

### Automatic Power Factor Controller Relay

**CE** 7UG0  
IEC 60947-5-1



Please read and understand these instructions before installing, operating, or maintaining the equipment.	
	<b>DANGER</b> Hazardous voltage can cause death or serious injury. Disconnect power before working on equipment.
	<b>CAUTION</b> Reliable functioning of the equipment is only ensured with certified components. Overvoltage category III (Refer IEC 60947-1)
<b>NOTICE</b> This product has been designed for environment A. Use of this product in environment B may cause unwanted electromagnetic disturbances in which case the user may require to take adequate mitigation measures.	

### Technical Data

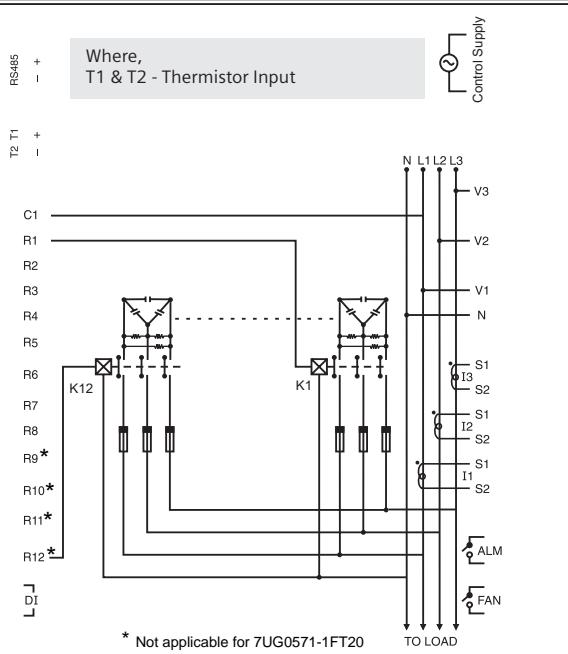
Designation	7UG0571-1FT20	7UG0572-1GT20
Type	Automatic Power Factor Controller	
Operating range	50 to 440 VAC (L-L) 30 to 250 VAC (L-N)	
AC Network	3Φ 4W / 3Φ 3W / 2Φ 2W / 1Φ 2W	
Display parameters	Power Factor, True RMS voltage, Current, Frequency, Power (KW, KVA, KVAr), Energy (KWh, KVAh), Temperature	
Control Supply	90 to 250 VAC, 50/60Hz	
Power consumption	15VA	
Frequency range	50/60Hz	
Operating temperature	0°C to 60°C	
Humidity	upto 95% ,without moisture condensation	
Alarm mode (relay output)	Over voltage, Under voltage, Over Compensate, Under Compensate, CT Polarity error, No Voltage, Step error, Over Temperature	
Trip indication	Backlight turns to Orange	
No. of relay outputs	8 (Additional 2 for Alarm and Fan)	12 (Additional 2 for Alarm and Fan)
Rated current of relay outputs (@250VAC)	5A* (AC12), 1A (AC15)	
CT Burden	20 mohms	
Switching program	Automatic / Linear / Rotational	
Mounting	Panel mounting	
SCPD for relay output (For Short circuit current of 1kA as per IEC 60947-5-1)	6A, gL, HRC fuse	

\* 5A AC12 rating is for individual relay contact. If multiple relays are ON, relay AC12 rating will be limited to 1.2A @ 250V.

