

# APOLLO Plus PORTABLE DIMMER SERIES



# USER'S MANUAL





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## Overview

The APOLLO Plus dimmer produced by ELECTRON is a heavy duty dimmer manufactured to meet the highest user requirements.

The housing of the dimmer is made of aluminium with 3mm thickness, resistible to every strain and crash that could occur during transportation or installation.

The robust handle on the right side of the device allows easy transportation and mounting on truss. The device can also be mounted on wall or rack. In addition, the device allows for both horizontal and vertical operation. Therefore, the Apollo Plus series is suitable for every operational condition.

All control sliders and dimmer outputs are located at the front side of Apollo Plus to allow easy access and operation. These do not extend from the aluminum cover, for further protection.

The lighting control becomes a pleasant experience when using the Apollo Plus series, since the user can use 24 Scenes, 24 Chasers (12 programmable), the operation Loop of 60 steps, and 8 programmable Remote Commands. The user can further set the operation of the sliders and make other adjustments as well.

The more than 250 different models of Apollo Plus dimmers available, satisfy all user requirements regarding the output type, the number of channels per output, the sliders, the total power and the type of power supply. The user can, therefore, select the right dimmer for any purpose.

ELECTRON S.A. would like to thank you for choosing the Apollo Plus dimmer and assures you that this is an amazing tool for every kind of application. We believe that using the Apollo Plus dimmer will be very exciting for you.

For safe and correct operation, please read the instruction manual very carefully, before using this dimmer.

ELECTRON S.A.

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## **Precautions and Operation Notes**

### **Introduction**

Please read this instruction manual very carefully.

- In case that something is not clear enough in this manual, please contact your local supplier.

### **Before Installation**

- Make sure that the supply cable is connected to a mains switch and the appropriate circuit breaker, depending on the total dimmer load.
- Check that the mains switch of the electrical distribution board is set at the OFF-Position.

### **Installation**

- In case you have any doubt about the wiring connections or the operating instructions of this device, please contact your supplier or a qualified person.
- This is a Class-I dimmer and should be grounded (earth wire).
- No matter where the dimmer is located, make sure that all the air cooling openings and especially the handle are free to let the air flow inside the device.
- The rear side of the dimmer should also be free to let the cooling air flow freely. All dimmers have integrated thermostats to activate the cooling fan in the rear side.
- Do not supply this dimmer with only one phase. The device is designed to operate under three phase power supply.
- The area where the dimmer is located should never get wet.
- The whole installation area should not have high ambient humidity.
- Do not operate this dimmer in areas where the ambient temperature exceeds 35°C.
- In case of truss mounting, make sure that the dimmer has a safety fume.
- ELECTRON S.A. is not responsible for any accident or damage caused by incorrect installation or improper use of the equipment.

### **After Installation and Power Supply Connection**

- Make sure that the dimmer is installed and connected properly.
- Turn-on the power.
- Do not use wet clothes to clean the dimmer during operation.
- To avoid danger, do not put flammable material near the dimmer.
- Do not use water to clean the dimmer.
- Do not try to open the dimmer box. There is danger of electric- shock.
- Do not try to repair the dimmer yourself by opening the dimmer box, because there is danger of electric- shock, and also because there are no extra parts or material that you can replace. The service should always be performed by an authorized person.

# Installation Manual

## Introduction

Before using this dimmer for the first time, make sure that this is correctly installed and connected by a specialist.

**Attention:** The dimmer should be placed in a dry location, with low levels of humidity and ambient temperature below 35°C.

Once these conditions are met, the Apollo Plus dimmer can be installed.

## Horizontal and Vertical Operation



The Apollo Plus dimmer is suitable for horizontal operation, standing on the four little rubber feet underneath its base.

The dimmer can also be placed vertically, with the handle at the upper (left) side of the dimmer, e.g. when the user wants to place the dimmer on the floor.

For this reason, the dimmer is supplied with four extra rubber feet stored at the rear side. These should be moved to the left side so that the dimmer can be vertically placed:

- With an appropriate screwdriver, unscrew the four rubber feet from the rear side of the dimmer.
- Screw the rubber feet into the four screw positions at the left side of the dimmer (the mounting should be orthogonal).

☞ You can leave the dimmer permanently in vertical position, if you intend to remove it often.

**Attention:** The holding screws of the rubber feet are DIN 4mm thick and 15mm long. In case you accidentally loose these, **DO NOT** use similar screws longer than 20mm.

## Truss Mounting



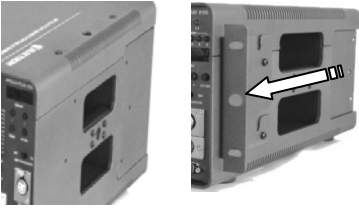
Hook Clamp for Truss mounting

On the handle of every Apollo Plus dimmer, there is a screw hole appropriate for DIN 8mm screws. Once you fix the right hook clamp to this screw, you can place the dimmer on a truss.

**Attention:** Do not forget to use a safety fume for binding the dimmer by the handle on the truss, so as to avoid accidental fall in case of loosen hook.

**Attention:** The maximum depth for the hook clamp fixing screws is 20mm. If you try to fix the clamp of the handle by using a screw longer than 20mm, there is danger of destroying the handle.

## Rack Mounting



Rack mounting Accessories

All Apollo Plus dimmers can be mounted on a standard 19"-Rack with the use of a set of rack mounting accessories.

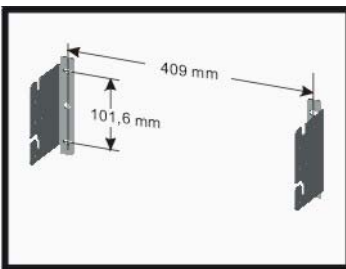
The ordering code for this set is: 300.ACC.003

- Unscrew from the rear side of the dimmer the four nickel plated DIN 6mm screws which hold the two metal rack mounting accessories at the left and right side of the device.
- Screw the metal holdings on the front left and front right side of the dimmer box, by using the screws provided to you.
- Use the four 6mm nickel plated screws to place the dimmer on the rack.

In case you had previously placed the dimmer vertically, remove the four rubber feet from the left side of the dimmer, and screw them on the rear side to free the space for the rack mounting accessories.

