

FEATURES

- Universal 90-264VAC input voltage.
- Operating ambient temperature range: 0°C to +50°C.
- Built-in active PFC function.
- Output short circuit, over-current, over-voltage protection, over-temperature protection.
- 650W 1U Slim type power supply.
- High efficiency up to 80Plus Platinum.
- N+1 redundancy design with active current sharing.
- Digital power management (PMBus).
- Operating altitude up to 3000m.
- Complies with IEC/EN/UL 62368-1 standard.

Models & Ratings

Model No.	Output Power	Main Output Voltage/ Current	Standby Output Voltage/ Current	Efficiency (80 plus)	External Capacitive Load
TG15-0650-01	650W	12V / 52.9A	5V / 3A	Platinum	11,000μF / 500μF
TG15-0650-02	650W	12V / 52.9A	5V / 3A	Platinum	11,000μF / 500μF

Model No.
TG15-0650-01 is the right-side latch; TG15-0650-02 is the left-side latch.

Efficiency
The power supply efficiency must exceed 80Plus Platinum at all specified load points. The efficiency should be measured at 230VAC and with external fan power according to Climate Saver /80Plus efficiency measurement specifications (CSCI-09-10)

Load	20%	50%	100%
230VAC/50Hz	90%	94%	91%

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		90	100 - 240	264	VAC
	DC input		190	240	310	VDC
Input Frequency	-		47	50 - 60	63	Hz
Input Current	100VAC		-	-	8.0	Arms
	200VAC		-	-	4.0	
Inrush Current	100-240VAC	At 25°C, Cold start	-	-	30	A peak
Power Factor	115/230VAC	At 100% load	0.98	-	-	-
Touch Current	264VAC		-	-	1.5	mA

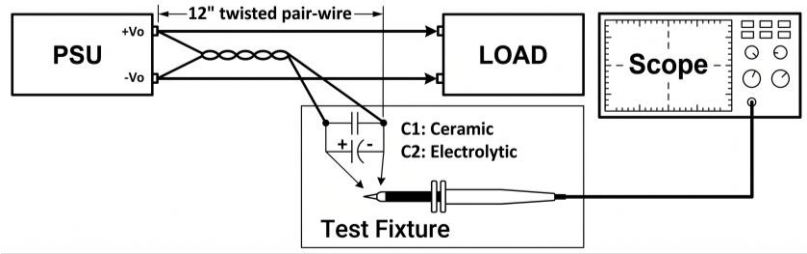
Input voltage: AC input
Power turn on : 85V±5V
Power turn off : 75V±5V
DC input

Power turn on : 185V±5V
Power turn off : 175V±5V (slow turn off over 10s)
Power turn off : 165V±5V (fast turn off over 20ms)

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Output from 0 - 100% load	11.4	12.0	12.6	VDC
Initial setting output voltage	50% load	12.1	-	12.15	VDC
Output Current	Output range	0	-	52.9	A
Line Regulation	100% load	-	±1	-	%
Load Regulation	Output from 0 - 100% load	11.4	-	12.6	V
Ripple & Noise	20MHz bandwidth	-	-	1	%
Turn On Time	100VAC/60Hz rated load from input AC turn on	-	-	2.5	S
Hold Up Time	With 70% of maximum load and over 100-240VAC input.	12	-	-	mS
Short Circuit Protection	Output shut down and latch off	-	-	-	-
Over Current Protection	Output shut down and latch off	58.2	-	71.4	A
Over Voltage Protection	Output shut down and latch off	13.3	-	14.5	V
Under Voltage Protection	Output shut down and latch off	9.5	-	10.5	V
Parallel Operation	Active current sharing	1		4	Pcs
Standby Output	The maximum output current is 3A	4.75V	5.0	5.25V	V

Ripple & Noise :
The output is decoupled with 100μF low ESR aluminum electrolytic (C2) and 0.1μF ceramic capacitor (C1). Measurement is made with a high impedance probe connected across the decoupling capacitance. Measurements shall be made with an oscilloscope with 20MHz bandwidth.



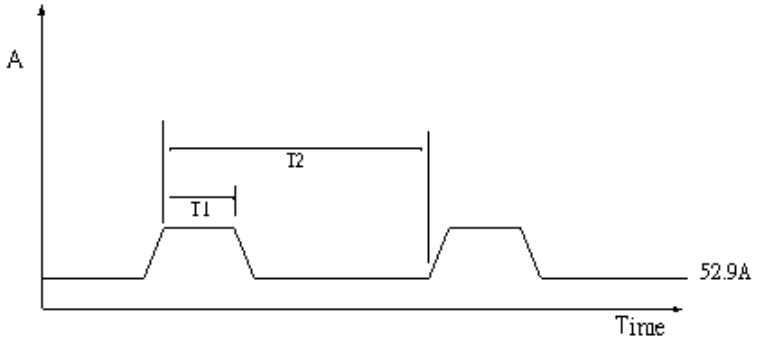
Hot Swap Transient Load :
When an additional power supply is ORed together, or, removed from a group of one to three ORed power supplies, the outputs shall maintain regulation.