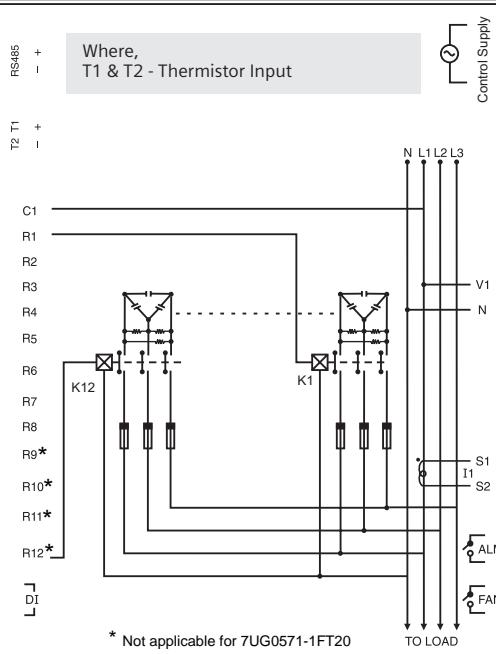
## Terminal connections

### Wiring Diagram

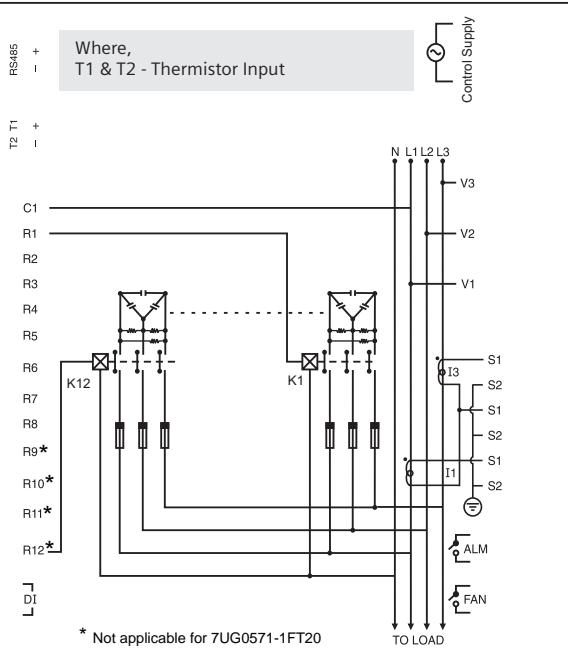
3 Phase - 4 Wire



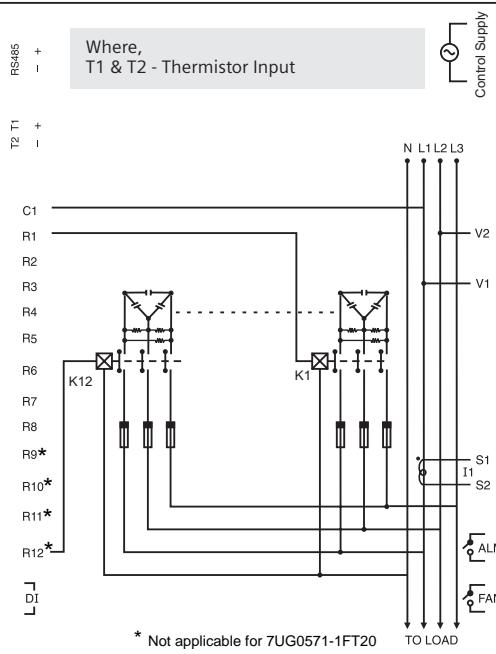
1 Phase - 2 Wire



3 Phase - 3 Wire



2 Phase - 2 Wire



NOTE : • For N/W selection 2P2W voltage ( $V_u$ ) applied between V1 & V2 and connect CT for I1 [ Do not use V3, N, I2 & I3 terminal ]

• For N/W selection 1P2W voltage ( $V_u$ ) applied between V1 & N and connect CT for I1 [ Do not use V2, V3, I2 & I3 terminal ]

	7UG057..	
L, N, V*, I*, R*, C, NO	RS485, T1, T2	
	0.5 Nm	0.4 Nm
Solid	1 x (0.75 to 2.5) mm <sup>2</sup> 2 x 0.5 to 2 x 1.5 mm <sup>2</sup>	0.5 mm <sup>2</sup>
Stranded with end sleeve	1 x (0.5 to 2.5) mm <sup>2</sup> 2 x (0.5 to 1.5) mm <sup>2</sup>	0.5 mm <sup>2</sup>

Note: The distance between APFC and external Current transformer should be kept as short as possible. Use shielded cable or twisted pair cable between APFC and Current transformer for long distance (Greater than 1m).

### Serial Communication

Interface standard and protocol	RS485 AND MODBUS RTU
Communication address	1 to 255
Transmission Mode	Half duplex
Data types	Float and Integer
Transmission distance	500 Meter maximum
Transmission speed	300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2

## Front Panel description

Front Panel Description	
SIEMENS	
	<b>Key Description</b>
Press  &	For 3 sec. to enter or exit from the configuration menu.
Press	For increment
Press	To move cursor right by one digit each time after last digit of display cursor shift at 1st digit of display.
Press	To save the setting and move on to next page
Press	To go back

