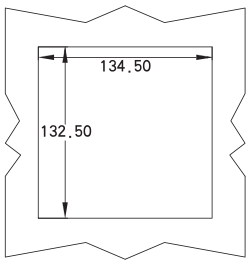
Frame Type Classification / Dimensional Parameters			Other Dimensions																			
			W	W2	W3	W4	W5	P	Y	ΦD	L	L1	L3	L4	H1	H2	H3	H4	H5	T	T1	G
100AF	2P/3P		255	124	82	24.5	102	30	13	7	107	53.5	103	45	117	40	40	93	170	2.5	2.5	115
	4P		270						14				99.5	43		68					5	
160AF	2P/3P		320	160	91	30.5	110	37	20	8.5	140	76.5	122	53	164	59	57	130	230	3.5	3.5	144
	4P		348	156.5		34	115					77	126	60		55	58					
250AF	2P/3P		362	165	94	32	110	50	25	10	140	76.5	148	70	180.5	64	65	146	244.5	3.5	3.5	144
	4P		412		91	35	115					77	140	65	163	57	57	130	225			
800AF	800 3P		525	186	88,.5	45	124	65	45	12	220	115	243	116	237	81	83	193	297	6	6	250
	800 4P		590	181																		
1600AF	3P	630-1000A	780	190	84.5	44	123	120	60	-	250	125	-	-	293	255	108	250	385	8	8	540
		1250A							80													
		1600A															109	251		10	10	
	4P	630-1000A	1080	188					60								108	250		8	8	
		1250A							80													
		1600A															109	251		10	10	
3200AF	3P	2000A	785	202	87	44	120	120	80	-	248	100	-	-	473	80/435	80/200	315/435	560	10	10	540
		2500A														85/440	85/205	320/440		15	15	
		3200A														90/445	90/210	325/445		20	20	
	4P	2000A	1080													80/435	80/200	315/435		10	10	
		2500A														85/440	85/205	320/440		15	15	
		3200A														90/445	90/210	325/445		20	20	

3.2.2 Cutout Dimensions for Split Controller



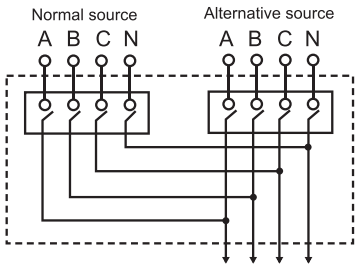




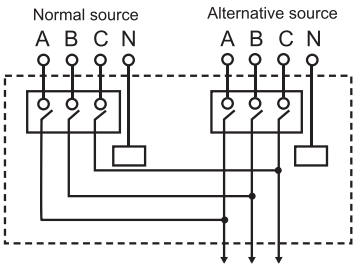


3.3 Product wiring diagram

3.3.1 Main circuit wiring diagram

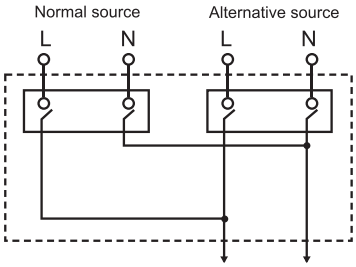


4P wiring diagram



3P wiring diagram

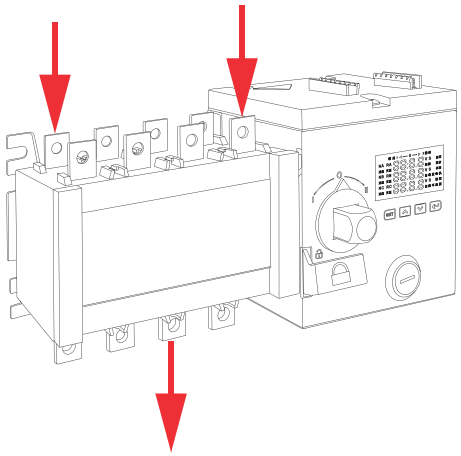
3P ATSE
P type : Normal source N poles connect with terminal 105, Alternative source 103
G type： Normal source N poles connect with terminal 103, Alternative source 303
D type： Normal source N poles connect with terminal 15, Alternative source 08



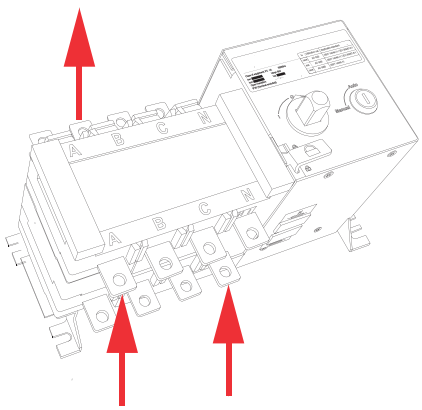
2P wiring diagram

Note: 2-pole (2P) products are not available for circuit breaker frames rated above 250A

