

Control Panel Model

Blackfire CCF-T INSTALLATION MANUAL



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1. Presentation

Blackfire Fire Systems as the manufacturer of the product only supply the systems reflected in this manual. These systems have been subjected to rigorous quality controls and are fully verified, ready for assembly and commissioning.

Blackfire Fire Systems is not responsible for risk situations, accidents, damages, and injuries in the following cases:

- The warnings or indications reflected in this manual are not respected.
- Inadequate maintenance.
- Replacements of system elements made by third parties or personnel not authorized by Blackfire Fire Systems.
- Installation or improper use of the system.
- Improper manipulation.

The installation company and the end user of the system must follow the instructions reflected in this document. If you have any questions, please contact your dealer.

2. Introduction to the system

The CCF-T control panels are programmable modules for the control of Blackfire MFB & MSB textile fire protection systems. They are used for the management and activation of the systems and are responsible for the real time control and manage of the motors.

Upon receiving a fire alarm signal or in case of general failure, the control panel will send an order to drop the curtains, closing the gap to be sectorized or compartmented

CCF-T are autonomous systems by means of an integrated UPS module that guarantees an autonomy of 4-6 hours of operation in case of main power supply failure.



- 1. Touch Screen.
- 2. Control panel door key.
- 3. Test Key.



3. Technical specifications

The following is a list of the technical specifications for the system:

Envelope:	Made of sheet steel thickness 1.2 mm with an antistatic powder coating.
Batteries (6):	*12V 1.3A/h batteries with a range of up to 2 hours of operation. It is necessary to calculate autonomy according to the number of motors connected.
Power Supply (7):	AC/DC power source to charge the batteries with an output of 27.6 Vdc 5A 160W.
Controller card (9):	COLDRV controller card for the management and activation of Blackfire MSB & MFB systems.
Main's terminal block (10):	Isolated terminal block.
Optional: Scape Buttons: Infrared band: NETWORK Connection (RS485):	For automatic opening and closing in case of emergency. For automatic opening and closing in case of emergency. BUS link for communication protocols.
	Ki Ki Bi Kfir Bla Kfire Blac Kfire Blackf, Kfire Kfire Blackf, Kfire Kfir



* If a prolonged time (more than 2 hours) is expected without main power supply (220Vac) the batteries must be disconnected. In the case of a time greater than 10 min place the control panel in alarm position. <u>The total</u> <u>discharge of the batteries can cause mechanical anomalies due to an uncontrolled descent of the curtains.</u>

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4. Security of system use

The CCF-T control switchboards must be installed in visible areas due the signals and indicators located on the front of the panel and in accessible places to be able to perform maintenance tasks such as battery replacement, operation tests, etc.

The system has terminals for the connection of mechanical masses (Earth or PE) in the chassis and in the control panel door avoiding possible derivations that can damage the electronic components.

The critical elements, power supply and electronic card, are protected by safety fuses preventing a possible overcurrent from damaging the equipment.

5. Product Description

The system is a control panel completely assembled and ready for assembly which has the following accessories or main elements:

Article	Description / Detail	You
Cabinet	300 x 400 mm (Width/Height)	1
Test key	Metal keys for performance testing.	2
Cabinet key	Cabinet opening key.	1
Batteries	12Vdc	2
Manuals	N/A	1

The installer must ensure that he has received all the items described.

6. Version

MODEL		CAPACITY	PROTECTION
CCF-T 3A	- OP1:	1 COLDRV 3A	FUSIBLE 7,5 A
CCF-T 5A	- OP1:	1 COLDRV 5A	FUSIBLE 7.5 A

7. System installation

The installation of the system must be carried out by qualified personnel, in case of doubt before performing any operation the installer must contact this manual and failing that to the technical department of Blackfire. The installer must be aware of the application of the system, being a security system will be considered that in case of a malfunction of this could cause serious damage to materials or people.

The correct installation of the system will extend the life of this and guarantee its correct application in case of fire.

We will divide the system installation process into several stages:



7.1. Fixing the chassis

The control panel shall be fixed considering its dimensions and, by means of the attachment points described in the following figure, shall be installed in an accessible place for subsequent maintenance:



Special care must be taken not to damage electronic components or wiring when introducing mechanical tools (drills, screwdrivers, etc.). The control panel once installed must be free of dust, metal particles, etc.