Online Page Description		
Key Press	Parameter Key	Description For 3P4W
		Displays line to neutral voltage of 3 phases.
		Displays line to line voltage of 3 phases.
		Displays % THD of line to neutral voltage of 3 phases.
		Displays % THD of line to line voltage of 3 phases.
		Displays current of 3 phases.
		Displays % THD of current of 3 phases.
Press ( key (1st time)		Displays line to neutral avg. voltage, current & frequency.
		Displays line to line avg. voltage, current & frequency.
		Displays power factor of 3 phases.
Press ( key (2nd time)		Displays active power of 3 phases.
		Displays reactive power of 3 phases.
		Displays apparent power of 3 phases.
Press ( key (3rd time)		Displays active energy.
		Displays apparent energy.
		Displays reactive energy.
		Displays temperature.
Key Press	Parameter Key	Description For 3P3W
		Displays line to line voltage of 3 phases.
		Displays % THD of line to line voltage of 3 phases.
		Displays current of 3 phases.
		Displays % THD of current of 3 phases.
Press ( key (1st time)		Displays line to line avg. voltage, current & frequency.
		Displays avg. power factor of 3 phases.
Press ( key (2nd time)		Displays total active power.
		Displays total reactive power.
		Displays total apparent power.
Press ( key (3rd time)		Displays active energy.
		Displays apparent energy.
		Displays reactive energy.
		Displays temperature.
Key Press	Parameter Key	Description For 1P2W
		Displays line to neutral voltage of 1st phase.
		Displays % THD of line to neutral voltage of 1st phase.
		Displays current of 1st phase.
		Displays % THD of current of 1st phase.
Press ( key (1st time)		Displays power factor of 1st phase & frequency.
		Displays active power of 1st phase.
Press ( key (2nd time)		Displays reactive power of 1st phase.
		Displays apparent power of 1st phase.

## Test Mode

Press & for 3 Sec. to enter in Test Mode.

NOTE : Test mode checks all the relays present in product sequentially.  
Turn ON DI manually when the DI CHECK page is displayed. DI status will be displayed & returns to online page.

## Configuration

There are 4 dedicated keys , , , .

Use these 4 keys to enter into configuration menu / change setting.  
NOTE : The setting should be done by a professional after going through this operating manual.

## Serial Number Description

Press ESC () key for 10sec. to display 8 digit serial number at 2<sup>nd</sup> & 3<sup>rd</sup> line of display.

## Online Page Mode Description

AUTO / MANUAL / DEFAULT MODE:  
Press OK () key for 3sec. to change online page mode.

		Displays active energy of 1st phase.
Press ( key (3rd time)		Displays apparent energy of 1st phase.
		Displays reactive energy of 1st phase.
		Displays temperature.
Key Press	Parameter Key	Description For 1P2W
		Displays line to neutral voltage of 1st phase.
		Displays % THD of line to neutral voltage of 1st phase.
		Displays current of 1st phase.
		Displays % THD of current of 1st phase.
Press ( key (1st time)		Displays power factor of 1st phase & frequency.
		Displays active power of 1st phase.
Press ( key (2nd time)		Displays reactive power of 1st phase.
		Displays apparent power of 1st phase.
		Displays active energy of 1st phase.
		Displays apparent energy of 1st phase.
		Displays reactive energy of 1st phase.
		Displays temperature.
Key Press	Parameter Key	Description For 2P2W
		Displays line to line voltage.
		Displays % THD of line to line voltage.
		Displays current.
		Displays % THD of current.
Press ( key (1st time)		Displays power factor and frequency.
		Displays total active power.
Press ( key (2nd time)		Displays total reactive power.
		Displays total apparent power.
		Displays active energy.
		Displays apparent energy.
		Displays reactive energy.
		Displays temperature..