3.3.2 Cable entry



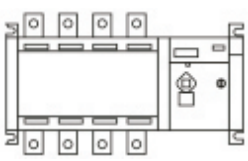
Top entry



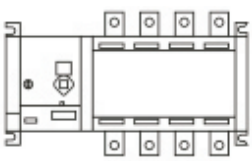
Bottom entry

3.3.3 Installation direction

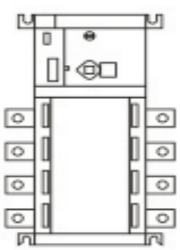
Recommended orientation

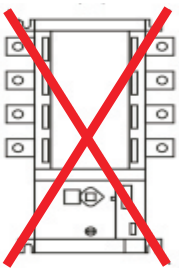


OK

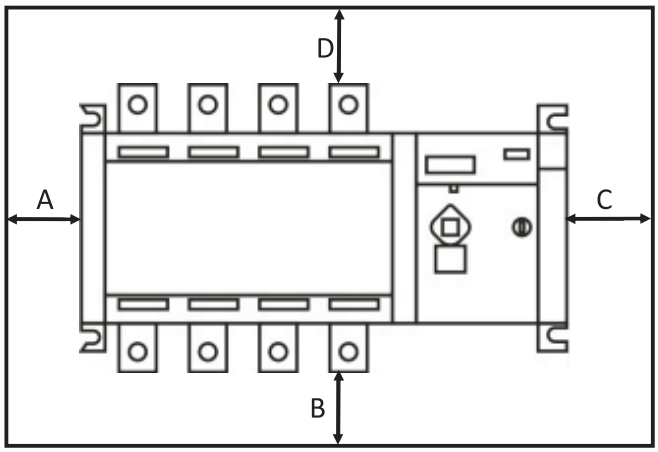


OK





3.3.4 Safety distance



	A	B	C	D
100	0	40	0	40
160	0	55	0	55
250	0	55	0	55
800	0	85	0	70
1600	0	120	0	80
3200	0	130	0	130

3.3.5 Installation instruction

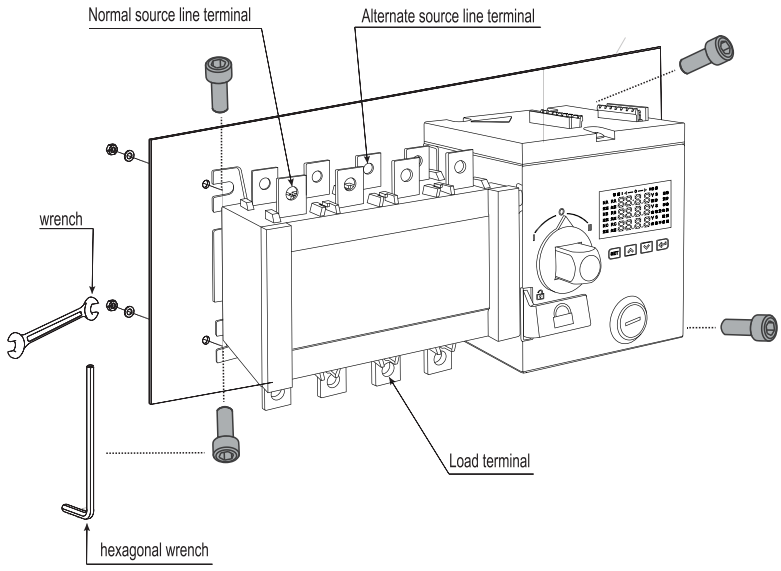
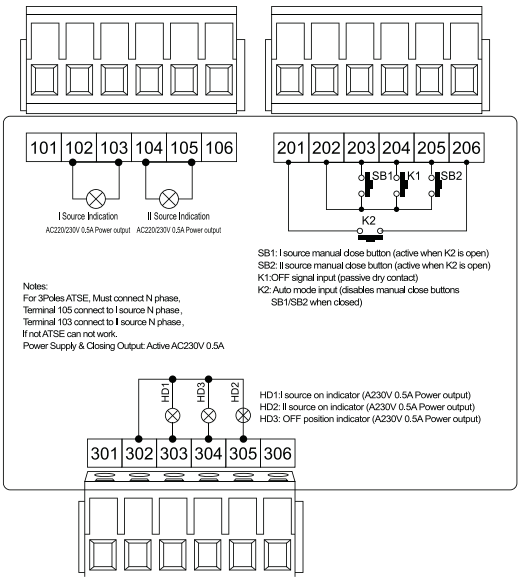


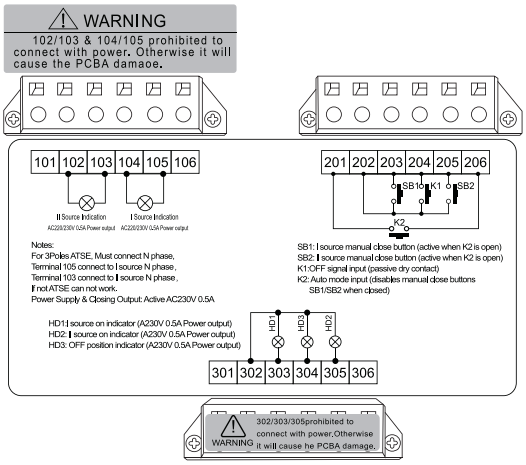
Figure 2 HDQ1S 100~3200 Normal Power, Alternative Power, Outgoing Side Wiring and Product Installation

3.36 Terminal wiring diagram

HDQ1S ATS P type
100~3200AF Terminal description



100 P type

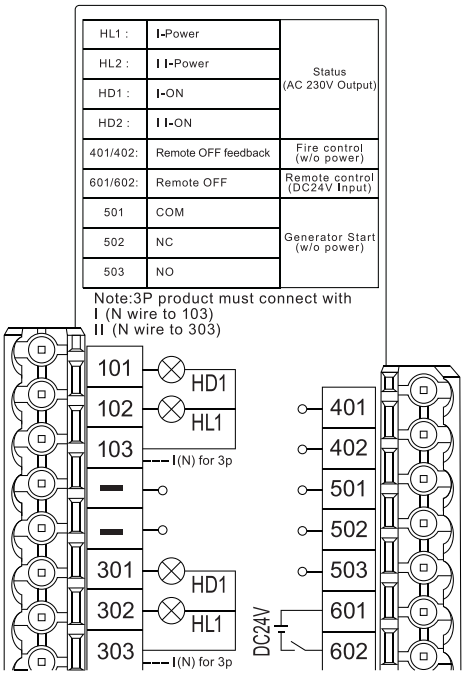


160~3200 P type

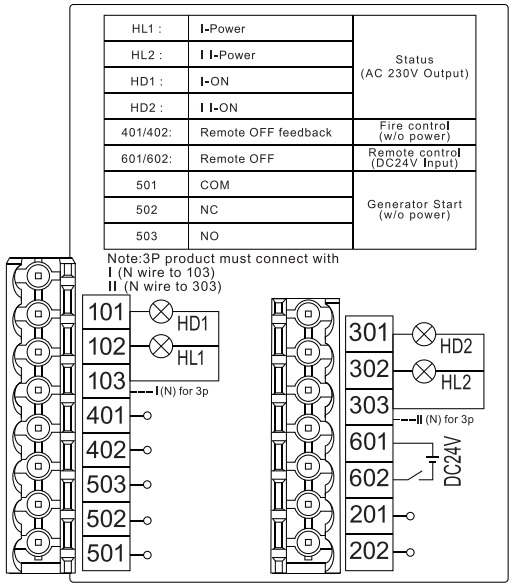
Denomination	Terminal	Description	Characteristics	Recommended Cable Section
ATS Power status output	101	Unused terminal, no operational purpose		
	102	Source II Indication if closed with 103	AC230V 0.5A Power output	1.5-2.5mm^2
	103	Source II N Poles for 3P ATS	AC230V 0.5A Power output	1.5-2.5mm^2
	104	Source I Indication if closed with 105	AC230V 0.5A Power output	1.5-2.5mm^2
	105	Source I N Poles for 3P ATS	AC230V 0.5A Power output	1.5-2.5mm^2
	106	Unused terminal, no operational purpose		
ATS Control Input	201	Default connected to 206 and operates in Auto mode, if cancel the connect, ATS will enter Romote Control mode	Dry Contacts	1.5-2.5mm^2
	202	Common control terminal for 203-205	Dry Contacts	1.5-2.5mm^2
	203	Position I order if closed with 202 (only works when 201-206 unconnected)	Dry Contacts	1.5-2.5mm^2