7.2. Wiring Installation (Connection).

The installation of the wiring or connection shall be carried out at the main connecting terminal. The terminal is divided into 3 sections according to the element to be related:



- Input 220 Vac: Conductors with minimum gauge AWG 15 (1.5 mm2) Neutral, Phase and Ground shall be used according to the description of the terminal.
- Alarm Input: Conductors with minimum gauge AWG 20 (0.5 mm2) Positive and Negative according to the description of the terminal will be used.
- Motor Terminal Block: Conductors with minimum gauge AWG 15 (1.5 mm2) with mesh, according to the description of the terminal will be used.



Warnings:



- Blackfire Fire Systems is not responsible for damages caused by a bad connection derived from the non-reading or misunderstanding of this manual, in case of doubt please contact our technical department.
- All the connection of the system must be made without power, the main power will not on until all the connections, including the alarm signal, have been made.
- The external connection wires (Input 220 Vac and Output 24 Vdc) will not be placed near dissipative elements (power supply, controller card, batteries). Poor organization in the internal wiring of the control panel could cause irreparable damage to the equipment.
- > Isolated terminals shall be used at the ends of the conductors to avoid false contacts and shunts.
- For the activation of the alarm signal, a normally closed potential-free contact will be used (the opening of this will generate the activation signal of the system). <u>A single independent contact will be used for each control panel.</u>
 The correct operation of the alarm contact will be verified checking if exists bounces or noises in the relay switching.
- > No external elements will be connected without the express prior authorization of Blackfire Fire Systems.
- It is advised not to perform an automatic rearmament of the alarm modules, the non-supervision of the rearmaments of the system could cause irreparable damage.



7.3. Installing COLDRV motor controller cards

The COLDRV motor modules are programmable elements that regulate and manage, the speed of descent, the uptime, and the control at rest of the motors. The main features are as follows:

• Stop by overcurrent detection: When the counterweight bar touches against the bottom of the container box in MSB & MFB systems, the motor causes an increase in current demand (intensity) which is picked up by the COLDRV controller card and serves as a maintenance mode activation signal.

* Note: Maintenance mode, motor stop status, current in a range of 0.32 to 0.40 A.

- **Stop by time:** With the "maxTimeUp" parameter in the configuration, the operating time (rise) of the barrier can be adjusted. The acting range is between 30-300s.
- **Speed and Power adjustment:** The increase in speed and power of the motors can be regulated by the potentiometer (current), this potentiometer controls the PWM cycle by delivering more or less current at the output of 24 V and consequently adjusting the speed and the power delivered to the motors.



Too slow a speed setting can disable stop devices by detecting overcurrent.

• Adjustment of descent speed: The descent speed of the barrier, can be regulated by the potentiometer (velocidad), the working range of this potentiometer ensures a descent speed between 0.03 and 0.30 m / s.



The COLDRV controller card has a dissipating resistance that transforms the kinetic energy generated by the engine in its descent into heat (Item 12). A pause period of 1-2 minutes between operation cycles is recommended.





The control card COLDRV has a series of led status indicators.



- LED 18 (RED) ACTIVE: Over-temperature in SMK 2A & 5A motors. The 24 Vdc output is disconnected to the motor.
- LED 18 (RED) BLINKING: Fallo de comunicaciones. Se desconecta la salida 24 Vdc a motor.
- LED 19 (GREEN) FAST BLINKING: COLDRV in RUN mode (UP manoeuvre).
- LED 19 (GREEN) SLOW BLINKING: COLDRV in MAINTENANCE mode.
- LED 19 (GREEN) DOUBLE BLINKING/PAUSE: COLDRV with order to MAINTENANCE.
- LED 19 (GREEN) ACTIVE: COLDRV in DOWN mode.

It is necessary to verify that the system remains in maintenance mode once the maneuver of raising the curtain has been performed.

The THERMISTOR alarm has the highest priority, following the RS485 alarm. If several alarms occur simultaneously, the one with the highest priority will be displayed. In the same way, if there are several simultaneously active alarms and one of them disappears, the one with the highest priority that remains active will remain.