## Backlight Indications

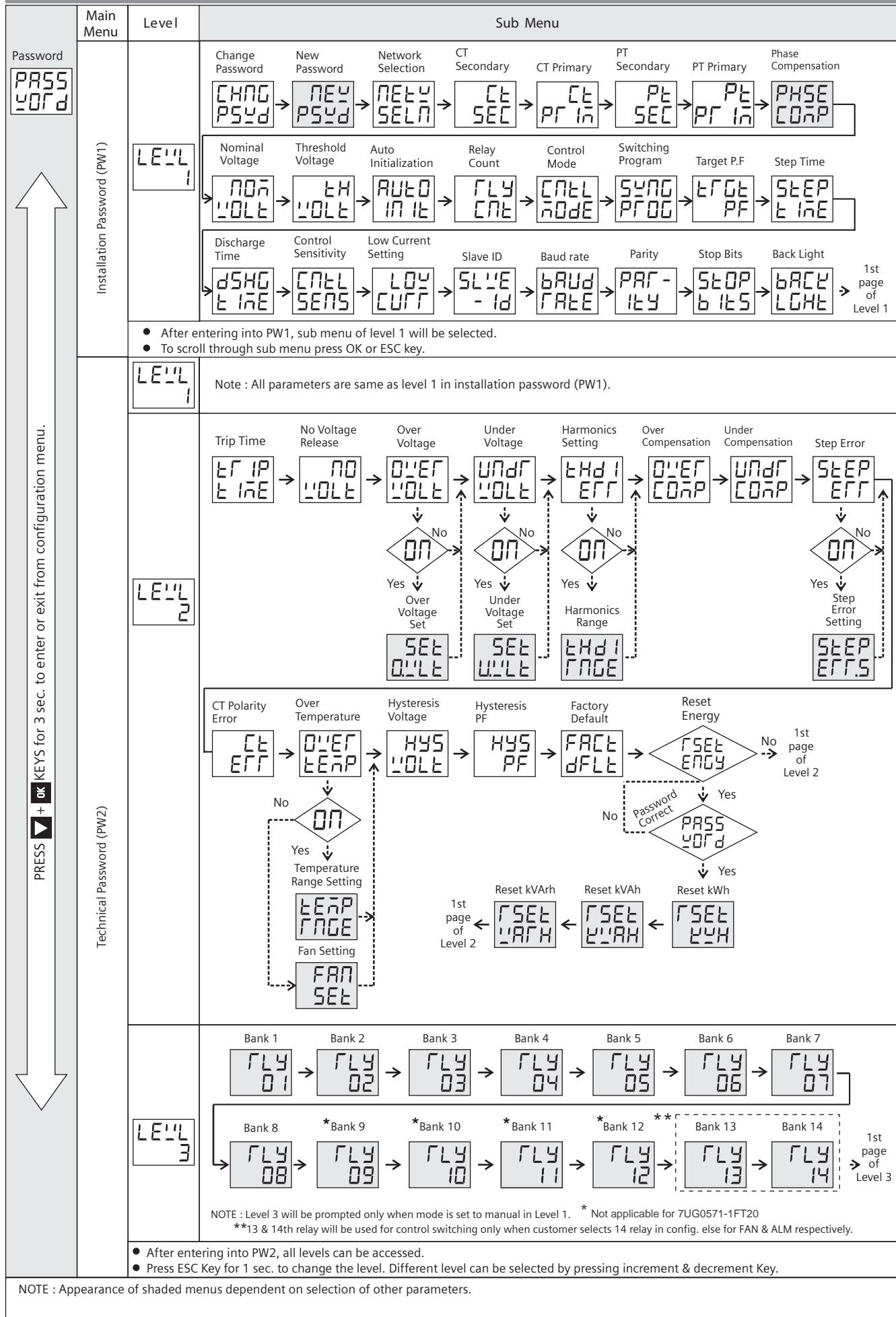
Backlight	Description
White	In Healthy condition
Orange	Fault condition occurred [Press ESC key to display trip parameter] Backlight turn to white again when user will press ESC key in fault condition. Trip parameters will be displayed for 3sec each.

NOTE : On occurrence of any new fault condition backlight turns Orange & on pressing ESC key all trip parameters will be displayed for 3sec each.

## CT Error

If current connection is reversed, meter will show in which phase connection is reversed. If more than one phase reverse, it will display combination of both.1 - 1st phase, 2 - 2nd phase, 3 - 3rd phase

## Configuration Menu



### Level 1

Parameter	Display	Range	Default Value	Condition	Parameter	Display	Range	Default Value	Condition
Password	PASS WORD	0000 – 9998	1000 (PW1) ; 2000 (PW2)		Control Mode	CNTL MODE	Auto / Manual	Auto	Level 3 accessible only when control mode is manual
Change Password	CHNG PSWD	YES / NO	NO		Switching Program	SWNG PROG	Auto / Linear / Rotational	Auto	
New Password	NEW PSWD	0000 – 9998	0		Target Power Factor	TRGT PF	0.800 to -0.800	1.000	
Level Indication	LEVL	-	LEVL 1		Step time	STEP TIME	1 S to 999 S	5 S	
Network Selection	NETW SELN	3P4W / 3P3W / 1P2W / 2P2W	3P4W		Discharge Time (Reconnection time)	DSHG TIME	1 S to 9999 S	180 S	
CT Secondary	CT SEC	1A / 5A	5A		Control Sensitivity settings	CNTL SENS	55% to 100%	60%	
CT Primary	CT PRIM	1A / 5A-9999A	5A		Low Current	Low Curr	0-50%	0	
PT Secondary	PT SEC	100V – 500V	350V		Slave ID	SLVE ID	001 – 255	1	
PT Primary	PT PRIM	100V to 500KV	350V		Baud Rate	BAUD RATE	300/600/1200/ 2400/4800 / 9600/19K2	9600	
Phase Compensation Angle	PHSE COMP	0, 90, 120, 210, 240, 330	0	Only Valid for 1P2W & 2P2W	Parity	PAR-ITY	NONE / ODD / EVEN	NONE	
Nominal Voltage	NOM VOLT	50 – 440V	For 1P2W/3P4W-240V For 3P3W/2P2W-415V		Stop Bits	STOP BITS	1 or 2	1	
Threshold Voltage	TH VOLT	0 – 100%	0%		Backlight	BACK LGHT	0 to 7200 Sec	0	
Auto Initialization	AUTO INIT	YES / NO	YES						
Relays Count	RLY CNT	1 – 8 / 12 / 14	8 / 12	'8' for 7UG0571.. '12' for 7UG0572..					

