

Human Machine Interface YTPQC-HMI-7

User Manual

(Version: V650)

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1. Main Interface

This manual mainly introduces the functional components of the user interface and the user operation information. The user can make the related operation through touching the display panel.

The boot main interface is shown in Figure 1-1. Display the real-time data of the module running, including power data, load data and module data.



Figure 1-1 Boot Main Interface

The user can click the "Module & Para Setting" button to set module parameters and view data.

The user can click the "Event Log" button to view the various modules of on-off events and fault record.



2. Module Selection

Click the "Module & Para Setting" button, enter the parameter setting interface.

2.1 Module Number Setting

Click the "Module Setting" option, set the number of modules in the "Module Number" option box, the user can set the most six modules, as shown in Figure 2-1.

						Language Selection	
Module Number	6					Broadcast Mode	
Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module Setting	Return

Figure 2-1 Module Setting

2.2 Module Address Setting

The module interfaces are one-to-one correspondence with the module address. For example, the interface of module 1 corresponds to the module data of address 1, the interface of module 2 corresponds to the module data of address 2, and so on.

Click the "Module 1" option, the user can set all the running parameters of the module 1 and view all the data of the module 1, as shown in Figure 2-2.



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Status Indication:	Standby	\bigcirc	No Communication	System Mode	Single Module]	
Real-time Data	A Phase	B Phase	C Phase	External CT Position	Load Side	Ratio Setting	0:5
System Voltage	0V	0V	0V	Internal CT Position	Single Module	Ratio Setting	0:5
System Current	0A	0.A	0A		Manual allocation	1	1
Load Current	0A	0A	0A	Priority Mode	of capacity	Communitien	
System Voltage TH	D 0%	0%	0%	Reactive Compensation Function	Close	Capacity	0.A
Load Active Curren	nt OA	0A	0A			Target Cosp	0.00
Load Reactive Current	0A	0A	0A	Harm. Compensation	Full	Compensation Capacity	0A
Load Harmonic Current	0A	0A	0A	I diletion	Compensation	F)	Harmonic
Module Output Current	0A	0A	0A	Imb. Componentian	1	Compensation	Selection
IGBT's Temperature	0°	0°	0°	Function	Close	Capacity	0A
VBUS+	0V	VBUS-	0V	Start-up Mode	Button Start-up	Address	0
Software Version	0	Hardware Version	0	Phase Sequence Self-adaption	Close		
				Save Para	915	Power On	Power Off
Module 1	Module 2	Module 3	Module	4 Module 5	Module 6	Module Setting	Return

Figure 2-2 Module 1 Interface

Click the "Module 2" option, the user can set all the running parameters of the module 1 and view all the data of the module 2, as shown in Figure 2-3.

Status Indication:	Standby	\bigcirc	No Communication	System Mode	Single Module]	
Real-time Data	A Phase	B Phase	C Phase	External CT Position	Load Side	Ratio Setting	0:5
System Voltage	0V	0V	0V	Internal CT Position	Single Module	Ratio Setting	0:5
System Current	0A	0A	0A		Manual allocation	1	1
Load Current	0A	0A	0A	Priority Mode	of capacity	Communitien	
System Voltage THD	0%	0%	0%	Reactive Compensation Function	Close	Capacity	0A
Load Active Current	0A	0A	0A			Target Cosφ	0.00
Load Reactive Current	0A	0A	0A	Harm. Compensation	Full Companyation	Compensation Capacity	0A
Load Harmonic Current	0A	0A	0A	I diletion	Compensation	p j	Harmonic
Module Output Current	0A	0A	0A	Imb. Componistion		Compensation	Selection
IGBT's Temperature	0°	0°	0°	Function	Close	Capacity	0.A
VBUS+	0V	VBUS-	0V	Start-up Mode	Button Start-up	Address	0
Software Version	0	Hardware Version	0	Phase Sequence Self-adaption	Close		
				Save Para	ak.	Power On	Power Off
Module 1	Module 2	Module 3	Module 4	4 Module 5	Module 6	Module Setting	Return

Figure 2-3 Module 2 Interface



3. Module Parameter Setting

3.1 System Mode Setting

Click on Figure 2-2 "System Mode" option box, the Figure 3-1 will pop up.

System Mode
Single Module
Multi Module
Cancel



System mode is divided into single module and multiple module mode. When more than two modules are connected in parallel, multiple module mode is adopted.