- **BUS address:** With switch no. 6 the position of each one of the CMT-20 of the communication Bus is configured. It is essential to respect the initial factory configuration and the installation according to your order. Otherwise the system will launch a communications failure.
- **BUS speed**: With switch nº7 the speed of the communication Bus is configured. It is essential that all the CMT-20 installed on the Bus have the same configuration. Otherwise, the system will launch a communications failure..



7.4. Commissioning of the system.

Once all the appropriate connections described in the previous point have been made and verified, we will proceed to place the test key in a horizontal position (Alarm Mode) **<u>BEFORE FEEDING THE CONTROL PANNEL WITH MAIN CURRENT 220 Vac.</u>**

Item 3: Test key, turn the test key to its horizontal position, active alarm position

Once this step is done, we will proceed to feed the panel with main current 220 Vac. When performing this operation, the control box will be activated in fire alarm status (TEST), the control panel will show the following status indications:

- > Touch Screen On System (TEST Mode).
- Acoustic Buzzer: Active.

After this step, we will proceed to rearm the system (using the test key).

Before rearming the system, it must be verified that there are no obstacles that prevent the maneuver of raising the barrier. You must have visual presence of the barrier to verify the correct direction of rotation of the engine.

After rearming the barrier, the condition of switchboard CCF-T shall be as follows:

- Touch Screen: On system (main screen)
- > Acoustic Buzzer: No sound.



The functionality of the interface will be directly linked between the programming provided by the colet panel and the programming designed on the Nextion screen itself.

Initially when power is supplied to the system, the initialization page will be displayed on the screen. This page will be forced to start by the programming code of the collection.

Once the system is loaded, the user will see the initial notification page.



This page is the initial one of the system that shows the generic information of the curtain and the icons of user interaction.

1 QR Code. The code allows us access to the Blackfire website.

2 Name and reference. Shows the name of the project and reference of the curtain according to the client's indications.

3 Curtain status. The status of the curtain in its normal operation indicates that it is "OPERATIVE". In the event that you have an alarm, network failure, battery failure, communications failure, or fire alarm, the status will change and it will indicate the type of alarm you have received. If a Test maneuver is carried out using the key, it will indicate this state in the same way.

4 Buttons for user interaction. The user has the option to navigate through the different areas, Home, Config, Contact and Help.



Contact Area

The screen will show the company data for its location or contact information..



1 Data area.



Help Area

It will display the help pages for the user. In these pages you will find information on how to navigate through the different menus, access the curtain control, status information, access to the project documentation.

It will give us the option to choose the language before accessing.



1 Language selector. The user must select the language in which he wants to access the help.



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1 General documentation. The user has the option of accessing the general documentation of the system. This section contains the documentation for the system manuals and the control panel manual.

2 Specific documentation. The user has the option of accessing the specific documentation of the project. This section contains the installation documentation and maintenance manual.

3 Help Pages. In this menu the user can scroll through the different help sections with the numeric buttons.





5 Status indicators. Represented the different status icons of each of the alarms that are displayed on the screen and show the detail of their condition.

6 Help Pages. In this menu the user can scroll through the different help sections with the numeric buttons.



General Documentation Section



1 QR Code. By reading the QR code, the user accesses the general documentation folder for his project located on the Blackfire servers. The files that are saved in this file can only be modified by Blackfire.

2 Help Pages. In this menu the user can scroll through the different help sections with the numeric buttons.



Specific documentation section



1 QR Code. By reading the QR code, the user accesses the specific documentation folder of his project, which will only have exclusive access if accessed with password permissions, located on Blackfire servers. The files that are saved in this file can only be modified by Blackfire.

2 Help Pages. In this menu the user can scroll through the different help sections with the numeric buttons.

Blackfire

Home Area

Access to this area will be protected by password so that only those users who are allowed to control the curtain have permissions. It can only be accessed using the correct password. In the event that the password is incorrect, the user will see a page in which they will be informed that the password is incorrect and the contact details of Blackfire for the contact.



1 Number keyboard. The correct password must be entered.

2 DEL / OK. Once the password has been typed, clicking on "OK" will validate the password entered and if it is correct, the system control will be accessed. To correct the entered numbers, you can use the "DEL" button that deletes the entered data.

3 Interaction buttons. On this page the user will not have any more navigation possibilities, they will only be able to return to the initial page.

4 Contact details area.

Once the correct password is entered, the user accesses the display and control panel of the curtain.