### Level 2

Name of Parameter	Nomenclature	Range	Default Value	Activate	Deactivate	Action to be taken by APFC
Trip time setting	TRIP TIME	ON / OFF	OFF			
No Voltage Release	NO VOLT	ON / OFF	OFF	Inst	90 sec	When any phase is missing Disconnect All steps
Over Voltage	OVER VOLT	ON / OFF	ON			
Over Voltage setting	SET O.VLT	50 - 277V (L-N) 85 - 480 (L-L)	260V (L-N) 460 (L-L)	5min	1min	(For Nominal Voltage)
Under Voltage	UNDR VOLT	ON / OFF	OFF			
Under Voltage setting	SET U.VLT	50 - 240V (L-N) 85 - 415 (L-L)	190V (L-N) 340 (L-L)	Inst	Inst	Disconnect All steps
Total Harmonic Distortion	THDI ERR	ON / OFF	OFF	5min	2.5min	Disconnect All steps
THD I Range	THDI RNGE	20 - 100%	50%			
Over Compensate	OVER COMP	ON / OFF	ON	5min	1min	
Under Compensate	UNDR COMP	ON / OFF	ON	5min	1min	
Step Error	STEP ERR	ON / OFF	ON	NA	NA	
Step Error Setting	STEP ERR.S	20 to 80%	20			All capacitor banks are blocked
CT Polarity error	CT ERR	ON / OFF	ON	Inst	Inst	
Over Temperature	OVER TEMP	ON / OFF	OFF			
Over Temperature Setting	TEMP RNGE	0-100	65 C	5min	2.5min	FAN ON
Fan Setting	FAN SET	ON / OFF	OFF			Prompted only if over TEMP is off
Hysteresis voltage	HYS VOLT	1 to 10%	2			
Hysteresis PF	HYS PF	1 to 5%	1			
Factory Default	FACT DFLT	YES / NO	NO			
Reset Energy	RSET ENGY	YES / NO	NO			
● Reset Energy Pass word	RSET ENGY	0001 – 9999	2001			Only Valid if customer wants to reset energy
Reset kWh	RSET kWh	YES / NO	NO			
Reset kVAh	RSET kVAh	YES / NO	NO			
Reset kVArh	RSET VArh	YES / NO	NO			

● For resetting energy parameters user will be prompted the password. This password will be value which will be greater than the technical password by 1. # Response time is 3-5 sec.

### Level 3

Name of Parameter	Nomenclature	Range	Default Value	Condition	Name of Parameter	Nomenclature	Range	Default Value	Condition
Relay 1	RLY1	ON / OFF	OFF		Relay 8	RLY8	ON / OFF	OFF	
Relay 2	RLY2	ON / OFF	OFF		* Relay 9	RLY9	ON / OFF	OFF	
Relay 3	RLY3	ON / OFF	OFF		* Relay 10	RLY10	ON / OFF	OFF	
Relay 4	RLY4	ON / OFF	OFF		* Relay 11	RLY11	ON / OFF	OFF	
Relay 5	RLY5	ON / OFF	OFF		* Relay 12	RLY12	ON / OFF	OFF	
Relay 6	RLY6	ON / OFF	OFF		* * Relay 13	RLY13	ON / OFF	OFF	
Relay 7	RLY7	ON / OFF	OFF		* * Relay 14	RLY14	ON / OFF	OFF	

\* \* 13 & 14th relay will be used for control switching only when customer selects 14 relay in config. else for FAN & ALM respectively.

\* Not applicable for 7UG0571-1FT20

### Fan Settings

Setting	Description
None	Fan output permanently off.
Fixed On	Fan output permanently on.
Temperature ON/OFF (Setting range = 0°C - 100°C)	Fan output will turn on when the temperature exceed user set value.