Turn On/Off Overshoot :
Overshoot at turn on shall be less than 10% of the nominal output voltage.

Dynamic Load :
The output voltages shall remain within limits specified for the step loading and capacitive loading specified in the test table below. The load transient repetition rate shall be tested between 50Hz and 5KHz frequency.

Output	△Step Load Size	Load Slew Rate	Test capacitive Load
12V	65% of max load (10A->44.4A)	0.5A/uS	11000uF

Peak Loads :

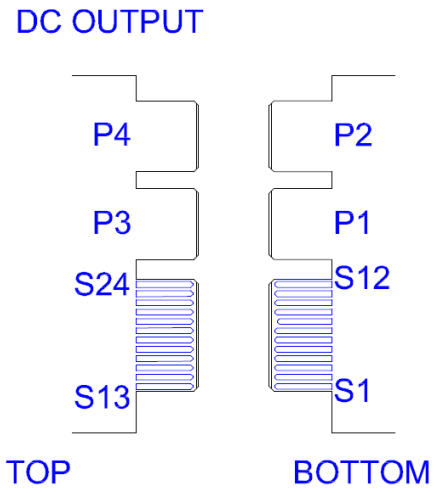


The 12V output shall withstand a pulse load defined below:
Where:

- T1 = 10mS
- T2 = 50mS Min.
- I_{PEAK} = 70.8A

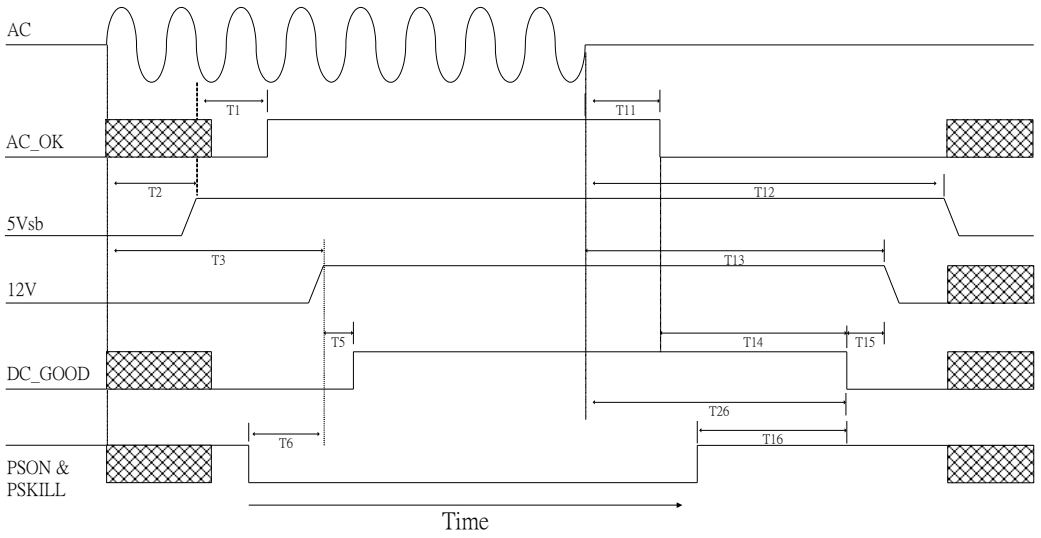
Output Connector :

The output gold finger connector connects the power as well as the signal to the system or power backplane board.



Pin	Name	Pin	Name
P1	+12V	P3	SGND
P2	+12V	P4	SGND
S1	+12VRS+	S13	C_R
S2	+12VRS-	S14	SGND(PRESENT)
S3	+12VLS	S15	A0 (SMBus address)
S4	SMBAlert	S16	B/P SIG
S5	PMBus SDA	S17	N/A
S6	PMBus SCL	S18	N/A
S7	PSKILL	S19	AC_OK
S8	PSON	S20	SGND
S9	DC_GOOD	S21	B/P FAIL
S10	A1(SMBus address)	S22	N/A
S11	5Vsb	S23	5Vsb
S12	5Vsb	S24	5Vsb

Sequencing :



Description	Time	Min	Nom	Max
AC_OK After 5Vsb on	T1			100ms
AC_OK After AC off	T11			9ms
AC in spec to 5Vsb in spec	T2			1.5s
AC in spec to 12V in spec (with PSON# active)	T3			2.5s
DC_GOOD active from 12V in spec	T5	100ms		500ms
PSON active to 12V in spec	T6			400ms
AC turn off to 5Vsb out of spec	T12	50ms		
AC turn off spec to 12V out of spec	T13	12ms		
AC_OK active prior to DC_GOOD inactive	T14	1ms		
DC_GOOD inactive prior to 12V out of spec	T15	1ms		
PSON and PSKILL inactive to DC_GOOD inactive	T16			50ms
DC_GOOD hold-up Loss of AC to de-assertion of DC_GOOD	T26	10ms		