Home Section



In this area the user can view the following information:

1 Name and reference. Shows the name of the project and reference of the curtain according to the client's indications.

2 Curtain status. Shows depending on the movement that the curtain is making, in which state it is, Raising, Lowering, Stop or Maintenance

3 Status of alarm sensors. In the normal operating state of the curtain, these sensors do not present any type of alarm, so they must all be with their indicator in green. In the event that an alarm is activated, this indicator turns red and shows the alarm that is activated.

4 Status indicators. Represented the different status icons of each of the alarms that are displayed on the screen and show the detail of their condition.

5 Engine indicator. Using digits, it indicates the last motor that had the status change.

6 TEST. This button allows action on the curtain to carry out a test manoeuvre.

7 STOP. In the blind raising manoeuvre, pressing this button allows the user to stop the blind raising and it will remain stopped until the user is pressed again to unlock the action.

8 interaction buttons. On this page the user has the possibility of browsing through the Home sections, and return to the home page.



Config Area

Access to this area will be protected by a password so that only those users who are allowed to control and edit the curtain parameters have permissions. It can only be accessed using the correct password. In the event that the password is incorrect, the user will see a page in which they will be informed that the password is incorrect and the contact details of Blackfire for the contact.



1 Number keyboard. The correct password must be entered.

2 DEL / OK. Once the password has been typed, clicking on "OK" will validate the password entered and if it is correct, the system control will be accessed. To correct the entered numbers, you can use the "DEL" button that deletes the entered data.

3 interaction buttons. On this page the user will not have any more navigation possibilities, they will only be able to return to the initial page.

4 Contact details area.

Once the correct password is entered, the user accesses the curtain's parameter configuration panel.

IMPORTANT: FOR THE CONFIGURATION, THE CURTAIN WILL STAY DOWN WITH THE MOTORS OFF.



EDIT Section



1 Name and reference. Shows the name of the project and reference of the curtain according to the client's indications.

2 Emergency rising time (ms). Parameter that assigns the time for the emergency button to raise the curtain and for it to remain stopped. Value displayed in milliseconds. You can increase or decrease the time with the "+" or "-" buttons respectively.

3 Emergency pause time (ms). Parameter that assigns the time that the blind remains stopped after pressing the emergency button to raise the blind. Value displayed in milliseconds. You can increase or decrease the time with the "+" or "-" buttons respectively.

4 Thermal Mask. Parameter used to differentiate the two types of functional action, enable (1), disenable (0)

5 All About I. Parameter used to differentiate the two types of functional action, hard top (1), soft top (0).

6 Over I Delay (s). Parameter that assigns the delay time between the maintenance signal of the first motor controller card and the rest. In the case of "All Over I (0) when one of the motor driver cards reaches the holding current state, the stop order of the rest is executed after the time assigned in this parameter.

7 Save. With the modification of parameters that are made, the changes must be saved.

8 interaction buttons. On this page the user has the possibility of browsing through the Edit, RTC, Wifi, DRVs, Log and Reset sections .



RTC Section



In this area the user can view the following information:

1 Date. RTC date setting with dd/mm/yy format. You can increase or decrease the digits with the "+" or "-" buttons respectively.

2 Hour. RTC time setting in hh:mm:ss format. You can increase or decrease the digits with the "+" or "-" buttons respectively.

3 Save. With the modification of parameters that are made, the changes must be saved.

4 Interaction buttons. On this page the user has the possibility of browsing through the Edit, RTC, Wifi, DRVs, Log and Reset sections.



WIFI Section



In this area the user can configure the Wi-Fi network connection of the control panel:

1 Data. Name and password of the Wifi network to which the user connects the control panel.

2 Information icons. The user can send the LOG and INI configuration files via previously configured email.

3 Save. With the modification of parameters that are made, the changes must be saved.

4 Interaction buttons. On this page the user has the possibility of browsing through the Edit, RTC, Wifi, DRVs, Log and Reset sections.



DRVs Section



1 NumDRVs. Parameter that corresponds to the total number of drivers that the curtain has. You can increase or decrease the value with the "+" or "-" buttons respectively.

2 rs485 BAUD. Communications bus speed.