3.2 External CT Position Selection

Click on Figure 2-2 "External CT Position" option box, the Figure 3-2 will pop up.





Figure 3-2 External CT Position Selection

The external CT position has two options: load side and power side, which are selected according to the actual installation position of the external CT.

LandSida	External CT is installed on the right side of the module bus access					
Load Side	point, close to the load.					
Power Side	External CT is installed on the left side of the module bus access					
	point, close to the transformer.					

3.3 Internal CT Position Selection

Click on Figure 2-2 "Internal CT Position" option box, the Figure 3-3 will pop up.

Internal CT Position	
Single Module	
Multi Module	
Cancel	
	Internal CT Position Single Module Multi Module Cancel

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Figure 3-3 Internal CT Position Selection

The internal CT position is divided into single module and multiple module mode. When more than two modules are connected in parallel, multiple module mode is adopted.

3.4 CT Ratio Setting

Click on Figure 2-2 "Ratio Setting" option box, the Figure 3-4 will pop up. CT variable ratio parameters range from 50:5 to 20000:5. When setting CT variable ratio parameters, if it is necessary to set 1200:5, directly enter "1200" and confirm.

numeric:									
Min:	0			Max:	65535				
1200									
7	8	9		В	<-				
4	5	6			CE				
1	2	3	Е		De1				
_	0		Exit	С)k				

Figure 3-4 CT Ratio Setting

The variable ratio of external CT and internal CT shall be set according to the transformer ratio, the number of modules and the rated capacity of modules. Modules with different capacities in parallel shall be set according to the rated capacity of the module.

For example, if the external CT variable ratio is 2000:5, the internal CT variable ratio is 800:5, and the number of parallel modules with the same capacity is 4, then the external CT variable ratio parameter of each module is 500:5, and the internal CT variable ratio parameter is 200:5.



3.5 Priority Mode Selection

Click on Figure 2-2 "Priority Mode" option box, the Figure 3-5 will pop up.

	Priority Mode Selection
	Manual Capacity Allocation
	Reactive Compensation Priority
	Imbalance Compensation Priority
	Harmonic Compensation Priority
10	Cancel

Figure 3-5 Priority Mode Selection

By default, the module is manual capacity allocation mode. In the mode of manual capacity allocation mode, the module compensates according to the capacity setting of each function compensation.

In the other three priority modes, the compensation capacity of all functions of the module should be set to the rated capacity. The module will compensate the specified items in priority. If there is any remaining capacity of the device after the compensation, it will be equally distributed to other items for compensation.

3.6 Reactive Compensation Function

Click on Figure 2-2 "Reactive Compensation Function" option box, the Figure 3-6 will pop up. Set the opening and closing of reactive compensation function.



Figure 3-6 Reactive Compensation Function

3.7 Harmonic Compensation Function

Click on Figure 2-2 "Harm. Compensation Function" option box, the Figure 3-7 will pop up.



Figure 3-7 Harmonic Compensation Function

The harmonic compensation mode includes compensation in sequence mode and all compensation mode.



compensation in	The module compensates only the selected odd harmonic current			
sequence	The module compensates only the selected out numbrie current.			
all componention	The module compensates all odd harmonic currents within 50			
	times.			

Click on Figure 2-2 "Harmonic Selection" button, the Figure 3-8 will pop up. The user can choose the harmonic compensation times.



Figure 3-8 Harmonic Selection

3.8 Imbalanced Compensation Function

Click on Figure 2-2 "Imb Compensation Function" option box, the Figure 3-9 will pop up. Set the opening and closing of imbalanced compensation function.



Figure 3-9 Imbalanced Compensation Function

3.9 Target Power Factor Setting

Click on Figure 2-2 "Target $\cos \phi$ " option box, the Figure 3-10 will pop up. Click to enter the target power factor.

numeric:									
Min: 0 Max: 1									
0. 00									
7	8	9		В	<-				
4	5	6	С		CE				
1	2	3	E	F	Del				
	0		Exit	0	k				

Figure 3-10 Target Power Factor Setting

3.10 Compensation Capacity Setting

Click on Figure 2-2 "Compensation Capacity" option box, the Figure 3-11 will pop up.



numeric:										
Min: -1e+10 Max: 1e+10										
0										
7	8	9		В	<-					
4	5	6			CE					
1	2	3	Е		Del					
-	0		Exit	C)k					