Thermal Fault Protection :

If monitored components critical temperatures are reached, the power supply shall stay in regulation for 10 seconds after declaring the over temperature condition by setting the OT Warning bit of STATUS_TEMPERATURE command in PMBus, if the over temperature persists then set OT Fault bit of STATUS_TEMPERATURE command , then shuts down. Over temperature protect will be 2 level band. One is OTP warning and the other is OTP fault. If Hot spot over 90°C (PMBus 8Eh command value) or Ambient temperature over 65°C (PMBus 8Dh command value) STATUS_TEMPERATURE warning bit should be set and PMBus SMBAlert pin pull to logic low. If Hot spot over 100°C (PMBus 8Eh command value) or Ambient temperature over 75°C (PMBus 8Eh command value) STATUS_TEMPERATURE fault bit should be set and PMBus SMBAlert pin pull to logic low and PSU shunt down.

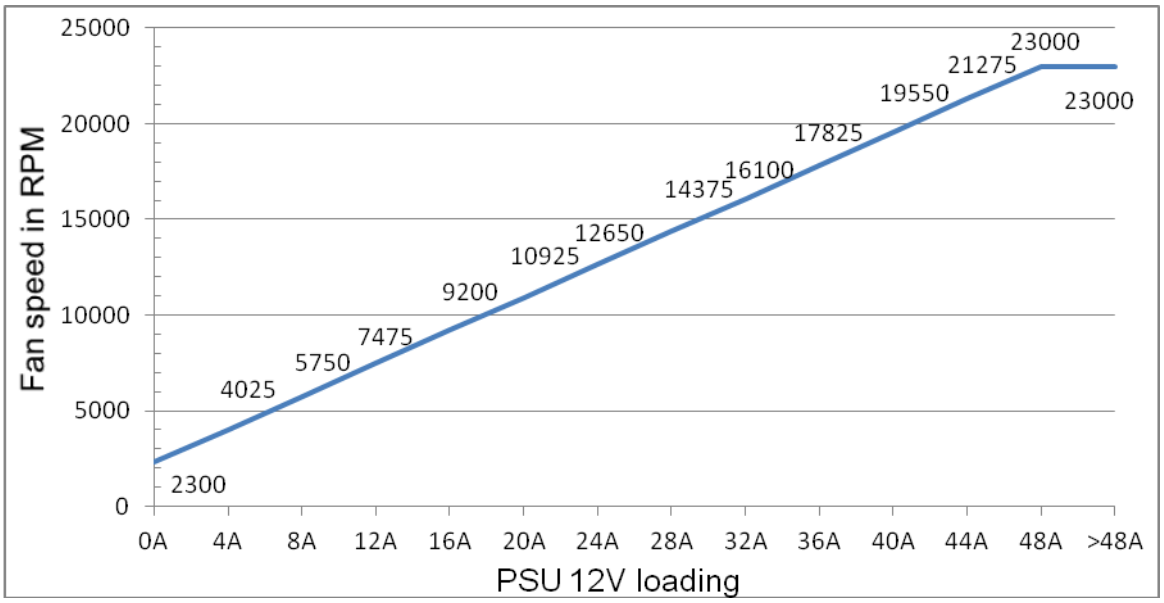
Fan Fault Protection :

After 10 sec the power supply should be latch off when fan fault occur. When fan speed malfunction, fan warning signal should be sent it out first then latch off the power supply.

Fan Control :

System control fan speed of PSU by duty from 10~100%, n=0.
If the system written value is over than PSU FAN control, system can control FAN speed of PSU by 10~100%.
If the system written value is less than PSU FAN control or out of range or some data-error, FAN obeyed the PSU FAN

control.



Fan speed control tolerance to whichever is the maximum +2500rpm / -500rpm of fan controlled speed. Standby mode, the fan is stop. Operation mode the fan speed is the maximum RPM when the ambient temperature is over 60 degree C. Fan Speed =0 when CR function into sleep mode.

Current Sharing Operation :

The power supply shall be designed for active current sharing on its main 12V output. Output current for a single power supply must be within +/- 10% of the average expected from each power supply, unless the average single power supply output is less than 25% of maximum load. The Table below shows examples:

650W Current Share Example Table

Total Power Supply load	Number of Power Supplies	Power Supply load N+1	Acceptable Current limits
52.9A	2	26.5A	23.8A to 29.1A
52.9A	4	13.2A	N/A
190.4A	4	47.6A	42.8A to 52.4A

Current sharing below 25% of maximum load is not required.