3 maxTimeUP(s). Parameter that assigns the maximum time that the curtain can carry out in the raising manoeuvre. Value displayed in seconds. You can increase or decrease the time with the "+" or "-" buttons respectively. If this value is exceeded and the curtain has not yet reached its highest point, it will remain stopped and in maintenance current.

4 Driver selector. You can increase or decrease the value with the "+" or "-" buttons respectively.

5 Version. System software version reference.

6 Forw/Rev. Parameter that assigns the direction of rotation of the motor F (forward), R (reverse).

7 Main.C. Parameter that defines the holding current that is assigned to the motor when it reaches the top or stops at an intermediate height. You can increase or decrease the value with the "+" or "-" buttons respectively.

8 Speed UP. Parameter that regulates the rising speed of the curtain

9 Interaction buttons. On this page the user has the possibility of browsing through the Edit, RTC, Wifi, DRVs, Log and Reset sections.

10 Save. With the modification of parameters that are made, the changes must be saved.



Log Section



On this page the user will be able to view the last 15 events that the curtain has had and will be able to send them via email to have their registration.

1 Name and reference. Shows the name of the project and reference of the curtain according to the client's indications.

2 Table of Events. The system collects each of them by date and time of the event and displays them in the table.

3 Interaction buttons. On this page the user has the possibility of browsing through the Edit, RTC, Wifi, DRVs, Log and Reset sections.

IMPORTANT: Do not confuse this information. Although it is named as log, it will not be the complete system log. The system log is purged to view only and exclusively the event and to be able to show it in this table.



8. Troubleshooting

During system installation or maintenance, various problems may occur. The resolution of these must be executed by the installation company, in most cases they can be resolved according to the following table:

PROBLEM	CAUSE	SOLUTION	
Control Panel does not turn on	- Connection.	- Check input connection 220 Vac. - Check main power line.	
	- Test key in Horizontal position.	- Place the key in vertical position (Active	
Control panel reflects Alarm	- Open alarm contact.	- Close contact by means of a bridge or check Fire central detection of the building in the	
	- Test key/Connection.	 Check key test position and the correct closed contact of the alarm. 	
Shade does not ascend	- Mechanics.	 Check that the counterweight bar is not locked. 	
	- Connection. - Connection.	 Check engine connection. Check engine direction of rotation. 	
The curtain does not descend	 Mechanics. Possible system outage. Mechanics. Friction in cylindrical sliding bushings. Mechanics. Deformations in the side guides. 	 Check levelling of container drawer and side guides. Check the placement of slip bushings, there may be no fabric or elements that hinder sliding. Check the status of these. 	
Test key not working	- Connection: The contact in the alarm terminal is open.	 Close contact by means of a bridge or check central detection CDI in the case of being connected the alarm line. 	
The curtain has descended alone	- Connection: The contact in the alarm terminal is open.	- Close contact by means of a bridge or check central detection CDI in the case of being connected the alarm line.	
The engine rotates in the opposite direction	- Connection: The polarity of the connection is reversed.	- Reverse the polarity in the engine connection and test again	
The curtain descends 2 seconds and rearms itself	 Connection: There is a problem with the fire alarm signal: Shared contact with other teams. Alarm cable length too long. 	 Check that the delivered contact is exclusive to the curtain. Check that the distance between the alarm cable is not excessive. *Note: A relay may be placed in the header of the control box to clean the alarm contact. 	
Communication failure	 Connection. Switch BUS and Speed configuration. 	 Check main communication line RS485. Check the switchs of BUS Adrees and BUS Speed. 	



9. Maintenance and Cleaning

Since fire curtains and smoke control curtains are a product of high importance in terms of fire safety, the owner of the building has the obligation to keep the curtains in good working order, being inspected and tested regularly.

To ensure the reliability and integrity of textile roller fire curtains, the system must be inspected, evaluated, and repaired by trained and qualified personnel for product maintenance.

The system must be verified in the following periods:

✓ Monthly:

A manual test will be carried out by means of the curtain control panel, the correct functioning of this will be verified.

✓ <u>Annually:</u>

Several tests of operation of the curtain will be carried out through the control panel, the condition of the batteries will be <u>verified</u> which have to be replaced <u>every 2 years.</u>

10. Storage and transport

The systems are packaged for transport by protective plastic (bubble paper), cardboard and retractable plastic throughout its exterior, all elements are placed on pallets and secured by strapping.