### NOTE :

- A.INT will be update to 'NO' automatically in configure after auto initialization completion.
- Reauto - Initialization will be done by only changing A.INT - Yes in configure manually.
- If DI is high controller work in manual mode & if Low return to 'Auto' mode.
- Recommended that number of relays not to be changed during normal operation If done so, restart the unit.
- Recommended to restart the unit if Switching program (SWP) is changed during normal operation for proper functionality in accordance with the chosen control mode.

## Modbus Register Addresses List

Readable parameters: [For Measuring: Length (Register) : 2; Data structure : Float, For Error: Length (Register) : 1; Data structure: Integer]

Address	Hex Address	Parameter	Address	Hex Address	Parameter	
30000	0x00	Voltage V1N	30046	0x2E	Total kVAr	
30002	0x02	Voltage V2N	30048	0x30	PF1	
30004	0x04	Voltage V3N	30050	0x32	PF2	
30006	0x06	Average Voltage LN	30052	0x34	PF3	
30008	0x08	Voltage V12	30054	0x36	Average PF	
30010	0x0A	Voltage V23	30056	0x38	Frequency	
30012	0x0C	Voltage V31	30058	0x3A	kWh	
30014	0x0E	Average Voltage LL	30060	0x3C	kVAh	
30016	0x10	Current I1	30062	0x3E	kVArh	
30018	0x12	Current I2	30064	0x40	Temperature	
30020	0x14	Current I3	30066	0x42	No Voltage Error	
30022	0x16	Average Current	30067	0x43	Under Voltage Error	
30024	0x18	kW1	30068	0x44	Over Voltage Error	
30026	0x1A	kW2	30069	0x45	THD I Error	
30028	0x1C	kW3	30070	0x46	Temperature Error	
30030	0x1E	kVA1	30071	0x47	Over compensate Error	
30032	0x20	kVA2	30072	0x48	Under compensate Error	
30034	0x22	kVA3	30073	0x49	CT Error	
30036	0x24	kVAr1	Note : For Error 0 :No Error ; 1 :Error Present			
30038	0x26	kVAr2	30074	0x4A-	Relay1-Relay12/14* Status	
30040	0x28	kVAr3	30087	0x57		
30042	0x2A	Total kW	30088	0x58	Digital Input Status	
30044	0x2C	Total kVA	Note: For Status 0:OFF;1:ON			

Address	Hex Address	Parameter
30090-	0x5A -	Bank1 - Bank 12/14* Value
Total Harmonic Distortion(THD)		
30124	0x7C	THD of Voltage V1N
30126	0x7E	THD of Voltage V2N
30128	0x80	THD of Voltage V3N
30130	0x82	THD of Voltage V12
30132	0x84	THD of Voltage V23
30134	0x86	THD of Voltage V31
30136	0x88	THD of Current I1
30138	0x8A	THD of Current I2
30140	0x8C	THD of Current I3
30684	0x2AC	Serial number in HEX
Formula to find address of individual Harmonic		
Constant Parameter	Meaning	
0	Voltage V1N	
1	Voltage V2N	
2	Voltage V3N	
3	Voltage V12	
4	Voltage V23	
5	Voltage V31	
6	Current I1	
7	Current I2	
8	Current I3	

$\{142 + [(Harmonic no-2) \times 2] + 60 \times$   
Constant Parameter }  
For Example,  
To find the 14<sup>th</sup> Harmonic address of  
Voltage V31 following formula can be used:  
Formula with the parameter :  
 $\{142 + [(Harmonic no-2) \times 2] + 60 \times C P\}$   
Eg.  $\{142 + [(14-2) \times 2] + 60 \times 5\} = 466$   
So, Check the 14<sup>th</sup> Harmonic of Voltage V31  
at 466 address.