Cold Redundancy Support :

Power supplies that support cold redundancy can be enabled to go into a low-power state (that is, cold redundant state) in order to provide increased power usage efficiency when system loads are such that both power supplies are not needed. When the power subsystem is in Cold Redundant mode, only the needed power supply to support the best power delivery efficiency is ON. Any additional power supplies; including the redundant power supply, is in Cold Standby state.

The following table shows the state of the power supplies programmed for Cold Standby mode based on the condition of the CR_BUS# signal and Load Share bus voltage.

Cold Redundancy Config		V CR Load Share Bus	
		Turn ON	Turn OFF
Disable	00h	Always ON	
Cold Redundant Active	01h	Always ON	
Cold Standby 1	02h	>3.2V	<1.44V
Cold Standby 2	03h	>5.0V	<3.01V
Cold Standby 3	04h	>6.7V	<4.52V

LED Indicator :

All LEDs shall protrude beyond the supply chassis surface for good visibility.

There is a dual-color LED

Power Supply Condition	LEDs State
Only 5Vsb and AC good or PSU in cold redundant state	1Hz Blink green
PW_OK (Power normal)	Solid green
Power supply warning events where the power supply continues to operate; high temp, high power, high current, slow fan.	1Hz Blink amber
No AC power	Not lit
Fault： Ambient or Hot spot occur OTP, Fan fault, Input AC UV, +12V output occur OVP, UVP or OCP (without +5Vsb)	Solid amber
Boot loader mode operating	2Hz Blink green

Standby Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Output from 0 - 100% load	4.75	5.0	5.25	VDC
Output Current	Output range	0	-	3.0	A
Line Regulation	100% load	-	±1	-	%
Load Regulation	Output from 0 - 100% load	4.75	-	5.25	V
Ripple & Noise	20MHz bandwidth	-	-	2	%
Turn On Time	100VAC/60Hz rated load from input AC turn on	-	-	1.5	S
Short Circuit Protection	Output shut down and auto-recovery	-	-	-	-
Over Current Protection	Output shut down and auto-recovery	3.3	-	6.0	A
Over Voltage Protection	Output shut down and auto-recovery	5.8	-	6.5	V

Analog and Digital Signal

Item	Function
PS ON and PSKILL	PSON and PSKILL are active low input signals to the power supply. When both signals are low, the power supply is activated with the main 12V output.
DC_GOOD	DC_GOOD is an active high output signal from the power supply used to indicate that: ◆ The PSON signal is active low ◆ The main 12V output is above its under-voltage threshold and below its over-voltage threshold ◆ The load is below the over current threshold ◆ The power supply is operating normally and within thermal limits. If DC_GOOD transitions from high to low (de-asserted) shows the power supply shut down and latch off.
PRESENT	PRESENT is an active low output signal from the power supply used to indicate that the power supply is physically present. The power supply generates this signal by wiring the signal pin to ground internally.
VSENSE (+ & -)	+VSENSE and -VSENSE are input signals to the power supply used to provide for remote sensing of the main 12V output voltage. The power supply must be able to compensate for up to 500mV of IR drop measured between the power supply connector output and the location where the remote sense points are applied.
12VLS	12VLS is an analog output signal used to help equalize the load sharing of the main 12V output between multiple power supplies. It also represents the amount of the loading on

	the power supply (or supplies).
A0 and A1	ADDR is 2 pin digital I/O signal the power supply uses to set its serial bus eight bit address. A0/A1 include internal 10K pull up resistor to 5Vdc. Host system not need add pull up resistor if A0/A1 pin config to logic 1.
SCL and SDA	SCL and SDA comprise a bi-directional serial data bus used to communicate between the SMBus / PMBus devices with-in the power supply and the host system.
SMBus_ALERT#	SMBAlert is an open collector active low output signal from the power supply. When driven low, it indicates one or more PMBus status power port bits have changed state. SMBAlert will be setting by following cases: ◆ AC input voltage drops below warning threshold. ◆ +12V output current ramps over warning threshold. ◆ Hot spot or ambient temperature ramps over warning threshold.

Signal Specification

Item	Operating Conditions		Min.	Typ.	Max.	Unit
PS ON and PSKILL	Output condition off	Remote off = High / floated	2.0	-	5.5	VDC
	Output condition on	Remote on = Low	0	-	0.8	
DC_GOOD	Power good	TTL High level	2.0	-	5.5	VDC
	Delay time	Main output reaches 90% of its set value	100	-	500	mS
	Output current		-	-	1.0	mA
	Power off/Power fail	TTL Low level	0	-	0.8	VDC
	Warning time	Main output falls to 90% of set value at Power off	1.0	-	-	mS
	Sink current		-	-	1.0	mA
12VLS	25% of power supply max. current capacity		1.8	2.0	2.2	V
	50% of power supply max. current capacity		3.6	4.0	4.4	V
	100% of power supply max. current capacity		7.2	8.0	8.8	V