**Attention: Do not ever use screws longer than the ones provided to you (4x10mm) for placing the metal holdings at the front sides of the dimmer.**

## Wall Mounting



Wall mounting

The Apollo Plus dimmer can also be wall mounted, by using the set of wall fixing accessories available.

The ordering code for this set is: 300.ACC.013

Notice that the models with male CEE-17 supply plug cannot be fixed on the wall, because of the large size of the female socket CEE-17 (Wall fixing is possible only when the space left behind the dimmer is enough).

- Make four holes on the wall so that they build the edges of an orthogonal 409 mm wide and 101.6 mm high.
- Place the screws through the two metal holdings on the wall as shown in the picture on the left. Be careful not to confuse the left with the right holding.
- Screw the four brass (6mm thick) fittings to the screw holes on the left and right side of the dimmer (two on each side).
- In case you had previously placed the dimmer vertically, remove the four rubber feet from the left side of the dimmer and screw them on the rear side.
- Slide the dimmer to the metal holdings.
- Screw the safety pins to the holdings.

☞ The Apollo Plus models 350C, 363C, 625C and 7XXX are not suitable for wall mounting.

# Electrical Connection

## Introduction

The electrical supply connection should always be realized by a specialist.

**Attention:** The voltage supply cable of the dimmer must **ALWAYS** have a mains switch and the appropriate circuit breaker (depending on the dimmer total power).

The operating voltages and maximum power consumptions of the Apollo Plus dimmers are listed below.

## Operating Voltage

### Star type circuit connection:

Models: Apollo Plus \*\*\*\* - \*\*\*\*\* 2 \*  
Apollo Plus \*\*\*\* - \*\*\*\*\* 3 \*

Operating voltage: **400 / 230 V ~ 3 / N / PE / 50 Hz**

### Delta type circuit connection:

Models: Apollo Plus \*\*\*\* - \*\*\*\*\* 5 \*  
Apollo Plus \*\*\*\* - \*\*\*\*\* 6 \*

Operating voltage: **230 V ~ 3 / PE / 50 Hz**

Note: The asterisk (\*) stands for any valid digit or letter of the Apollo Plus serial numbers.

## Maximum Power Consumption

A dimmer has maximum power consumption when all channels are driven under maximum load.

Models: Apollo Plus 6 1 0 \* - \*\*\*\*\*

Max. Power Consumption: **13.830 W (4.610 W / phase) (≈20 A / phase)**

Models: Apollo Plus 6 1 6 \* - \*\*\*\*\*

Max. Power Consumption: **22.110 W (7.370 W / phase) (≈32 A / phase)**

Models: Apollo Plus 6 1 5 \* - G B S \*\*\*\*\*

Max. Power Consumption: **20.730 W (6.910 W / phase) (≈30 A / phase)**

Models: Apollo Plus 6 2 5 C - C E E \*\*\*\*\*  
Apollo Plus 3 5 0 C - C E E \*\*\*\*\*

Max. Power Consumption: **34.530 W (11.510 W / phase) (≈50 A / phase)**

Models: Apollo Plus 3 6 3 C - C E E \*\*\*\*\*

Max. Power Consumption: **43.500 W (14.500 W / phase) (≈63 A / phase)**

Models: Apollo Plus 7 1 0 \* - \*\*\*\*\*

Max. Power Consumption: **27.645 W (9.215 W / phase) (≈40 A / phase)**

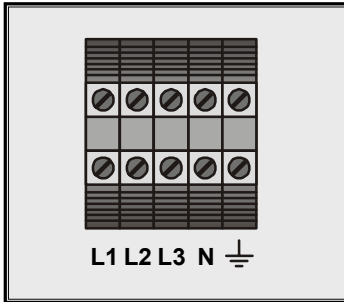
Models: Apollo Plus 7 1 6 \* - \*\*\*\*\*



Max. Power Consumption: **43.500 W (14.500 W / phase) (≈63 A / phase)**

Note: The asterisk (\*) stands for any valid digit or letter of the Apollo Plus serial numbers.

### Star type Power Supply for Devices with Screw Terminals

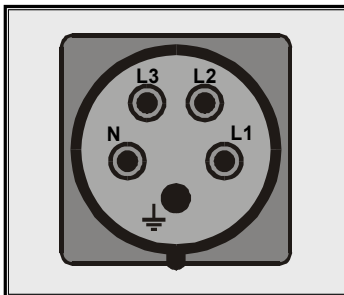


Models: Apollo Plus \*\*\*\* - \*\*\*\*\* 2 \*

- Remove the security cover of the device with an appropriate screwdriver.
- Loosen the screw cap of the plastic cable gland so that the supply cable passes through.
- Connect the 5 power supply wires to the dimmer terminals as indicated in the connection scheme on the left. Beware that the cable cross section must be appropriate to hold the maximum power consumption of the dimmer.
- Bring the security cover towards the rear side of the dimmer and screw the plastic cable gland so as to hold the supply cable.
- Put the security cover back and fix the screws using the appropriate screwdriver.

**Attention: The cable gland should embrace the external cable insulation and not the five wires.**

### Star type Power Supply for Devices with CEE-17 Socket

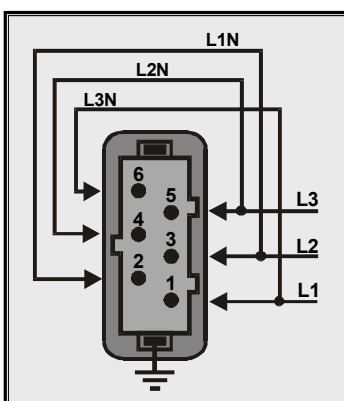


Models: Apollo Plus \*\*\*\* - \*\*\*\*\* 3 \*

- Connect the 5 power supply wires to the female CEE-17 socket which is included in the carton box of the dimmer. The connection should be done according to the diagram on the socket (see left scheme). Beware that the cable cross section should be appropriate to hold the maximum power consumption of the dimmer.
- Connect the female socket with the cable to the male CEE-17 plug at the rear side of the dimmer. Please make sure that you have mounted them correctly.

The scheme on the left indicates the connections of each terminal on the male plug CEE-17, at the rear side of the dimmer.