Despite the packaging used, it is recommended to store the pieces inside to avoid those climatic causes can affect the system. It is always recommended the unloading of the systems by means of machinery (bulls, elevators, cranes, etc.) that facilitates their positioning on the work area.

11. Environment

Regulations on the environment and local waste management must be respected, the system and its elements do not present (in their usual use) elements that may be harmful to health or the environment.



12. Annexes:



REF	ELEMENTO / ITEM	MATERIAL	DESCRIPCION / DESCRIPTION
1	PANTALLA TÁCTIL / TOUCH SCREEN	N/A	N/A
2	LLAVE DE APERTURA PUERTA / DOOR OPENING KEY	PLASTICO / PLASTIC	N/A
3	LLAVE DE TEST / TEST KEY	METAL / METAL	N/A





REF	ELEMENTO / ITEM	MATERIAL	DESCRIPCION / DESCRIPTION
4	BATERIAS / BATTERIES	N/A	2 PCS 12V 1.3 Ah (STANDAR)
5	FUENTE DE ALIMENTACION CARGA BATERIAS BATTERY CHARGING POWER SUPPLY	N/A	27 Vdc potencia según modelo 27 Vdc power acording model
6	TARJETA CONTROLADORA COLDRV BOARD	N/A	TARJETA CONTROLADORA COLDRV BOARD
7	BORNERA PRINCIPAL DE CONEXION MAIN CONNECTION TERMINAL	PLASTICO / PLASTIC	BORNERO PRINCIPAL PARA EL CONEXIONADO DE ALIMENTACION, ALARMA Y SALIDA MAIN TERMINAL CONNECTION FOR THE MAIN POWER SUPPLY, ALARM AND POWER OUT

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REF	DETALLE / DETAIL
1	BORNE EN PLACA DE ENTRADA 24 Vdc
1	TERMINAL IN BOARD FOR 24 Vdc INPUT
2	BORNE DE CONEXION PARA EL MOTOR / MOTOR TERMINAL
3	BORNE LLAVE DE TEST / KEY TEST TERMINAL
4	ENTRADA SEÑAL FALLO BATERÍAS / BATTERY FAILURE SIGNAL IN
5	ENTRADA SEÑAL FALLO DE RED / MAINS POWER FAILURE SIGNAL IN
6	BORNE ALARMA FUEGO / FIRE ALARM TERMINAL
7	BORNE DE CONEXION PROTOCOLO DE COMUNICACIONES R5485
,	CONNECTION TERMINAL FOR R5485 COMMUNICATION PROTOCOL
8	SWITCH DE CONFIGURACIÓN DE LA VELOCIDAD DEL PROTOCOLO DE COMUNICACIÓN RS485
0	SWITCH FOR SETTING THE SPEED OF THE RS485 COMMUNICATION PROTOCOL
9	DIRECCIÓN BUS DE LA SITUACIÓN DE LA PLACA EN EL MEDIO DE COMUNICACIÓN
5	BUS DIRECTION OF THE BOARD LOCATION IN THE COMMUNICATION MEANS
10	BORNE PARA PROGRAMACIÓN DE TARJETA COLDRV
10	TERMINAL FOR PROGRAMING COLDRV ELECTRONIC BOARD
11	SWITCH DE CONFIGUACIÓN DE PLACA
	SWITCH FOR CONFIGURATION BOARD
12	BORNE DE CONEXIÓN PANTALLA TÁCTIL
	CONNECTION TERMINAL FOR TOUCH SCREEN
13	FUSIBLE DE SEGURIDAD / SAFETY FUSE
14	ZUMBADOR ACUSTICO EN CASO DE ALARMA / ACOUSTIC BUZZER IN CASE OF ALARM
15	BOTÓN PARA CARGA DE FIRMWARE / FIRMWARE DOWNLOAD BUTTON
16	BOTÓN RESET / RESET BUTTON
17	BOTÓN RESET DISPLAY / DISPLAY RESET BUTTON
19	ZÓCALO TARJETA MICRO-SD PARA CARGA DE SOFTWARE
10	MICRO-SD TERMINAL TO SOFTWARE DOWNLOADING
10	MICROPROCESADOR CON ANTENA WIFI
19	MICROPROCESSOR WITH WIFI ANTENNA
20	DISIPADOR DE TEMPERATURA GENERADA EN EL SISTEMA DE FRENADO
20	ELEMENT HEATSINK FOR THE TEMPERATURE GENERATED IN THE BRAKE SYSTEM