Denomination	Terminal	Description	Characteristics	Recommended Cable Section
ATS Control Input	204	Position OFF order if closed with 202	Dry Contacts	1.5-2.5mm^2
	205	Position II order if closed with 202 (only works when 201-206 unconnected)	Dry Contacts	1.5-2.5mm^2
	206	Default connected to 201 and operates in Auto mode, if cancel the connect, ATS will enter Romote Control mode	Dry Contacts	1.5-2.5mm^2
ATS Output Contacts	301	Unused terminal, no operational purpose		
	302	Common control terminal for 303-305	AC230V 0.5A Power output	1.5-2.5mm^2
	303	Aux contact position I (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	304	Aux contact position OFF (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	305	Aux contact position II (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	306	Unused terminal, no operational purpose		

HDQ1S ATS G type
100~3200AF Terminal description



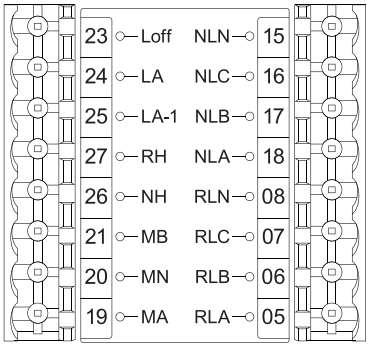
100~250 G type

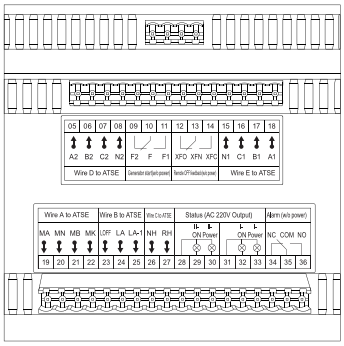


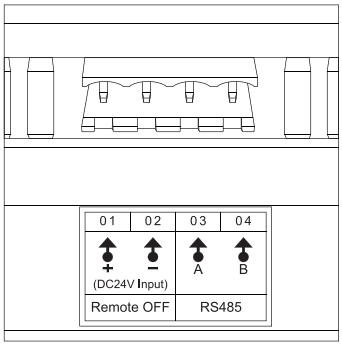
800~3200 G type

Denomination	Terminal	Description	Characteristics	Recommended Cable Section
ATS Power status I output	101	Aux contact position I ON (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	102	Aux contact position I (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	103	Common control terminal for 101-102 & source I N poles for 3Poles ATS	AC230V 0.5A Power output	1.5-2.5mm^2
MODBUS Module (Optional)	201	B-: RS485 MODBUS communication module terminals, Default disabled		
	202	A+: RS485 MODBUS communication module terminals, Default disabled		
ATS Power status II output	301	Aux contact position II ON (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	302	Aux contact position II (Normally open contact)	AC230V 0.5A Power output	1.5-2.5mm^2
	303	Common control terminal for 101-102 & source II N poles for 3Poles ATSA	C230V 0.5A Power output	1.5-2.5mm^2
Fire OFF singal feedback output	401	Aux contact position OFF, closed with 402 (Normally open contact)	Dry Contacts	1.5-2.5mm^2
	402	Aux contact position OFF, closed with 401 (Normally open contact)	Dry Contacts	1.5-2.5mm^2
Generator Start/Stop signal(Defaut distabled)	501	Common terminal for 503-503		
	502	Defaut distabled, NC contact.(501/502), when Generator function Open, NO contact.(501/502)		
	503	Defaut distabled, NO contact.(501/503), when Generator function Open, NC contact.(501/503)		
Fire OFF signal input	601	Fire OFF signal, position OFF order if closed with 602	DC24V	1.5-2.5mm^2
	602	Fire OFF signal, position OFF order if closed with 601	DC24V	1.5-2.5mm^2

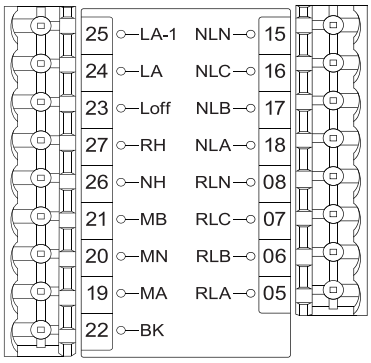
HDQ1S ATS D type
100~3200AF Terminal description

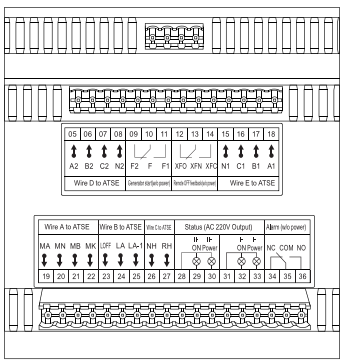


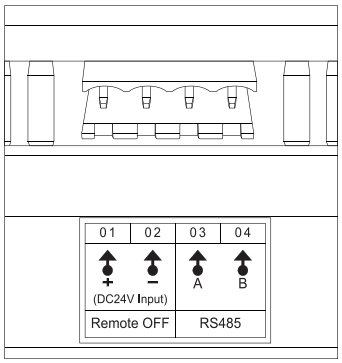




100~250 D type





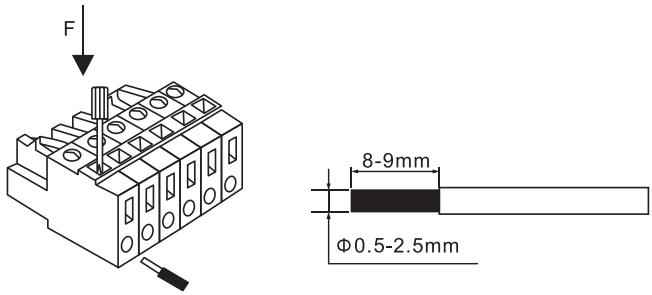


800~3200 D type

Denomination	Terminal	Description	Characteristics	Recommended Cable Section
Fire OFF signal input	01	Fire OFF signal, position OFF order if closed with 02	DC24V	1.5-2.5mm^2
	02	Fire OFF signal, position OFF order if closed with 01	DC24V	1.5-2.5mm^2
MODBUS Module	03	A+: RS485 MODBUS communication module terminals, Default disabled		1.5-2.5mm^2
	04	B-: RS485 MODBUS communication module terminals, Default disabled		1.5-2.5mm^2
ATS source II Input	05	Source II, Phase A input		(Connect with the ATS body by Connect Cable)
	06	Source II, Phase B input		
	07	Source II, Phase C input		
	08	Source II, Phase N input		