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature	Refer to power de-rating curve	0	-	+50	°C
Storage Temperature	Non-operation	-40	-	+80	
Operating Humidity	Non-condensing	10	-	90	%
Storage Humidity		5	-	95	
Altitude	Operating altitude	-	-	3000	meter
Dielectric Strength Test	Input - FG	1800	-	-	VAC
Insulation Resistance	Input– FG, 500VDC, 3 seconds at 25°C and 70% RH	20	-	-	MΩ
Mean Time Between Failure	At 230VAC/50Hz, 100% load, 25°C, Telcordia SR332, issue 4.	100,000	-	-	Hrs.
Vibration	Operating：2.94 , 5-150Hz, 10 minutes per cycle, 30 minutes for each X, Y and Z axis.				
Shock	Non-operating：1.2G, duration time at 11mS, sine wave, each axis 1 times (X, Y, Z)				

Altitude :
For every 305 meters of altitude increase, the operating ambient temperature needs to be decreased by 1°C.

Safety Approvals

Safety Standard	-	UL/cUL UL 62368-1, 3rd Edition CB IEC 62368-1, 3rd Edition
Safety Class	-	Class I

Electromagnetic Compatibility (EMC)

Emissions	CE	EN55032 (CISPR32) Class A	
	RE	EN55032 (CISPR32) Class A	
	Harmonic Current	IEC/EN61000-3-2 Class A	
	Flicker	IEC/EN61000-3-3	
Immunity	ESD	IEC61000-4-2, level 4, Contact +/- 8KV; Air discharge +/-15KV	Criteria A
	RS	IEC61000-4-3, level 3, 10V/m	Criteria A
	EFT	IEC61000-4-4, level 3, +/- 2KV	Criteria A
	Surge	IEC61000-4-5, level 3, Line to Line +/-1KV; Line to Earth +/-2KV	Criteria A
	CS	IEC61000-4-6	Criteria A
	PFMF	IEC61000-4-8	Criteria A
	DIP	IEC61000-4-11	Criteria B

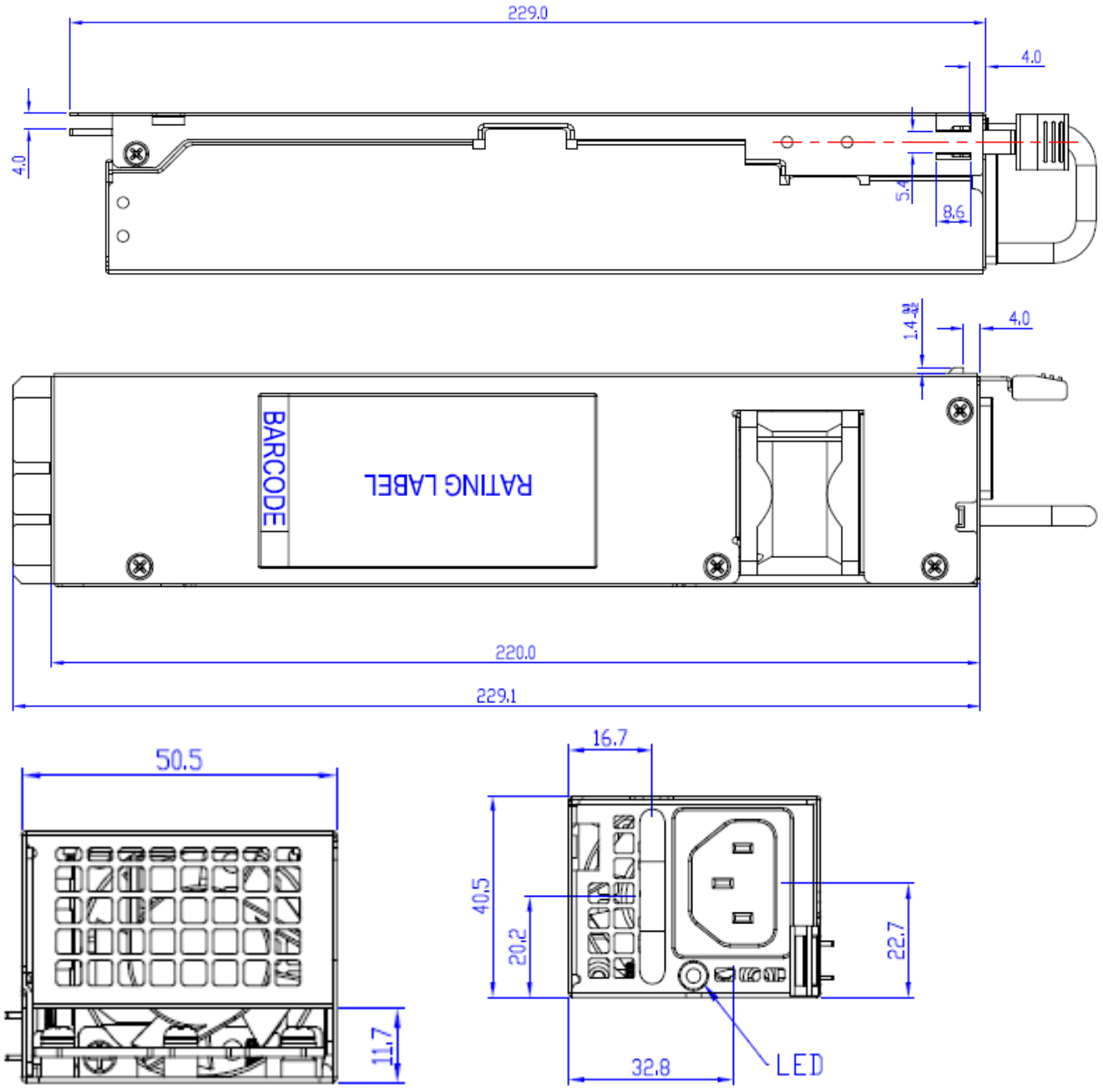
Emissions :