### Delta type Power Supply for Devices with Harting Socket

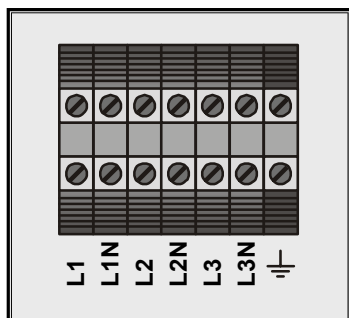


Models: Apollo Plus \*\*\*\* - \*\*\*\*\* 5 \*

- Plug to the male Harting mounted at the rear side of the dimmer the socket (not supplied with the dimmer). Connect the three phase supply and the earth (230 V~ 3 / PE / 50 Hz) as indicated in the connection scheme on the left. Beware that the cable cross section must be appropriate to hold the maximum power consumption of the dimmer. Also, check that all seven wires (2 for each phase and one for the ground) are supplied correctly from the electrical distribution board.

☞ The Apollo Plus models 350C, 363C, 625C and 7XXX are not available with this socket.

### Delta type Power Supply for Devices with Screw Terminals



Models: Apollo Plus \* \* \* \* - \* \* \* \* \* 6 \*

- Remove the security cover of the device with an appropriate screwdriver.
- Loosen the screw cap of the plastic cable gland so that the supply cable passes through.
- Connect the 7 supply wires to the dimmer terminals as indicated in the connection scheme on the left. Beware that the cable cross section must be appropriate to hold the maximum power consumption of the dimmer and also that all seven wires (2 for each phase and ground) are supplied correctly from the electrical distribution board.
- Bring the security cover towards the rear side of the dimmer and screw the plastic cable gland to fix the supply cable.
- Put the security cover back and fix the screws using the appropriate screwdriver.

**Attention: The cable gland should embrace the external cable insulation and not the seven wires.**

☞ The Apollo Plus models 625C and 7XXX are not available with terminal block power supply.

## Load Connection

### Introduction

Apollo Plus dimmers are supported with different types of sockets and power plugs placed at the front side of the device, for easy load connection and disconnection.

The number of power outputs per channel varies from one to four, depending on the type of the socket.

The load connections should always be realized by a specialist.

**Attention: Each load should be connected to the dimmer separately. More particularly, the phase, the neutral and the ground of each load should be connected to the dimmer's socket. Do not use common neutral wire that ends to the distribution board.**

All Apollo Plus dimmers have 10A, 16A or 25A, 50A or 63A fuse or circuit breaker on every output channel depending on the model, to protect the channels from short circuit or overload.

The model "C" dimmers are available with Miniature Circuit Breakers.

The model "S" dimmers are available with heavy duty fuse holders of 10A (for 5x20mm fuses) and 16A (for 6,3x32mm fuses) depending on the dimmer.

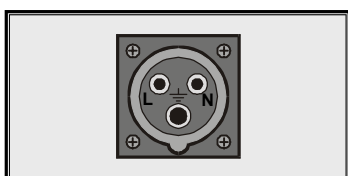
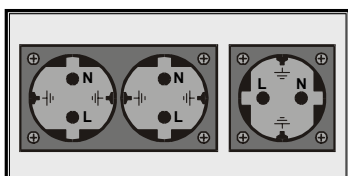
**Attention: For correct output channel protection, you should always use fuses of 10A/250V ~ 5mmX20mm or 16A/250V ~ 6,3mmX32mm, slow (time lag), with high breaking capacity.**

### Load Types

The load types that can be connected to the APOLLO Plus series are:

- Resistive and Inductive loads.
- Incandescent lamps.
- Iron core transformers to supply low voltage lamps (e.g. halogen).
- Fluorescent lamps.

### Power Supply Sockets and Output Plug types



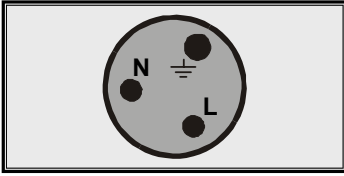
The Apollo Plus dimmers are supplied with many different types of supply sockets and output plugs. All the available types of plugs, sockets and electrical connections are listed below. The schematics show the front side of the available dimmers.

#### Single and double Schuko sockets.

Models:	APOLLO Plus 6**C - SCH **1**	Single Schuko socket.
	APOLLO Plus 6**S - SCH **2**	Double Schuko socket.
	APOLLO Plus 7**S - SCH **1**	Single Schuko socket.

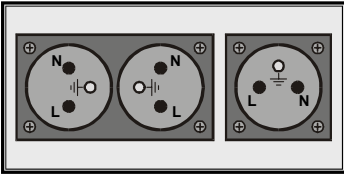
#### Socket CEE-17 (3x16A or 3x32A or 3x63A).

Models:	APOLLO Plus 3**C - CEE **1**	Single CEE socket.
	APOLLO Plus 6**C - CEE **1**	Single CEE socket.
	APOLLO Plus 6**S - CEE **2**	Double CEE socket.
	APOLLO Plus 7**S - CEE **1**	Single CEE socket.



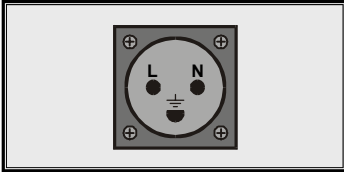
**Socket GB 15A.**

Models: APOLLO Plus 6\*\*C - GBS \*\*1\*\* Single GB socket.  
 APOLLO Plus 6\*\*S - GBS \*\*2\*\* Double GB socket.  
 APOLLO Plus 7\*\*S - GBS \*\*1\*\* Single GB socket.



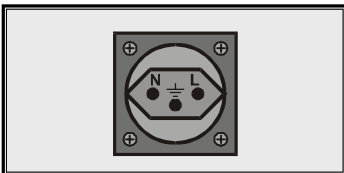
**Single and double French Type socket.**

Models: APOLLO Plus 6\*\*C - FRS \*\*1\*\* Single socket.  
 APOLLO Plus 6\*\*S - FRS \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - FRS \*\*1\*\* Single socket.