160W Single Output with Battery Charger(UPS Function) **PSC-160** series



Features

- · Universal AC input / Full range
- · Built-in active PFC function
- 6"x3" compact PCB size
- Models with L-Bracket and cover available (PSC-160x-C, x=A,B)
- · Protections: Short circuit / Overload / Over voltage
- Battery low protection / Battery reverse polarity protection by fuse
- Relay contact signal output for AC OK and Battery Low
- · Cooling by free air convection
- + 100% full load burn-in test
- · 2 years warranty

Description



Applications

- Security system
- · Emergency lighting system
- · Alarm system
- · UPS system
- Central monitoring system
- · Access systems

PSC-160 series is a 160W AC/DC security power supply, allowing the universal input range between 90VAC and 264VAC and incorporating the built-in PFC function. In addition to the primary output, there is a charger output, with the smaller rated current, that provides the backup power supply application the security access systems require.

PSC-160 delivers an efficiency up to 90%; it can operate with air convection under -20°C through 70°C. This series is designed with thorough alarm features, including AC OK and battery low signaling; moreover, the relay contact is provided to facilitate users' system designs. PSC-160 is available in the PCB type or the enclosed type with L-Bracket and cover.

Model Encoding



File None: PSG-160-8PEC 2014-07-01

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160W Single Output with Battery Charger(UPS Function) **PSC-160** series

MODEL		PSC-160A		PSC-160B	PSC-160B	
	OUTPUT NUMBER	CH1	CH2	CH1	CH2	
	DC VOLTAGE	13.8V	13.8V	27.6V	27.6V	
	RATED CURRENT	7.6A	4A	3.8A	2A	
	CURRENT RANGE	0~11.6A		0~5.8A		
UTPUT	RATED POWER	160W		160W	I	
	RIPPLE & NOISE (max.) Note.2	150mVp-p		240mVp-p		
	VOLTAGE ADJ. RANGE	CH1: 12 ~ 15V		CH1: 24 ~ 29V	1	
	VOLTAGE TOLERANCE Note 3	±1.0%		+1.0%		
	LINE REGULATION	+0.5%	T Pressent	+0.5%		
	LOAD REGULATION	+0.5%		+0.5%		
	SETUP RISE TIME Note 4	2000ms 30ms/230VAC	2000ms 30ms/115	VAC at full load	1 and the second	
	HOLD LID TIME (Ture)	40ma(320)/AC /0ma	(115)/AC at full load	in our full look		
	VOLTAGE BANGE	40mar2007AG 40ma				
		47 \$204 VAG 127 -	370400			
	POWER FACTOR (Typ)	47~63Hz				
PUT	EEEICIENCY (Typ.)	PF ≥ 0.95/230 VAC PF ≥ 0.98/115 VAC at tull load				
	AC CURRENT (Typ.)	88% 90% 2.54(45)/AC 4.54(229)/AC				
	INDUSH CURPENT (Ture)	Z.0A/110VAG 1.0A/230VAG				
	LEAKAGE CURRENT	COLD START SOAVTIOVAG TOAVZSOVAG				
	LEANAGE CONNENT					
	OVERLOAD	105 ~ 150% rated output power				
OTECTION		CH1:14.48 ~ 18.63V CH1:28.98 ~ 37.26V				
	OVER VOLTAGE	CH1:14:48 ~ 18:53V CH1:28:98 ~ 37:26V				
		Protection type : onlit downloop voltage, re-power on to recover 1040 51/ 2014/1				
	BATTERY CUT OFF	10±0.5V	10.012 0.05 10.0	20±1V		
LARM	AC OK Note 5	Relay contact output, ON : AC UK : OFF : AC Fail: Max. racing : 30V / 1A				
INCTION	BATTERY LOW	Relay contact output, OFF : Battery OK ; ON : Battery Lo		ttery Low (Max. rating : 30V / 1	A	
		Battery low voltage : < 11	1	Battery low voltage	:<22V	
	WORKING TEMP.	-29 ~ +/0 C (Kerer to "Derading Curve")				
	WORKING HUMIDITY	20~90% RH non-condensing				
VIRONMENT	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/°C (0~45°C) on CH1 output				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes				
	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved				
AFETY &	WITHSTAND VOLTAGE	I/P-O/P:3KVAC //P-FG:2.0KVAC 0/P-FG:0.5KVAC				
MC	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C/ 70% RH				
iote 4j	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A				
	MTBF	257K hrs min. MIL-HDBK-217F (25°C)				
THERS	DIMENSION	PCB:152.4*76.2*32mm (L*W*H) ; Enclosed type:155.4*85*37mm (L*W*H)				
	PACKING	PCB:0.35Kg/42pcs/15.7Kg/1.22CUFT ; Enclosed type: 0.45Kg;32pcs/15.4Kg/0.94CUFT				
DTE	 All parameters NOT speciali Flipple & noise are measure Tolerance : includes set up i Length of set up time is measure Please refer to suggested A The power supply is conside still meets EMC directives. Final set and the set and	reters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. noise are measured at 20MHz of bandwidth by using a 12° twisted pair-wire terminated with a 0.1ut & 47ut parallel capacitor. e : includes set up tolerance, line regulation and load regulation. f set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time, after to suggested Application 2.(2) + (3) in page 3. er supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it is EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." able on http://www.meanwell.com)				