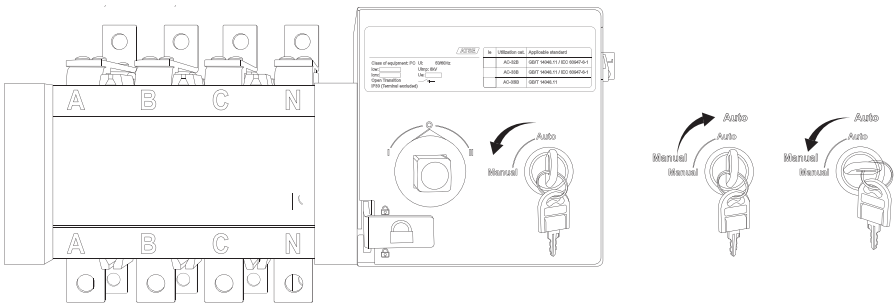
Denomination	Terminal	Description	Characteristics	Recommended Cable Section
Generator Start /Stop signal (Defaut distabled)	09	Defaut distabled, NC contact.(09/10), when Generator function Open, NO contact.(09/10)		1.5-2.5mm^2
	10	Common terminal for 09 & 11		1.5-2.5mm^2
	11	Defaut distabled, NO contact.(11/10), when Generator function Open, NC contact.(11/10)		1.5-2.5mm^2
Fire OFF singal feedback output	12	Aux contact, NO contact.(12/13)		1.5-2.5mm^2
	13	Common terminal for 12 & 14		1.5-2.5mm^2
	14	Aux contact, NC contact.(14/13)		1.5-2.5mm^2
ATS source I Input	15	Source I, Phase N input		(Connect the ATS body by Connect Cable)
	16	Source I, Phase C input		
	17	Source I, Phase B input		
	18	Source I, Phase A input		
Motorisation Module Control Inputs	19	Terminals 19-22 are used to control and drive the ATS motorisation Module.		
	20			
	21			
	22			
Function Mode Interface (Limit Switch & OFF position)	23	Terminals 23-25 are used to transmit the limit switch & OFF position signal from ATS body to controller		(Connect the ATS body by Connect Cable)
	24			
	25			
ATS source I & II ON	26	Terminals 26-27 are used to monitor the source I & source II ON status		
	27			
ATS Power status II output	28	Common control terminal for 29 & 30		1.5-2.5mm^2
	29	Aux contact position II ON (Normally open contact)		1.5-2.5mm^2
	30	Aux contact position II (Normally open contact)		1.5-2.5mm^2
ATS Power status I output	31	Common control terminal for 32 & 33		1.5-2.5mm^2
	32	Aux contact position I ON (Normally open contact)		1.5-2.5mm^2
	33	Aux contact position I (Normally open contact)		1.5-2.5mm^2
Alarm signal output	34	Aux contact, NC contact.(34/35)		1.5-2.5mm^2
	35	Common control terminal for 34 & 36		1.5-2.5mm^2
	36	Aux contact, NO contact.(36/35)		1.5-2.5mm^2

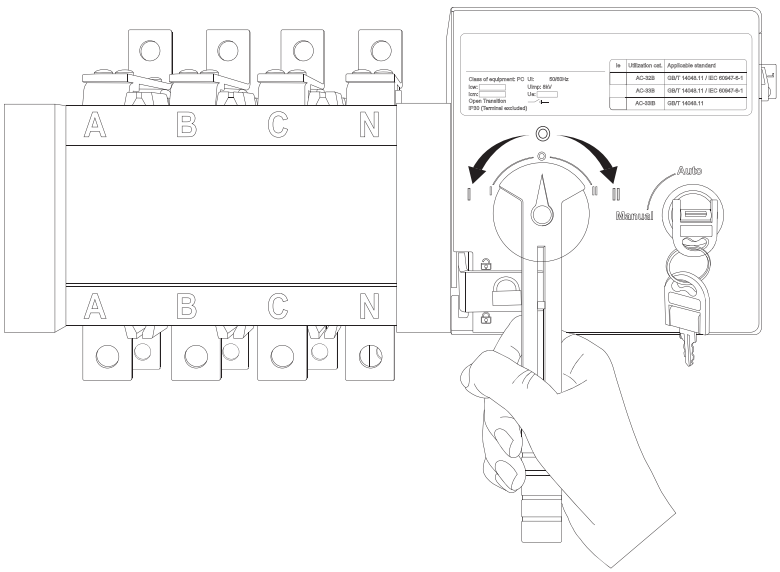
Using a small flat-head screwdriver, apply downward force to insert the wire into the slot as shown in the diagram.