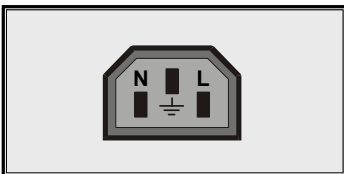
**Danish socket.**

Models: APOLLO Plus 610C - DNS \*\*1\*\* Single socket.  
 APOLLO Plus 610S - DNS \*\*2\*\* Double socket.  
 APOLLO Plus 710S - DNS \*\*1\*\* Single socket.



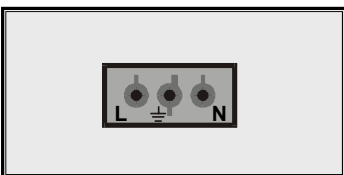
**Swiss socket.**

Models: APOLLO Plus 610C - SWS \*\*1\*\* Single socket.  
 APOLLO Plus 610S - SWS \*\*2\*\* Double socket.  
 APOLLO Plus 710S - SWS \*\*1\*\* Single socket.



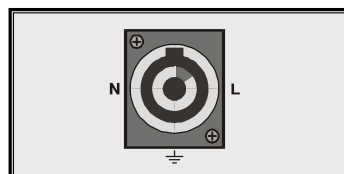
**Socket IEC - Type.**

Models: APOLLO Plus 7\*\*C - IEC \*\*1\*\* Single socket.  
 APOLLO Plus 610S - IEC \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*C - IEC \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - IEC \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*S - IEC \*\*3\*\* Triple socket.



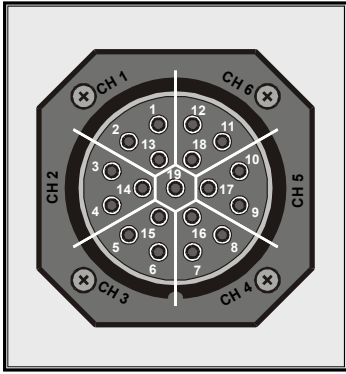
**ST18/3 Wieland socket.**

Models: APOLLO Plus 7\*\*C - WLD \*\*1\*\* Single socket.  
 APOLLO Plus 610S - WLD \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*C - WLD \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - WLD \*\*2\*\* Double socket.  
 APOLLO Plus 610S - WLD \*\*3\*\* Triple socket.  
 APOLLO Plus 6\*\*C - WLD \*\*3\*\* Triple socket.  
 APOLLO Plus 7\*\*S - WLD \*\*3\*\* Triple socket.  
 APOLLO Plus 616S - WLD \*\*4\*\* Quad socket.



**Power Con socket.**

Models: APOLLO Plus 7\*\*C - POC \*\*1\*\* Single socket.  
 APOLLO Plus 610S - POC \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*C - POC \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - POC \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*S - POC \*\*3\*\* Triple socket.



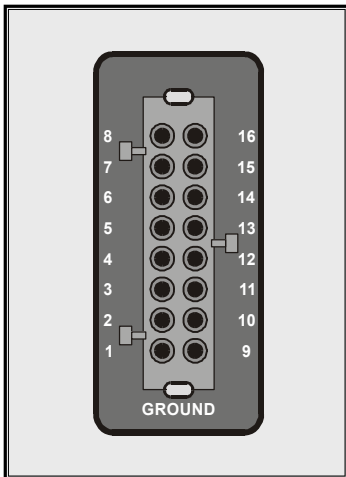
### 19 PIN SOCAPEX socket.

Models: APOLLO Plus 7\*\*C - SCP \*\*1\*\* Single socket.  
 APOLLO Plus 610S - SCP \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*C - SCP \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - SCP \*\*2\*\* Double socket.  
 APOLLO Plus 616S - SCP \*\*4\*\* Quad socket.

PIN DESCRIPTION							
	CHAN. 1	CHAN. 2	CHAN. 3	CHAN. 4	CHAN. 5	CHAN. 6	CHASSIS
LIVE	1	3	5	7	9	11	
NEUTRAL	2	4	6	8	10	12	
GROUND	13	14	15	16	17	18	19

Pin description of channels 7 – 12 for models 7\*\*\*.

PIN DESCRIPTION							
	CHAN. 7	CHAN. 8	CHAN. 9	CHAN. 10	CHAN. 11	CHAN. 12	CHASSIS
LIVE	1	3	5	7	9	11	
NEUTRAL	2	4	6	8	10	12	
GROUND	13	14	15	16	17	18	19



### 16 PIN HARTING socket.

Models: APOLLO Plus 7\*\*C - HRT \*\*1\*\* Single socket.  
 APOLLO Plus 610S - HRT \*\*2\*\* Double socket.  
 APOLLO Plus 6\*\*C - HRT \*\*2\*\* Double socket.  
 APOLLO Plus 7\*\*S - HRT \*\*2\*\* Double socket.  
 APOLLO Plus 616S - HRT \*\*4\*\* Quad socket.

PIN DESCRIPTION						
	CHAN. 1	CHAN. 2	CHAN. 3	CHAN. 4	CHAN. 5	CHAN. 6
LIVE	1	2	3	4	5	6
NEUTRAL	9	10	11	12	13	14
GROUND	GROUND	GROUND	GROUND	GROUND	GROUND	GROUND

Pin description of channels 7 – 12 for models 7\*\*\*.

PIN DESCRIPTION						
	CHAN. 7	CHAN. 8	CHAN. 9	CHAN. 10	CHAN. 11	CHAN. 12
LIVE	1	2	3	4	5	6
NEUTRAL	9	10	11	12	13	14
GROUND	GROUND	GROUND	GROUND	GROUND	GROUND	GROUND

Note: Pins 7, 8, 15 and 16 are not used.

### Distribution of the three phase Power Supply

Regardless of the socket type or power plug, the distribution of the three phase power supply in all Apollo Plus dimmers is as follows:

- Phase 1: Channels 1, 2 and 7, 8.
- Phase 2: Channels 3, 4 and 9, 10.
- Phase 3: Channels 5, 6 and 11, 12.