File Name PSC-160-SPEC 2014-07-01





File Name: PSC-180-SPEC 2014-07-01





File Nume:PSC-150-SPEC 2014-07-01



	MEAN WELL	
	EC declaration of co	nformity
For the following equipment	nt :	
Product Name: Switching I	Power Supplies	
Model Designation: PSC-1	60x , PSC-160x-C(x=A or B)	
is herewith confirmed to c were applied :	comply with the requirements set out in	the Council Directive, the following standard
RoHS Directive (2011	/65/EU)	
ENGODED 1:2006+411+41	+012+02 TUV 00	ertificate No : R50292074
EN0030-1.2000-A11-A1	1010	
Electromagnetic Com	patibility Directive (2004/108/EC) :	
EMI (Electro-Magnetic In	terference)	
Conducted emission / Rad	lated emission EN55022:2010 EN55011:2009+A1:2010 (Group 1) EN61000-6-3:2007+A1:2011	Class B Class B
Harmonic current	EN61000-3-2:2006+A1:2009+A2:2009	9
Voltage flicker	EN61000-3-3: 2013	
EMS (Electro-Magnetic S	usceptibility)	
EN55024.2010 EN61204	I-3:2000 EN61000-6-1:2007	
ESD air	EN61000-4-2:2009	Level 3 8KV
ESD contact	EN61000-4-2:2009	Level 2 4KV
RF field susceptibility	EN61000-4-3:2006+A1:2008+A2:2010	D Level 2 3V/m
EFT bursts	EN61000-4-4:2012	Level 2 1KV/5KHz
Surge susceptibility	EN61000-4-5:2006	Level 3 1KV/Line-Line 2KV/Line-Earti
Conducted susceptibility	EN61000-4-6:2009	Level 2 3V
Magnetic field immunity	EN61000-4-8:2010	Level 2 3A/m
Voltage dip, interruption	EN61000-4-11:2004 >95% dip 0.5 periods	30% dip 25 periods >95% interruptions 250 period
Note: A component power supply v enclosure. Since EMC perform EMC Directive on the complete The EMC tests mentioned abx For guidance on how to perfo http://www.meanwell.com)".	with load will be installed into final equipmen nance will be affected by the complete installati e installation again. Size are performed using a well defined metal rm these EMC tests, please refer to "EMI test	It which consists of an electronically shielded met ion, the final equipment manufacturers must re-qualif plate to simulate said metal enclosure. sting of component power supplies".(as available o
This Declaration is effective fr	om serial number EB4xxxxxxx	
Person responsible for ma	rking this declaration :	
Mean Well Enterprises Co (Manufacturer Name)	., Ltd.	
No.28, Wuquan 3rd Rd., M (Manufacturer Address)	/ugu Dist., New Taipei City 248, Taiwan	N A nA
Johnny Huang/Senior Verificatio (Name / Position)	n Engineer : <u>///////</u> Ted Ct (Signature) (Name	heng/Product Manager : /Position) (Signature)

Version : 0