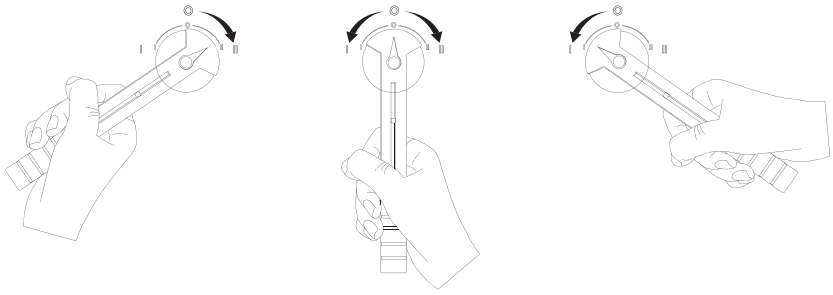


4 Operation

4.1 Manual operation







4.2 Auto operation

4.2.1 100~3200AF P type Power-Power

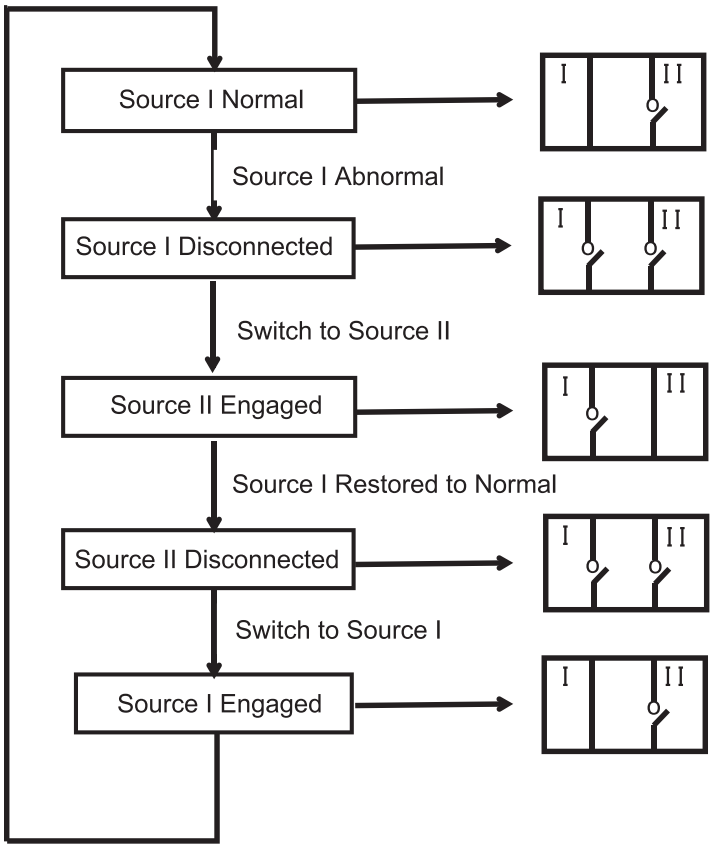
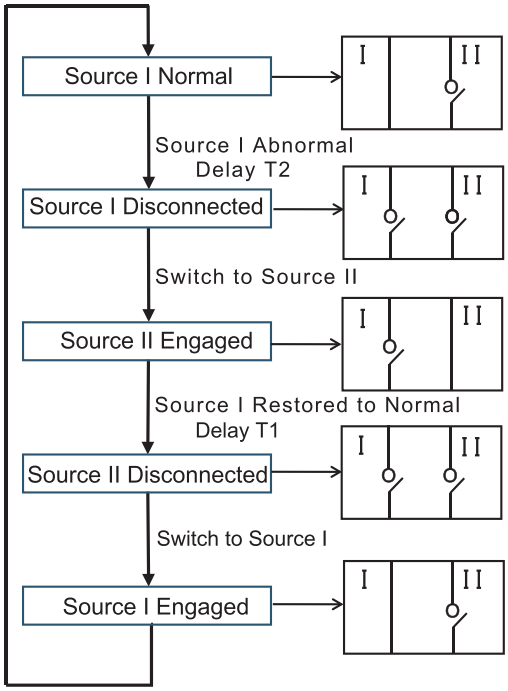


Figure 3 HDQ1S 100~3200AF P type Power-Power

4.2.2 100~3200AF G、D type Power-Power、Power-Generator



T1：Source I recovery to Source I switch-on time.
T2：Source II recovery to Source II switch-on time.
T3：Time to start generator upon Source I failure.
T4：Time to stop generator after Source I restoration.
Notes：
Source I: Primary Power Source
Source II: Alternative Source
T1：Adjustable range: 0–90s.
T2：Adjustable range: 0–90s.
T3：Adjustable range: 0–240s.
T4：Adjustable range: 0–240s.