Read Coil Status		
Address	Hex Address	Parameter
00000-	0x00-0x0D	Relay1 - Relay 8/12/14*

Force Single Coil:		
Address	Hex Address	Parameter
00000-	0x00-0x0D	Relay1 - Relay 8/12/14*

Readable / writable parameters:

Address	Hex Address	Parameter	Range	Length (Register)	Data Structure
40000	0x00	Password-1	Min value:0 Max value : 9998	1	Integer
		Value	Meaning		
40001	0x01	N/W selection	0 3P4W	1	Integer
		1 3P3W		1	Integer
		2 1P2W		1	Integer
		3 2P2W		1	Integer
		Min value	Max value		
40002	0x02	CT Secondary (A)	1 5	1	Integer
40003	0x03	CT primary (A) (CT Secondary=5)	5 5 - 9999	1	Integer
		CT primary (A) (CT Secondary=1)	1 1 - 9999		
40004	0x04	PT Secondary (V)	100 500	1	Integer
40005	0x05	PT primary (V)	100 500000	2	Integer
40007	0x07	Slave id	1 255	1	Integer
		Value	Meaning		
40008	0x08	Baud rate (bps)	0x0000 300	1	Integer
		0x0001 600			
		0x0002 1200			
		0x0003 2400			
		0x0004 4800			
		0x0005 9600			
		0x0006 19200			
40009	0x09	Parity	0x0000 None	1	Integer
		0x0001 Odd			
		0x0002 Even			
40010	0x0A	Stop bit	0x0000 1	1	Integer
		0x0001 2			
40011	0x0B	Backlight OFF(Sec.)	0 7200	1	Integer
40012	0x0C	Factory Default	1 Set to factory setting range	1	Integer
40013	0x0D	Reset kWh	1 Reset Total Active Energy	1	Integer
40014	0x0E	Reset kVAh	1 Reset Total Apparent Energy	1	Integer
40015	0x0F	Reset kVArh	1 Reset Total Reactive Energy	1	Integer
		Min value	Max value		
40016	0x10	Password-2	0 9998	1	Integer
40017	0x11	Phase Compensation (%)	0-1, 1-90, 2-120, 3-210, 4-240, 5-330	1	Integer

Address	Hex Address	Parameter	Range	Length (Register)	Data Structure
40018	0x12	Nominal Voltage(V)	50 50 - 440	1	Integer
40019	0x13	Threshold Voltage (%)	0 0 - 100	1	Integer
40020	0x14	Auto Initialization	0 : NO ; 1 : YES	1	Integer
40021	0x15	Relay Count	1 8/12/14*	1	Integer
40022	0x16	Control Mode	0 - MANUAL ; 1 - AUTO	1	Integer
40023	0x17	Switching Program	0 - Auto ; 1 - Rotation ; 2 - Linear	1	Integer
40024	0x18	Target Power Factor (PF)	800 -800	1	Signed Integer
40025	0x19	Step time (Sec.)	1 1-999	1	Integer
40026	0x1A	Discharge Time(Sec.)	1 1-9999	1	Integer
40027	0x1B	Control Sensitivity(%)	55 55 - 100	1	Integer
40028	0x1C	No Voltage	0 : OFF ; 1 : ON	1	Integer
40029	0x1D	Over Voltage	0 : OFF ; 1 : ON	1	Integer
40030	0x1E	Set Over Voltage(V)	50 - 277V (L-N); 85 - 480V (L-L)	1	Integer
40031	0x1F	Under Voltage	0 : OFF ; 1 : ON	1	Integer
40032	0x20	Set Under Voltage(V)	50 - 240V (L-N); 85 - 415V (L-L)	1	Integer
40033	0x21	THDI	0 : OFF ; 1 : ON	1	Integer
40034	0x22	THDI Range(%)	20 20 - 100	1	Integer
40035	0x23	Over Compensation	0 : OFF ; 1 : ON	1	Integer
40036	0x24	Under Compensation	0 : OFF ; 1 : ON	1	Integer
40037	0x25	Step Error	0 : OFF ; 1 : ON	1	Integer
40038	0x26	Set Step Error(%)	20 20 - 80	1	Integer
40039	0x27	CT Polarity error	0 : OFF ; 1 : ON	1	Integer
40040	0x28	Over Temperature	0 : OFF ; 1 : ON	1	Integer
40041	0x29	Set Over Temperature (°C)	0 0 - 100	1	Integer
40042	0x2A	Fan Settings	0 : OFF ; 1 : ON	1	Integer
40043	0x2B	Hysteresis Voltage (%)	1 1 - 10	1	Integer
40044	0x2C	Hysteresis PF(%)	1 1 - 5	1	Integer
40045-40058	0x2D-0x3A	Relay1-Relay14	0:OFF;1:ON	1	Integer
40059	0x3B	Trip time setting	0 : OFF ; 1 : ON	1	Integer
40060	0x3C	Low Current setting(%)	0 0-50	1	Integer

\* 13 & 14th relay will be used for control switching only when customer selects 14 relay in config. else for FAN & ALM respectively.