# Dimming Control

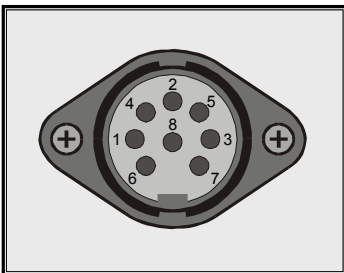
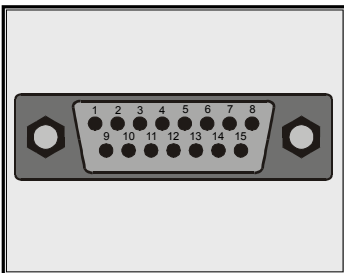
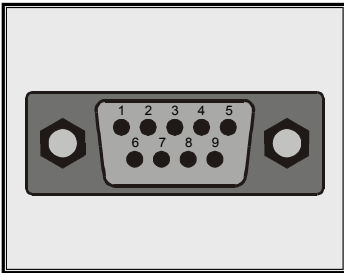
## Introduction

The Apollo Plus series consists of intelligent dimming units which provide many features. The control of the output level of each dimmer channel can take place in several ways, and with combinations of programmed operations. The user should be very familiar with all dimmer control options and their activation, in order to take advantage of all operating features. For this reason, the description of the Apollo Plus series in this manual is divided in chapters, starting with the simple standard features and ending with the advanced ones, so that everything is clear to the user.

This chapter presents the simplest ways of adjusting the dimmer. These include the analogue input signal of 0-10V for each channel, the serial digital control signal DMX-512, and the use of the build-in slider placed at the front side of the dimmer (such sliders are available only in the "C" series).

The channel level can be adjusted in all three ways at the same time. The final channel output level is the highest control level, deriving either from the analogue or the digital input or from the level of the build-in slider.

## Analogue Control



At the front side of every Apollo Plus dimmer, there is a male D-sub 9 pin plug (D-sub 15 pin for Apollo Plus models 7\*\*\*) which is used to control the dimmer by an analogue control desk (0/+10V).

The same dimmer plug provides 20 VDC to supply a compact control desk (e.g. Control Desk E1115-6M of ELECTRON).

The schemes on the left show the pin-distribution of a D-sub 9 and a D-sub 15 pin interface. The electrical connection of these interfaces is as follows:

Pin 1: Analogue Input 1  
Pin 2: Analogue Input 2  
Pin 3: Analogue Input 3  
Pin 4: Analogue Input 4  
Pin 5: Analogue Input 5  
Pin 6: Analogue Input 6  
Pin 7: Not used  
Pin 8: +20 VDC (Max.: 50 mA)  
Pin 9: 0 V (Common)

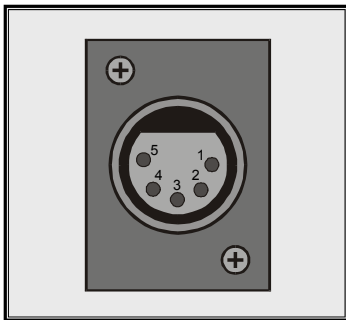
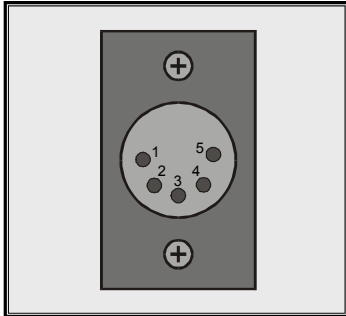
Pin 1: Analogue Input 1  
Pin 2: Analogue Input 2  
Pin 3: Analogue Input 3  
Pin 4: Analogue Input 4  
Pin 5: Analogue Input 5  
Pin 6: Analogue Input 6  
Pin 7: Analogue Input 7  
Pin 8: Analogue Input 8  
Pin 9: Analogue Input 9  
Pin 10: Analogue Input 10  
Pin 11: Analogue Input 11  
Pin 12: Analogue Input 12  
Pin 13: Not used  
Pin 14: +20 VDC (Max.: 50 mA)  
Pin 15: 0 V (Common)

Apollo Plus models with GB15A socket (APOLLO Plus \*\*\*\* - GBS \*\*\*\*\*) use female DIN Locking 8 pin interface.

The scheme on the left shows the pin distribution of a DIN Locking 8 pin interface. The electrical connection of this interface is as follows:

Pin 1: Analogue Input 1  
Pin 2: Analogue Input 2  
Pin 3: Analogue Input 3  
Pin 4: Analogue Input 4  
Pin 5: Analogue Input 5  
Pin 6: Analogue Input 6  
Pin 7: +20VDC (Max.: 50 mA)  
Pin 8: 0 V (Common)

## Digital Control



For digital control, the Apollo Plus dimmer uses a DMX-512 protocol (1990). This DMX-512 control signal is supplied to the dimmer from a male 5-pole XLR plug and goes out from a female socket of similar type to supply the next unit. Both socket and plug are placed at the front side of the dimmer.

The output DMX-512 signal is amplified by an integrated amplifier (repeater) in the APOLLO Plus dimmer, allowing the user to connect an endless number of dimmers to the same control signal, without signal loss.

The scheme on the left shows the pin distribution of a 5-pole male XLR input plug with pin numbering. The electrical connection of this plug is listed below:

Pin 1:	Common (0V)
Pin 2:	Negative signal (data -)
Pin 3:	Positive signal (data +)
Pin 4:	Not used
Pin 5:	Not used

The scheme on the left shows the pin distribution of a 5-pole female XLR input socket with pin numbering. The electrical connection of this plug is listed below:

Pin 1:	Common (0V)
Pin 2:	Negative signal (data -)
Pin 3:	Positive signal (data +)
Pin 4:	Not used
Pin 5:	Not used

## Start Address for DMX 512



Indication of incorrect or missing DMX Signal



Indication of DMX start address 001



Indication "Program Set"



Indication "Start Address 001"

All Apollo Plus Dimmers have the default DMX start address "001". To modify the default start address, please follow the instructions below:

**Note:** This chapter briefly describes how to select the DMX start address. The complete description of this is included in the chapter "Digital Input DMX".

Once the dimmer supply is turned-on, the dimmer performs diagnostic tests. The display then indicates the condition of the DMX input signal.

There are two possible signal conditions ("d FLd" or "d 001"), as shown in the left schemes.

Regardless of the indication displayed, please do the following:

- Press the "MENU" button as many times as necessary until the Program Set ("PS") is displayed.
- Press the "ENTER" button once.
- Press the "MENU" button four times. The display should then indicate 001 as Start Address ("s.a.001").
- Press the buttons "+" and "-" to select the start address. The digits on the display are blinking to indicate that the address is changing. By pressing one of these buttons continuously, the digits change faster.