Figure 4 HDQ1S 100~3200AF G、D type Power-Power

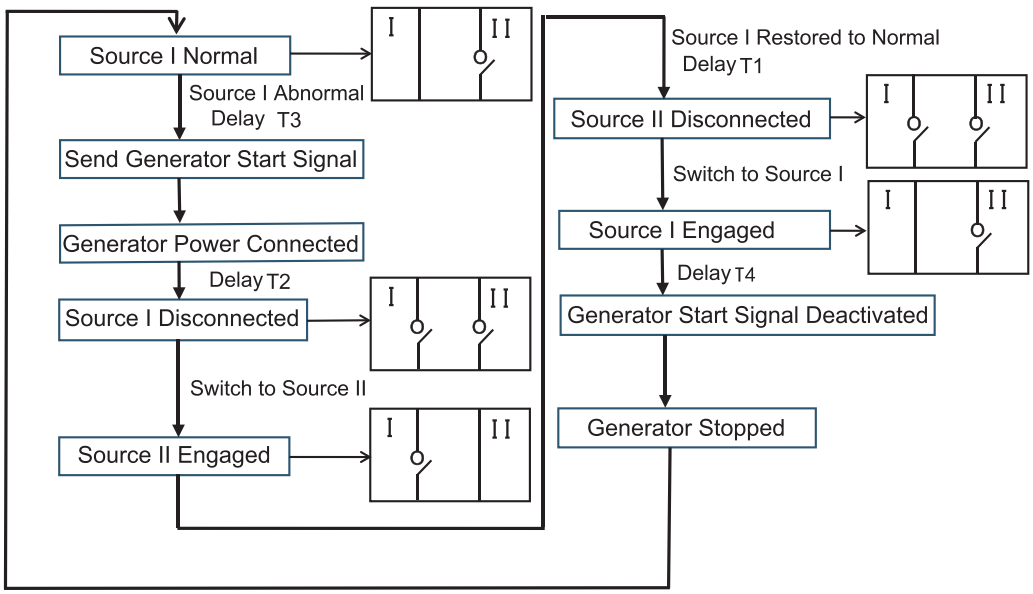
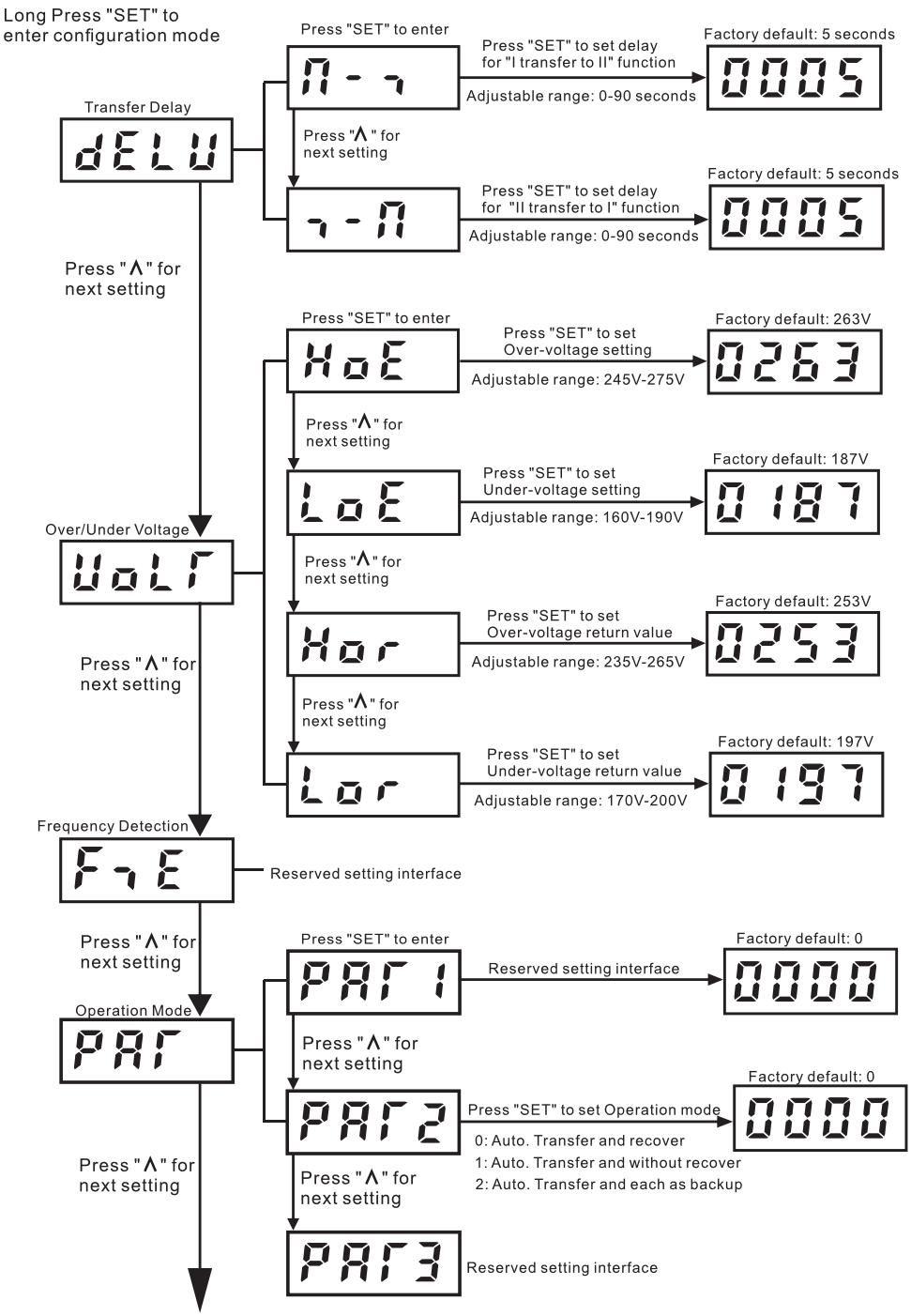
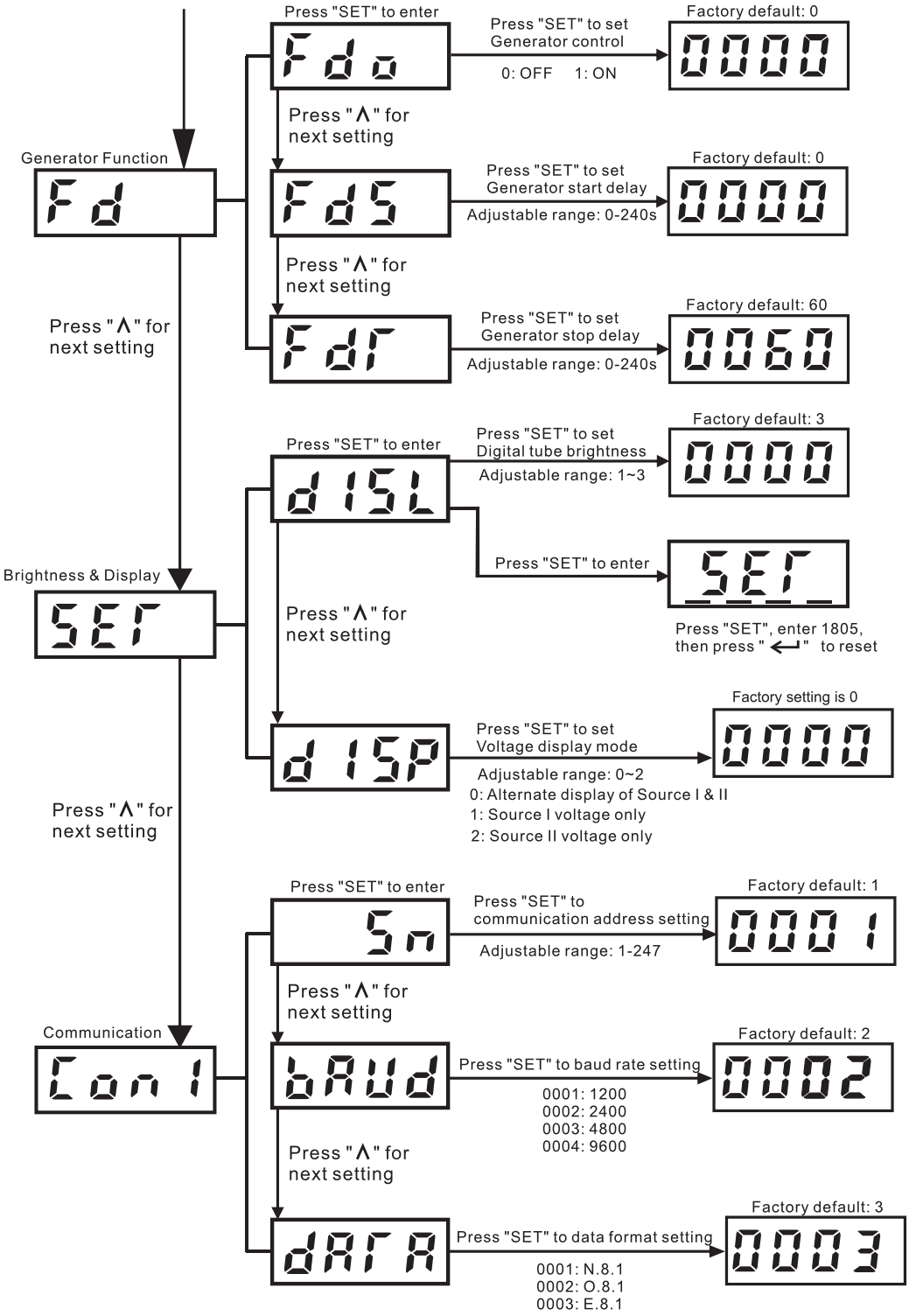