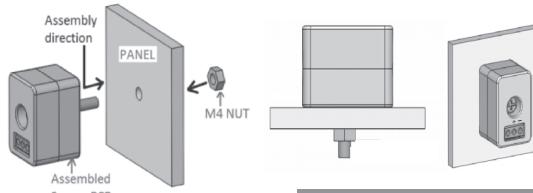
## User Guide

- a) Manual switching (MANL)** : 1) When this switching program is selected, the capacitor steps are controlled manually by the user.  
 2) DI : When user selects manual switching through Auto / Manual switch on the panel, then all the relays that are 'ON' through APFC are turned 'OFF' and then user can manually turn every capacitor bank through push button available on panel for respective banks. In this case APFC has no more control and it switches off all bank that it was earlier controlling.
- b) Rotational switching (ROTN)** : This switching program is based on rotational first-in-first-out sequence. This option will automatically switch in and out the capacitors according to the targeted power factor, sensitivity setting and the re-connection time setting.
- c) Automatic switching (AUTO)** : This automatic switching program uses intelligent switching sequence. The step switching sequence is not fixed and the program automatically selects the most appropriate steps to switch in or out in order to achieve shortest reaction time with minimum number of steps.
- d) Linear switching (LINR)** : In this switching sequence it works in last in first out mode. This option will automatically switch in and out the capacitors according to the targeted power factor, sensitivity setting and the re-connection time setting.

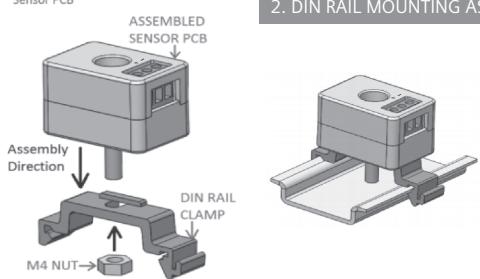
## Sensor Clip Assembly

Assemble sensor on the panel /Din rail clamp by using center screw provision and M4 nut. As shown in below diagram.

### 1. PANEL MOUNTING ASSEMBLY :



### 2. DIN RAIL MOUNTING ASSEMBLY :



## Phase-angle Setting

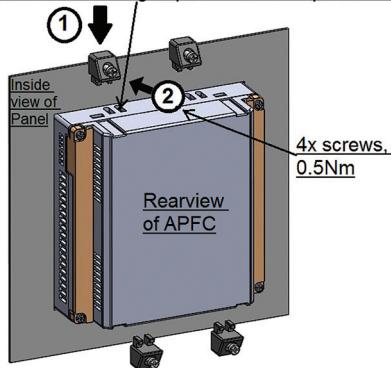
Voltage	L1-N	L2-N	L3-N	L1-N	L2-N	L3-N	L1-N	L2-N	L3-N
CT	L1	L2	L3	L2	L3	L1	L3	L1	L2
Phase-Angle	0°	0°	0°	240°	240°	240°	120°	120°	120°
Voltage	L2-L3	L3-L1	L1-L2	L2-L3	L3-L1	L1-L2	L2-L3	L3-L1	L1-L2
CT	L1	L2	L3	L2	L3	L1	L3	L1	L2
Phase-Angle	90°	90°	90°	330°	330°	330°	210°	210°	210°

## Dimensional Drawing (mm)

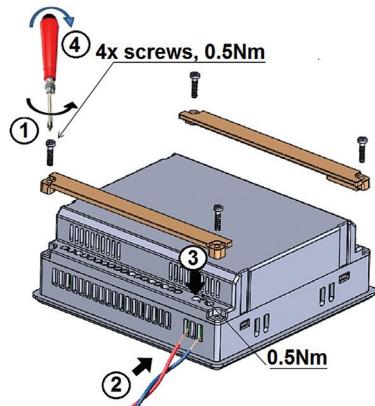
Outline Dimensions (in mm)	Panel Cutout (in mm)
 Front bezel	 Side view
	 138

## Mounting APFC:

Guide 4x mounting clips in the slots provided



## Cable and Cover termination:



**Security Information:** In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions constitute one element of such a concept. For more information about industrial security, please visit <http://www.siemens.com/industrialsecurity>.

## Disposal

Siemens products are environment friendly, which predominantly consist of recyclable materials.

For disposals we recommend disassembling and separation into following materials:

METALS: Segregate into Ferrous & Non Ferrous types for recycling through authorised dealer.

PLASTICS: Segregate as per material type for recycling through authorised dealer. Because of the long lifetime of Siemens products the disposal guidelines may be replaced by other national regulations when taking the product out of service.

The local customer care service is available at any time to answer disposal-related questions