Indication of DMX start address 139



Indication of DMX start address 139 with serial signal termination

- Press the “ENTER” button to save the selected start address. The digits on the display stop blinking indicating the new start address.
- Keep pressed the “MENU” button, until the selected start address is displayed.

For example, if you choose 139 to be the new start address, then the dimmer display is similar to the picture on the left.

- Set the switch “DMX TERMINATION” in the desired position depending on whether you want the serial DMX signal to be terminated (switch at ON position), or not terminated but continued to another dimmer (switch at OFF position).

In case you select DMX TERMINATION ON, then the point (.) appears after the last address digit, indicating your choice.

Now the dimmer is set up for DMX Signal operation in the selected start address.

## On Board Control Panel

The Dimmer adjustment can also be realized from the on-board control panel (this is available in some models of Apollo Plus). This panel contains 6 channel sliders (12 for the 7\*\*C models) and 1 master slider for the dimmer stand-alone operation. By using this panel, there is no need for an external control desk.

In this case, set the dimming level of the 6 channel sliders and the master level control that you want.

**Note:** The sliders control the output dimmer level, if not programmed to perform another operation (the programming of the slider operation of APOLLO Plus Dimmers is described in a following chapter).



## Operation Description of Apollo Plus

### Introduction

Besides of the lighting control, the APOLLO Plus dimmers also provide other more advanced functions that can be programmed at the beginning or during operation.

These advanced functions include the self diagnostic tests at the beginning of the dimmer's operation, the continuous monitoring of the supply voltage and the operating temperature during the dimmer's operation, as well as the power unit management depending on the operating temperature.

### Getting started- Self Diagnostic Tests



Indication of display microcontroller check



Indication that the display has no errors (test 1 pass)



Indication of Power section microcontroller check



Indication that the power has no errors (test 2 pass)



Malfunction of the power section microcontroller

When the user turns the power of an Apollo Plus dimmer on, then the integrated microcontroller performs some self diagnostic control tests. The results of the tests automatically determine the way the dimmer operates next, in order to best serve the user needs for lighting control, and at the same time to protect the circuits in case of an error.

The user can monitor the reports of all diagnostic results on the dimmer display.

#### 1) Display microcontroller check.

The first diagnostic test regards the display microcontroller. The code number of this test is "1". The number of the test appears on the left side of the display, as shown in the left picture.

The user is informed that the diagnostic test was completed without errors with the display indication shown in the left picture.

In case an error has occurred, the dimmer automatically deactivates the four display buttons.

This takes place in order to protect the dimmer operation and to prevent the user from giving a wrong command from the four buttons while there is no appropriate display notification.

In this case, the user can still operate all dimmer inputs based on the programming that took place before the error occurred. This can be done until the device is repaired.

#### 2) Power section microcontroller check.

The second diagnostic test regards the microcontroller of the power section. The code number of this test is "2". The number of the test appears on the left side of the display, as shown in the left picture.

The user is informed that the diagnostic test was completed without errors with the display indication shown in the left picture.

In case of any malfunction, the dimmer automatically deactivates all operating modes, and displays the indication of an error, as shown in the left picture.

The user must then immediately disconnect the dimmer supply and have the device repaired.



Memory check indication



Indication that the memory has no errors (test 3 pass)



Memory section error



Indication of new DMX start address selection



Indication of incorrect DMX start address



Indication of Cooling fan check



Indication that the fan is working properly (test 4 pass)



Indication of an error of the integrated cooling fan

### 3) Memory Check

The third diagnostic test regards the dimmer memory. The code number of this test is “3”. The number of the test appears on the left side of the display, as shown in the left picture.

The dimmer memory is used to save all operating information and settings specified by the user.

The user is informed that the diagnostic test was completed without errors with the display indication shown in the left picture.

In case of any malfunction, the dimmer automatically deactivates all operating modes and displays the indication shown in the left picture.

In this case, the dimmer does not have a DMX start address (because of memory error), and, therefore, cannot operate properly. For this reason and after a fourth test is completed, the following procedure takes place:

- A message appears on the display asking you to select a new DMX address, as indicated in the left picture. The digits are flashing.
- The user should then enter the new start address using the buttons “-” and “+”.
- Finally, to confirm the selection of the new DMX start address, the user should press the “ENTER” button.

If you press the button “ENTER” without selecting a new address, then the default DMX start address “001” is set.

Once the above procedure takes place, you can operate the dimmer. The dimmer is controlled from all inputs, but no user settings are saved in memory.

It is recommended that the user does not operate the dimmer without settings and that he/she should have it repaired as soon as possible.

Please notice that if you do not select a new DMX start address within 15 seconds, the dimmer automatically deactivates the DMX input and shows the indication of an incorrect DMX start address, as shown in the left picture.

### 4) Cooling Fan check

The fourth and last diagnostic test concerns the cooling fan of the dimmer. The code number of this test is “4”. The number of the test appears on the left side of the display, as shown in the left picture.

The user is informed that the diagnostic test was completed without errors with the display indication shown in the left picture.

In case of any malfunction, the dimmer automatically deactivates all operating modes, and displays the indication shown in the left picture.

The cooling fan is deactivated to protect the dimmer’s driver circuit. It is recommended that the user should have the dimmer repaired as soon as possible.

## Supply Voltage Control



Indication of leaking supply power (power failure)



Indication of Power-Down situation



Indication of high supply voltage

## Operating Temperature Control, Power Management

The monitoring of the level of the supply voltage together with the monitoring of the operating temperature of the dimmer (described in the next section), are two of the most sophisticated features of the APOLLO Plus series.

The monitoring of the level of the supply voltage which takes place 250 times per second is useful for protecting not only the dimmer circuits but also the connected loads. A short description of this control method is presented below.

If the supply voltage drops under 150 V~ (in all three phases), the dimmer stops operating, it eliminates all output signals and informs the user about the leaking supply voltage with the indication shown in the left picture.

The dimmer remains in this condition until the voltage level rises over 170 V~, where the dimmer operation is normal.

In case of further decrease of the supply voltage below 120 V~, the dimmer shuts down all internal circuits and microcontrollers, except the ones that control the display. The user is informed about this “**Power Down**” situation with the display indication shown in the left picture.