The power supply should be considered a part of the system component. All EMC tests conducted with the unit installed in a metal enclosure dummy system. The power supply needs to be confirmed for electromagnetic compatibility in conjunction with the terminal equipment.

Dimensions and Recommended Layout

Item	Value	Unit
Weight (Typ.)	786	g
Size (L x W x H)	220 x 50.5 x 40.5	mm

Outline Drawing : (Unit: mm, Tolerance: ±0.5 mm)



PMBus Specification

Address Signal Description :

Defines the PSU PMBus address as follows:

Host must wire A0 / A1 to ground via a 100ohm resistor if A0/A1 pin config to logic 0.

A1	A0	Address	
		Binary	Hex
0V (0)	0V (0)	1011 0000	B0
0V (0)	Open (1)	1011 0010	B2
Open (1)	0V (0)	1011 0100	B4
Open (1)	Open (1)	1011 0110	B6

Hardware :

The PMBus device in the power supply shall be compatible with both SMBus specification 2.0 for I2C Vdd based power and drive. The bus will be both 3.3V and 5V compatible.

The pull-ups will be provided external to the power supply via 4.7K~10Kohm in the host system.

Data Speed :

The PMBus device in the power supply shall operate at the 100Kbps SMBus speed.

PMBUS Command Summary :

PMBus commands are one byte command codes. As below listing is power supply can support of PMBus commands.

Code	Command	Bytes	Read / Write
01h	Operation	1	Read / Write
03h	Clear_Faults	0	Write
05h	Page_Plus_Write	Variable	Block Write
06h	Page_Plus_Read	Variable	Block Write – Block Read Process Call
19h	Capability	1	Read
1Ah	Query	1	Block Write – Block Read Process Call
1Bh	SMBALERT_Mask	2	Block Write – Block Read Process Call
20h	Vout_Mode	1	Read
30h	Coefficients	5	Block Write – Block Read Process Call
3Ah	Fan_Config	1	Read
3Bh	Fan_Command	2	Read / Write
78h	Status_Byte	1	Read
79h	Status_Word	2	Read
7Ah	Status_Vout	1	Read
7Bh	Status_Iout	1	Read
7Ch	Status_Input	1	Read
7Dh	Status_Temperature	1	Read
7Eh	Status_CML	1	Read
81h	Status_Fans	1	Read
86h	Read_Ein	6	Block Read
87h	Read_Eout	6	Block Read
88h	Read_Vin	2	Read
89h	Read_Iin	2	Read
8Bh	Read_Vout	2	Read
8Ch	Read_Iout	2	Read
8Dh	Read_Temperature1	2	Read
8Eh	Read_Temperature2	2	Read
8Fh	Read_Temperature3	2	Read
90h	Read_Fan speed	2	Read

96h	Read_Pout	2	Read
97h	Read_Pin	2	Read
98h	PMBus_Revision	1	Read
99h	MFR_ID	9	Block Read
9Ah	MFR_MODEL	12	Block Read
9Bh	MFR_Revision	2	Block Read
9Eh	MFR_Serial	14	Block Read
D0h	Redundancy_Config	1	Read / Write
D4h	HW_Compatibility	2	Read
D5h	FWUPLOAD_Capability	1	Read
D6h	FWUPLOAD_Mode	1	Read / Write
D7h	FWUPLOAD	32	Block Write
D8h	FWUPLOAD_Status	2	Read
D9h	FW_Revision	3	Block Read

Read commands :

The READ commands allow the host to read temperature, current, voltage, power and energy parameters of the power supply.