Figure 3-11 Compensation Capacity Setting

Description of compensation capacity parameter setting:

Reactive	Harmonic	Imbalanced	Module rated capacity				
Compensation	Compensation	Compensation					
Capacity	Capacity	Capacity					
Х	Y*1.4 Z		P=X+Y+Z				
	1. The compensation	capacity of each func	tion should be				
	set according to the actual demand, in units of A (ampere)						
	(1kvar= 1.5A).						
Instructions	2. The reactive compensation capacity (X), harmonic						
Instructions	compensation capacity (Y) and imbalanced compensation						
	capacity (Z) of all parallel modules must be consistent.						
	3. When the harmonic compensation capacity is set, the						
	coefficient of 1.4 shall be multiplied.						

3.11 Start-up Mode Setting

Click on Figure 2-2 "Start-up Mode" option box, the Figure 3-12 will pop up.





Figure 3-12 Start-up Mode Setting

The module has three modes of communication start-up, automatic start-up and button start-up.

Start-up Mode	Instructions
Automatic Start-up	In this mode, the device is powered up automatically and can be shut down through the cabinet button or the LCD screen.
Button Start-up	In this mode, the device cannot be started automatically when it is powered on. It can be turned on or off through the cabinet button or the LCD screen.
Communication Start-up	In this mode, the device cannot be started automatically when it is powered on. It can be turned on or off through the cabinet button or the LCD screen(the function is exactly the same as that of the button start-up).

3.12 Phase Sequence Self-adaption Setting

Click on Figure 2-2 "Phase Sequence Self-adaption" option box, the Figure 3-13 will pop up. Select on or off as needed.



Figure 3-13 Phase Sequence Self-adaption Setting

3.13 Save Para Button

When the module parameter setting is completed, click on Figure 2-2 "Save Para"button, then the module will have a restart process, which can be judged by the operation of the fan.



4. Event Log

Enter the event logging interface as shown in Figure 4-1. The event recording interface can view the status of the module's on-off event and the faults occurred during operation. It includes the detailed time of failure, fault code, fault name and key system parameters. Click on the horizontal slider " \blacktriangleleft "and" \triangleright " to see the corresponding parameter information, and the vertical slider" \blacktriangle " and " \checkmark " to see more event records.

	Event Name	VBUS+	VBUS-	Ifa	Ifb	Ifc	Temp_A	Temp_B	Temp_C	
										i.
										ł
			-	_	_		-		1	10
<									>	1.0

Figure 4-1 Event Log



5. Description of Typical Application Parameter Setting

5.1 Mode Selection and CT Setting

(1) Parameter setting for single module application

		External	Internal		
Application	System	СТ	СТ	External CT	Internal CT
scenarios	Mode	Position	Position	Variable	Variable
		Selection	Selection	Ratio	Ratio
		Serection			
CT to load	Single	Load			
side	Module	Side	Single	the actual	the actual
CT to	Single	Power	Module	CT ratio	CT ratio
power side	Module	Side			

(2) Related parameter setting for parallel application of multiple modules

		External	Internal		I I CT
Application	System	СТ	СТ	External CT	Internal CT
scenarios	Mode	Position	Position	Variable	Variable
section 105	Wiede			Ratio	Ratio
		Selection	Selection		
CT to load	Multiple	Load		the actual	the actual
side	Module	Side	Multiple	CT ratio	CT ratio
CT to	Multiple	Power	Module	/the module	/the module
power side	Module	Side		number	number

5.2 Module Compensation Capacity Setting

For example, when a 75A APF module is used alone to compensate reactive power 25A and harmonic 50A, the reactive power compensation capacity =25A, the harmonic compensation capacity =70A (50A*1.4), and the unbalanced compensation capacity =0A.



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Reactive	Harmonic	Imbalanced	Module rated				
CompensationCapaci	CompensationCapaci	CompensationCapa	capacity				
ty	ty	city	сарасну				
Х	Y*1.4	Y*1.4 Z					
Instructions	 Y*1.4 Z P=X+Y+Z The compensation capacity of each function should be set according to the actual demand, in units of A (ampere) (1kvar= 1.5A). The reactive compensation capacity (X), harmonic compensation capacity (Y) and imbalanced compensation capacity (Z) of all parallel modules must be consistent. When the harmonic compensation capacity is setted, the 						