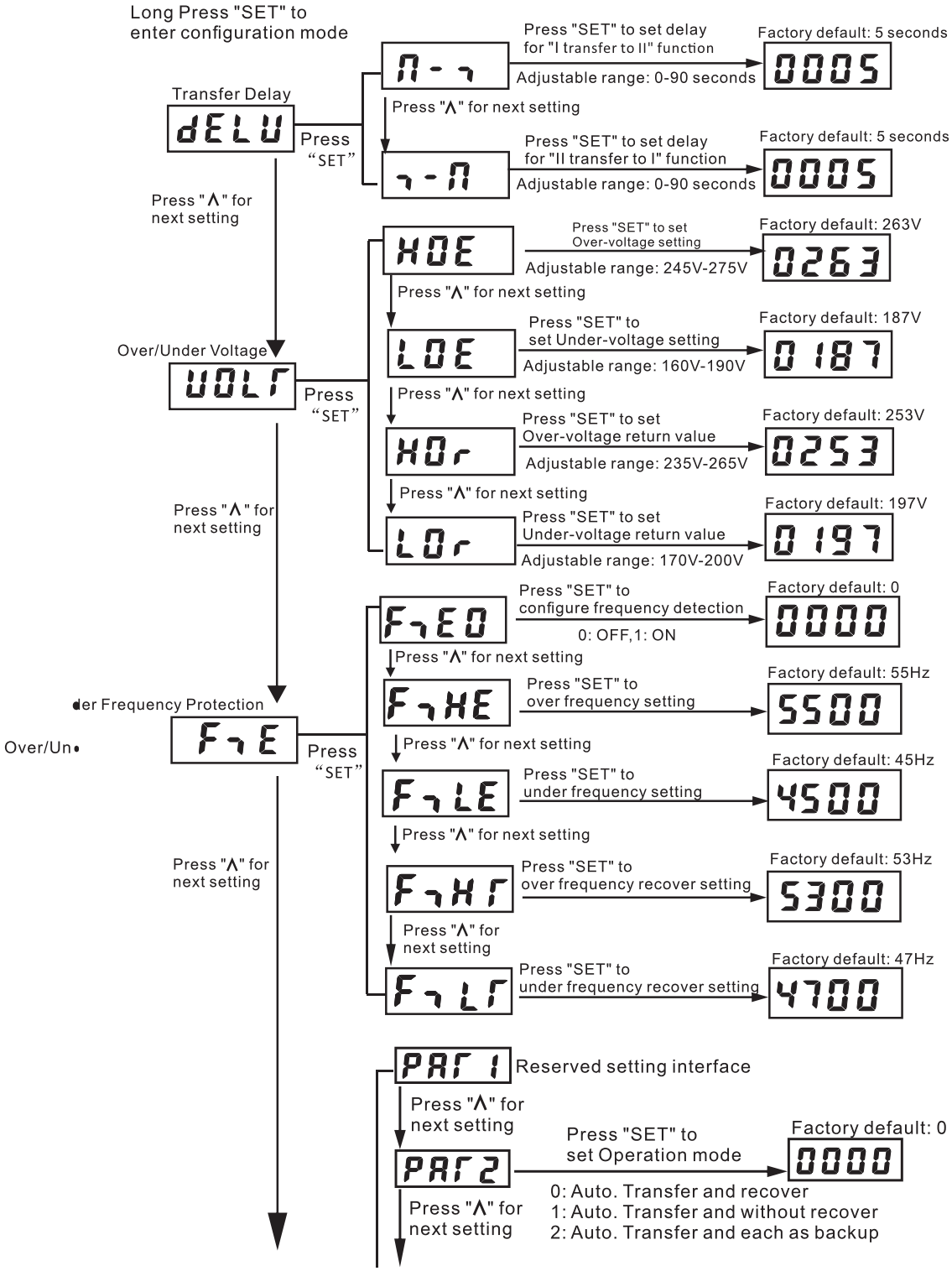
Figure 5 HDQ1S 100~3200AF G、D type Power-Generator