PMBus command	Description	Data format
Read_Vin	Returns the input voltage in voltage.	Linear
Read_Iin	Returns the input current in amperes.	Linear
Read_Pin	Returns the input power, in watts, of the power supply.	Linear
Read_Ein	Commands are used to return information the host can use to calculate the input power consumption of power supply.	Direct
Read_Eout	Commands are used to return information the host can use to calculate the output power consumption of power supply.	Direct
Read_Vout	Returns the output voltage in voltage.	Linear
Read_Iout	Returns the output current in amperes.	Linear
Read_Pout	Returns the output power, in watts, of the power supply.	Linear
Read_Temperature_1	Returns the temperature in ℃ of the airflow inside temperature.	Linear
Read_Temperature_2	Returns the temperature in ℃ of the hot spot temperature.	Linear
Read_Temperature_3	Returns the temperature in ℃ of the primary side hot spot temperature.	Linear
Read_Fan speed	Returns the fan speed in revolutions per minute	Linear

PMBus direct format set m = 01h, R = 00h, b = 00h.

Accuracy

	Accuracy	
	Pin < 100W	Pin > 100W
Read_Vin	±5%	
Read_Iin	±0.1A	±5%
Read_Pin	±10W	±5%
Read_Vout	±5%	
Read_Iout	±0.5A	±5%
Read_Pout	±10W	±5%
Read_Temperature_1	±5℃	

Read_Temperature_2	±5℃
Read_Temperature_3	±5℃
Read_Fan speed	<12000rpm±1000rpm; >12000rpm±2000rpm

Capability and inventory reporting :

The follow commands shall be supported for discovery of the power supplies capabilities.

Command	Meaning	Value
Capability	Packet Error Checking is supported Maximum supported bus speed is 100KHz Support the SMBus Alert Response protocol	90h
Query	Used to determine if the PSU supports a specific command	Byte
PMBus_Revision	Used to verify the PMBus revision the power supply is base on	22h

PAGE_PLUS_WRITE :

The PAGE_PLUS_WRITE command is used to set the page within a device, send a command, and send the data for the command in one packet.

This command support 7Ah, 7Bh, 7Ch, 7Dh, 7Eh and 81h status commands.

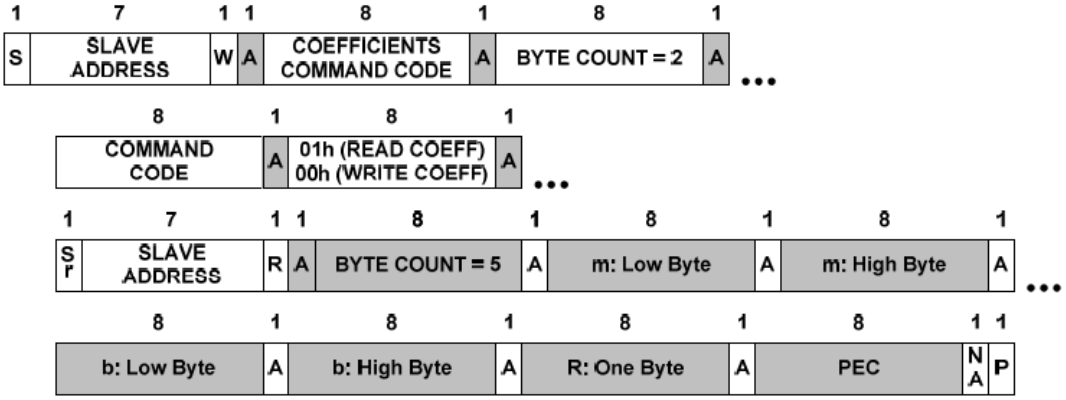
PAGE_PLUS_READ :

The PAGE_PLUS_READ command is used to set the page within a device, send a command, and read the data returned by the command in one packet.

This command support 7Ah, 7Bh, 7Ch, 7Dh, 7Eh and 81h commands.

Coefficients :

This command is used to retrieve the m, b and R coefficients needed by data in the DIRECT format.



Status commands :

Status information is binary. A value of 1 indicates a fault or warning event has occurred and a value of 0 indicates that a fault or warning event has not occurred.

When the power an exception occurs, will set the warning bit. Warning bit will be automatically cleared when the anomalies remove.

The Status_Byte (78h) and Status_Word (79h) message content is described as shown below.

Byte	Bits	Bit name	Meaning
Low	7	Busy	Not support, set to 0
	6	OFF	+12V output off set to 1
	5	Vout_OV_Fault	+12V output overvoltage fault has occurred
	4	Iout_OC_Fault	+12V output overcurrent fault has occurred
	3	Vin_UV_Fault	Input undervoltage fault has occurred
	2	Temperature	A temperature fault or warning has occurred
	1	CML	A communications, memory or logic fault has occurred

	0	None of above	Not support, set to 0
High	7	Vout	+12V output voltage fault or warning has occurred
	6	Iout	+12V output current fault or warning has occurred
	5	Input	An input voltage fault or warning has occurred
	4	Not use	Not support, set to 0
	3	Power_Good#	The DC_GOOD signal, if present, is negated
	2	Fans	A fan or airflow fault or warning has occurred
	1	Other	Not support, set to 0
	0	Not use	Not support, set to 0