When the voltage level is less than 100 V~, the display is turned off and the dimmer is about to shutdown because of the low voltage supply.

In case that the supply voltage is not cut off, then the dimmer remains in this condition until the supply voltage rises again above 170 V~. At this voltage level, the dimmer automatically returns in the normal operating mode.

In case that the supply voltage rises over 250 V~, the dimmer again stops operating by setting all outputs to zero, and informs the user about the high supply voltage with the indication shown in the left picture.

The dimmer enters the normal operating mode when the supply voltage falls below 240 V~.

The control of the operating temperature is divided in two functional parts.

The first part regards the speed variation of the cooling fan depending on the temperature of the power circuits.

This speed control is useful in order to achieve the appropriate cooling of the power circuits of the dimmer with the minimum noise of the ventilator. Under normal operating conditions the ventilator operates at the maximum speed for a limited time period.

The second part regards the control of the output power in case of overheating caused by problematic operation of the ventilator.

For this reason the Apollo Plus dimmers monitor continuously the operating temperature and in case of overheating the dimmers automatically decrease their average total output power. The more the temperature increases, the more the level of the output power decreases. Eventually, because of the very low levels of output power, the temperature stops rising. This procedure prevents the thermal damage of the dimmer circuits.

It is obvious that in such a case, the user cannot get the maximum dimmer power to the outputs.

## Operating Menus of the Apollo Plus Dimmers

### Moving through the Menus

This chapter presents the different ways of moving through the command menu of the APOLLO Plus dimmers. This presentation will help the user to understand easier the following chapters that analytically describe the dimmer commands.

At the front side of the dimmer there are four buttons which help the user to apply all commands and program the dimmer operation.

The “MENU” button is the main button that helps you to move within the different menus. The command or setting you are programming is always indicated on the dimmer’s display.

The dimmer commands and settings are found in 3 different menus:

- **Basic menu:** For selecting the Chasers, the lighting scenes, the loop operation and the output level of each channel.
- **Programming menu:** For programming all dimmer operating modes.
- **Settings menu:** For selecting special settings for some operating modes and activating or deactivating some other operations of the dimmer.

By pressing the “MENU” button (when the DMX start address is displayed) you enter the first command of the basic menu, and every time you press this button you move to the following command.

The complete list of the dimmer commands and settings and their order within the different menus is presented in the flow chart on the following page.

Notice that when you press the “MENU” button you are always in the **basic** menu.

If you want to exit the **basic** menu, then:

- Press the “MENU” button for approximately 1 sec (the display shows the DMX start address).

To enter the **programming** menu:

- By using the “MENU” button, go to the command “**Program Set**” and press the “ENTER” button.

In case you have activated the password entry option, you are asked to enter your password. If you deselect the above option, then you can immediately enter the programming menu. If you activate the password option and you enter a wrong password, then the dimmer denies entry to the programming menu and returns to the basic menu.

You can also move within this menu by using the “MENU” button. If you want to return to the **basic** menu, then:

- Press the “MENU” button for approximately 1 sec until the display indicates the first basic menu command.

To enter the **settings** menu, then:

- By using the “MENU” button, go to the command “**Settings**” and press the “ENTER” button.

You can also move within this menu by using the “MENU” button. If you want to return to the **programming** menu, then:

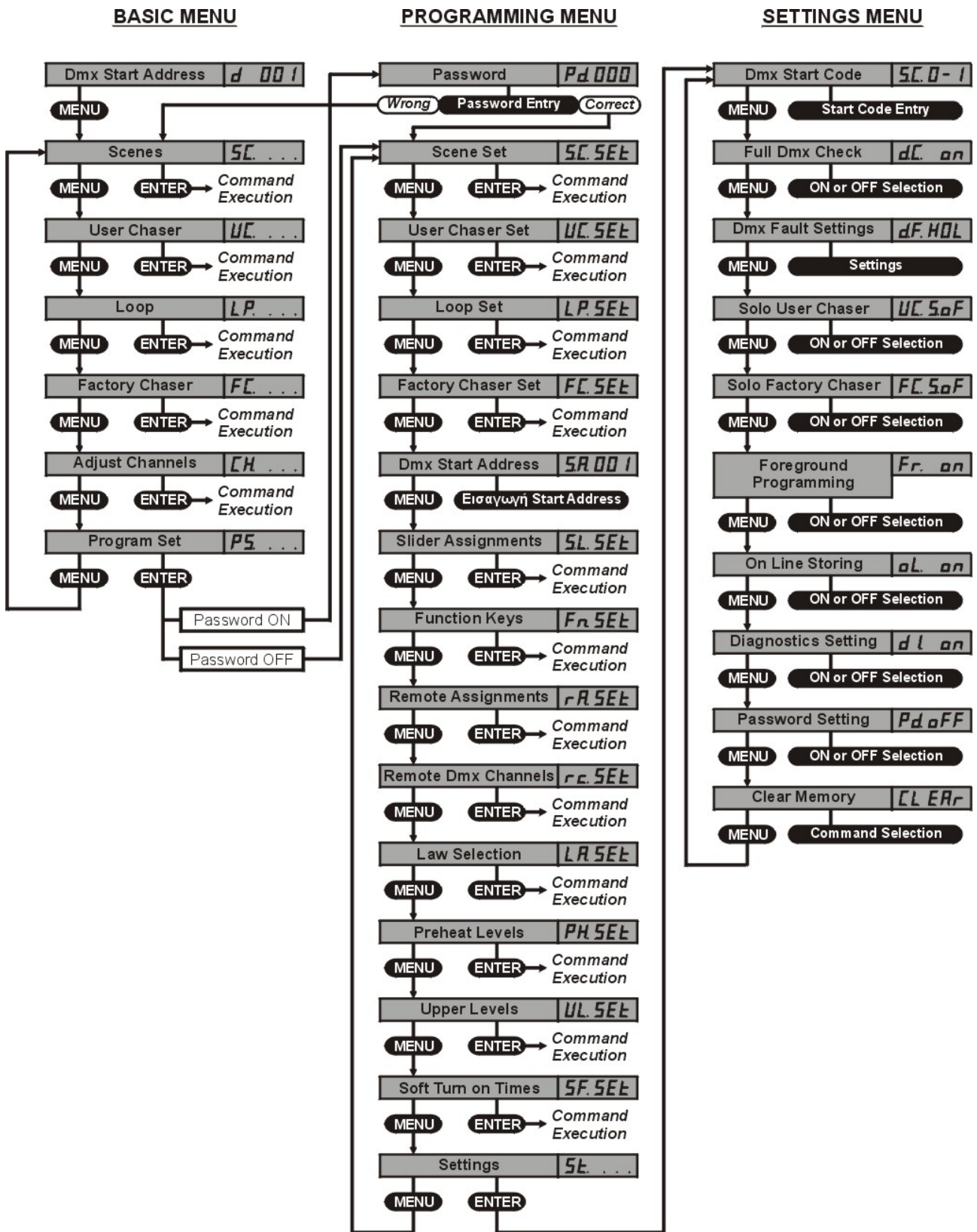
- Press the “MENU” button for approximately 1 sec until the display indicates the first programming menu command.