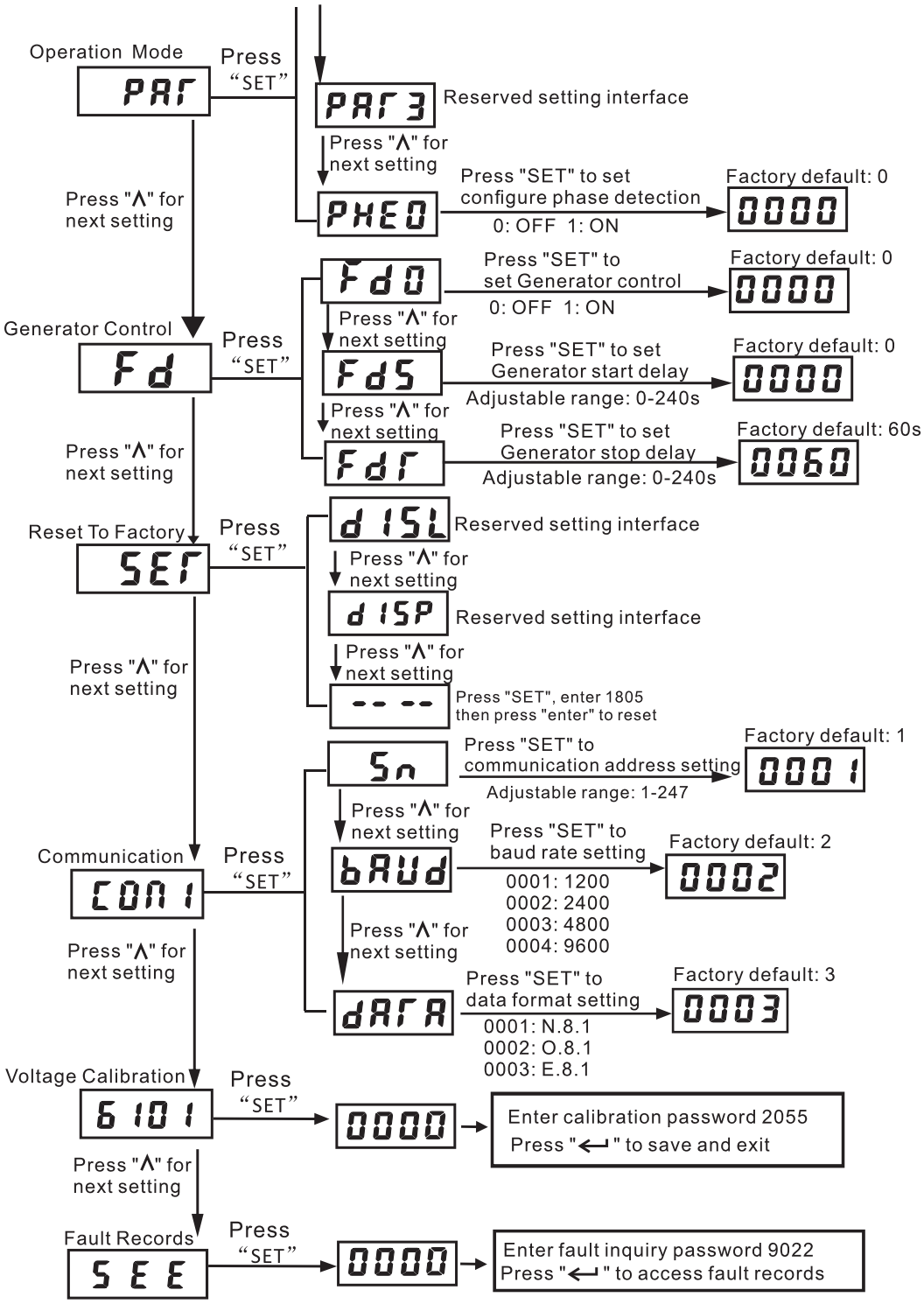
4.3 G type controller configuration




Generator Function
Fd
Press "SET" to enter
Fdo
Press "SET" to set Generator control
0: OFF 1: ON
Factory default: 0
0000
Press "∧" for next setting
FdS
Press "SET" to set Generator start delay
Adjustable range: 0-240s
Factory default: 0
0000
Press "∧" for next setting
FdT
Press "SET" to set Generator stop delay
Adjustable range: 0-240s
Factory default: 60
0060
Press "∧" for next setting
Brightness & Display
SET
Press "SET" to enter
diSL
Press "SET" to set Digital tube brightness
Adjustable range: 1~3
Factory default: 3
0003
Press "SET" to enter
SET
Press "SET", enter 1805, then press "↵" to reset
Press "∧" for next setting
diSP
Press "SET" to set Voltage display mode
Adjustable range: 0~2
0: Alternate display of Source I & II
1: Source I voltage only
2: Source II voltage only
Factory setting is 0
0000
Press "∧" for next setting
Communication
Con1
Press "SET" to enter
Sn
Press "SET" to communication address setting
Adjustable range: 1-247
Factory default: 1
0001
Press "∧" for next setting
bAUd
Press "SET" to baud rate setting
0001: 1200
0002: 2400
0003: 4800
0004: 9600
Factory default: 2
0002
Press "∧" for next setting
dATA
Press "SET" to data format setting
0001: N.8.1
0002: O.8.1
0003: E.8.1
Factory default: 3
0003

4.4 D type controller configuration




Operation Mode
PAr
Press "SET"
PAr 3
Reserved setting interface
Press "Λ" for next setting
PHEO
Press "SET" to set configure phase detection
0: OFF 1: ON
Factory default: 0
0000
Press "Λ" for next setting
Generator Control
Fd
Press "SET"
Fd0
Press "SET" to set Generator control
0: OFF 1: ON
Factory default: 0
0000
Press "Λ" for next setting
FdS
Press "SET" to set Generator start delay
Adjustable range: 0-240s
Factory default: 0
0000
Press "Λ" for next setting
FdT
Press "SET" to set Generator stop delay
Adjustable range: 0-240s
Factory default: 60s
0060
Press "Λ" for next setting
Reset To Factory
SET
Press "SET"
d ISL
Reserved setting interface
Press "Λ" for next setting
d ISP
Reserved setting interface
Press "Λ" for next setting
- - - -
Press "SET", enter 1805 then press "enter" to reset
Press "Λ" for next setting
Communication
CON 1
Press "SET"
Sn
Press "SET" to communication address setting
Adjustable range: 1-247
Factory default: 1
0001
Press "Λ" for next setting
bAUd
Press "SET" to baud rate setting
0001: 1200
0002: 2400
0003: 4800
0004: 9600
Factory default: 2
0002
Press "Λ" for next setting
dATA
Press "SET" to data format setting
0001: N.8.1
0002: O.8.1
0003: E.8.1
Factory default: 3
0003
Press "Λ" for next setting
Voltage Calibration
6101
Press "SET"
0000
Enter calibration password 2055
Press "↵" to save and exit
Press "Λ" for next setting
Fault Records
SEE
Press "SET"
0000
Enter fault inquiry password 9022
Press "↵" to access fault records

5 Fault Record Code

"Fault Code Quency Example:
0108 means "" source phase B loss""
The ""01"" is a record count, while ""08"" indicites the specific fault.
Recent codes appear first, and after 30 entries, the oldest ones are overwritten."

No.	Fault conetnts
01	I source phase A over-voltage
02	I source phase B over-voltage
03	I source phase C over-voltage
04	I source phase A under-voltage
05	I source phase B under-voltage
06	I source phase C under-voltage
07	I source phase A loss
08	I source phase B loss
09	I source phase C loss
10	II source phase A over-voltage
11	II source phase B over-voltage
12	II source phase C over-voltage
13	II source phase A under-voltage
14	II source phase B under-voltage
15	II source phase C under-voltage
16	II source phase A loss
17	II source phase B loss
18	II source phase C loss
19	I source frequency anomaly
20	II source frequency anomaly
21	I source phase sequence anomaly
22	II source phase sequence anomaly
23	I source refuse conversion
24	II source refuse conversion

6 Commitment

The Company agrees to repair or replace the instrument free of charge, if the instrument is damaged or cannot be used normally by manufacturing problems on the premise of user's normal use and storage, and complete company seal within 36 months since the date of production. We also provide charged repairing services after expiration of the warranty period. However, damage caused by the following circumstances shall be repaired for payment even within the warranty period:

a) Damages ascribed to improper use, maintenance and storage;

b) Damages ascribed to unauthorized modification or improper maintenance;

c) Damages ascribed to falling and installation process after purchasing;

d) Damages ascribed to force majeure events such as earthquake, fire, lightning, abnormal voltage and secondary disasters.

For any questions, please feel free to contact the dealer or our customer service department."