The Status_Vout (7Ah) command returns one data byte with contents as below:

Bits	Meaning
7	+12V output voltage exceed 14V has occurred (Fault)
6	+12V output voltage exceed 13.2V has occurred (Warning)
5	+12V output voltage less than 10.8V has occurred (Warning)
4	+12V output voltage less than 10V has occurred (Fault)
3	Not support, set to 0
2	Not support, set to 0
1	Not support, set to 0
0	Not support, set to 0

The Status_Iout (7Bh) command returns one data byte with contents as below:

Bits	Meaning
7	+12V output current exceed 62.75A has occurred (Fault)
6	Not support, set to 0
5	+12V output current exceed 57.375A has occurred (Warning)
4	Not support, set to 0
3	Not support, set to 0
2	Not support, set to 0
1	Not support, set to 0
0	Not support, set to 0

The Status_Input (7Ch) command returns one data byte with contents as below:

Bits	Meaning
7	Not support, set to 0
6	Not support, set to 0
5	Input voltage less than 80±5Vrms has occurred (Warning)
4	Input voltage less than 75±5Vrms has occurred (Fault)
3	Unit Off For Insufficient Input Voltage
2	Not support, set to 0
1	Not support, set to 0
0	Not support, set to 0

The Status_Temperature (7Dh) command returns one data byte with contents as below:

Bits	Meaning

7	Fault setting: airflow inside exceed 75 ±5℃ or hot spot exceed 100 ±5℃ or Primary side hot spot exceed 115±5℃ Recover setting: airflow inside less than 55 ±5℃ and hot spot less than 70 ±5℃ and Primary side hot spot less than 105±5℃
6	airflow inside exceed 60 ±5℃(Warning) or hot spot exceed 70 ±5℃or Primary side hot spot exceed 110±5℃(Warning)
5	Not support, set to 0
4	Not support, set to 0
3	Reserved, read 0
2	Reserved, read 0
1	Reserved, read 0
0	Reserved, read 0

The Status_CML (7Eh) command returns one data byte with contents as below:

Bits	Meaning
7	Invalid Or Unsupported Command Received
6	Invalid Or Unsupported Data Received
5	Packet Error Check Failed
4	Not support, set to 0
3	Not support, set to 0
2	Reserved, read 0
1	Not support, set to 0
0	Not support, set to 0

The Status_Fans (81h) command reports on the status of fans installed in position

Bits	Meaning
7	Fan speed less than 800 rpm during over 10 seconds If the fan control to stop condition will not set this bit
6	Not support, set to 0
5	Fan speed less than target 3800 rpm, during over 5 seconds If the fan control target less than 4600 rpm, The warning and fault bit may be together setting.
4	Not support, set to 0
3	Not support, set to 0
2	Not support, set to 0
1	Not support, set to 0
0	Not support, set to 0

Resetting of status bits and SMBAlert signal :

The STATUS_ commands and SMBAlert signal output shall be reset only by the below methods. If the event is still present that caused the assertion of the status bit, the bit shall stay assert after clearing.

- Sending a CLEAR_FAULTS command to the power supply shall reset all STATUS_ bits to '0'. The STATUS commands accessed via the PAGE_PLUS_READ command shall not be affected by CLEAR_FAULTS.
- Reset all STATUS_bits to '0' after the AC power reset for OFF/ON cycle with a minimum OFF time of 1 second.
- The AC shut down at least more than 10ms, then turn it back on.
- The PS ON signal high level to low level.

SMBALERT_MASK :

By default the SMBAlert signal is asserted for the following cases.

- AC input voltage drops below the fault threshold of the power supply.
- Thermal sensor on ambient or hot spot or primary side hot spot inside the power supply has exceeded its warning temperature.
- +12V output current exceed warning limit.

Manufacturer's Information and Ratings :

The following commands provide the ability for manufacturers to provide summary information about the unit's ratings. This information serves as an electronic nameplate for the user's convenience.

Command	Meaning	Value
MFR_ID	Defined the manufacturer's name	LEAD YEAR
MFR_MODEL	Defined the power model name	TG15-0650-01
MFR_Serial	Product serial number	Variable

FAN Speed Control :

The power supply should support the PMBus commands to allow the system to control and monitor the power supply's fan.

Command	Meaning	Value
FAN_CONFIG_1_2	Fan 1 commanded in duty cycle 2 pulses per revolution	90h
FAN_COMMAND_1	System control fan speed of PSU by duty from 0~100%, n=0 Default value is 0 and FAN obeyed the PSU FAN control. If the system written value is over than PSU FAN control, system can control FAN speed of PSU by 0~100%. If the system written value is less than PSU FAN control or out of range or some data-error, FAN obeyed the PSU FAN control.	Word

Output Voltage Related Commands :

Command	Meaning	Value
VOUT_MODE	Linear data format, N = -9	17h