In all cases, you can exit each menu by pressing the “MENU” button until the DMX start address is displayed.

- ! If you are in the last menu (Settings menu), then press the “MENU” button for approximately 3 seconds.

☞ Notice that in case that the “MENU” or “ENTER” buttons are not pressed within approximately 15 seconds, then the dimmer automatically exits the menus.

## LIST OF ALL MENU COMMANDS



**Note:** The “S” models of Apollo Plus dimmers do not provide the Programming Menu command “Slider Assignment”, because they don’t have sliders (on-board panel).

## Digital Input DMX

### Introduction

As indicated in the Chapter “Dimmer Adjustment”, the APOLLO Plus series are supported with digital input DMX-512 (1990).

The dimmer with DMX-512 digital input allows the user to select individual channels from amongst the 512 contained on the DMX-512 signal. To select channels individually, the user should use the command “Dmx Start Address” in the Programming Menu. The selection procedure is described in detail in the chapter “Dimmer Adjustment / Start Address for DMX-512”.

### Connection and Termination of DMX-512 Signal

The DMX-512 signal that usually derives from a lighting console is connected to the dimmer plug DMX IN. In case that many dimmers are used, the plug DMX OUT of the first dimmer should be connected to the plug DMX IN of the second dimmer and so on.

The total number of dimmers in a multi dimmer application could be infinite, as every Apollo Plus dimmer has its own DMX-512 signal repeater.

In case that one or more dimmers in a multi dimmer application are out of order, then the input circuit of those defective dimmers is automatically disconnected from the serial signal to avoid unnecessary power loss.

For proper DMX-512 signal operation, every serial connection should be terminated. For this reason, at the front side of the Apollo Plus dimmer there is a DMX TERM switch that activates the termination circuit.

The termination circuit should be activated (switch “ON”) in the following cases:

1. When using a single Apollo Plus dimmer.
2. When the dimmer is the last to receive DMX-512 signal in a multi dimmer application and its output DMX OUT is not used.

**Attention: When the signal termination circuit is activated (switch at the “ON” position), then the dimmer output DMX OUT is deactivated.**

**Attention: Do not forget to activate the signal termination circuit when the dimmer operates in one of the above cases.**

### DMX Start Code (Start Address)

The DMX-512 protocol also contains the Start Code. This is a number from 0 to 255, which is added to the serial signal from the signal processing device (usually a lighting console) and is used by the signal detecting device (in this case the dimmer) for accepting or denying the 512 signal information.

The user can program the Start Code he/she wants, so that the Apollo Plus dimmers are compatible to every serial DMX-512 signal source.

☞ Every Apollo Plus dimmer is by default programmed to operate with serial DMX-512 signals that have Start Code 0 or 1.



Start Code indication



Indication of incorrect or missing DMX Signal

### Full Dmx Check



Indication of activating the Full Dmx Check



Indication of deactivating the Full Dmx Check

To change the DMX Start Code:

- Go to the settings menu command “**Dmx Start Code**”. The display should show the default figures, as presented in the left picture (unless you have changed the start code).
- Use the buttons “-” and “+” to select the desired number. While you make changes, the 3 digits on the right side of the display are flashing, indicating that a change is being made.
- Press the ‘ENTER’ button once. The digits stop flashing, indicating that a new Start Code has been selected.
- Press the “MENU” button until the display shows the Dmx Start Address, in order to exit all menus.

**Note:** Once you press the “ENTER” button, press the “MENU” button once, instead of constantly, to select the next menu command.

**Attention:** Do not ever change the Start Code unless you know the Start Code of the source (usually a lighting console). The dimmers are programmed by default to operate with all lighting consoles available in the market. In case the Start Code is wrong, the dimmer does not accept the information of the connected serial signal and displays the indication that the DMX signal is either missing or incorrect, as shown in the left picture.

One of the most common problems in a big multi dimmer application, because of the large number of connector plugs and the huge serial cable length, is the DMX-512 signal loss.

To avoid this problem, the Apollo Plus dimmers are supported with sophisticated software called Full Dmx Check to control the DMX-512 signal. This also eliminates unexpected problems, such as the random flashing of loads etc.

The Full Dmx Check option is activated by default, but the user can deactivate it at any time.

To deactivate the Full Dmx Check:

- Go to the settings menu command “**Full Dmx Check**”. The display should indicate the default figures (unless you have made changes), as shown in the left picture.
- Press the button “-”. The display indication ON turns to OFF, as shown in the left picture, indicating that the option “Full Dmx Check” is deactivated.
- Press the “MENU” button until the display shows the Dmx Start Address, in order to exit all menus.

**Note:** Once you press the “ENTER” button, press the “MENU” button once, instead of constantly, to select the next menu command.

☞ In case you want to reactivate the “Full Dmx Check” control option repeat the above procedure, but instead of the button “-” press the button “+”.

## Leaking DMX-512 Signal Operation



Indication of Hold option  
(setting by default)



Blackout option indication



Indication of Scene 24 option

Another feature of the Apollo Plus series is the capability of programming the dimmer operation in cases of DMX-512 signal loss.

In such cases there are three options:

1. **Hold:** Saves the last DMX-512 information (value).
2. **Blackout:** Resets all DMX-512 data.
3. **Scene 24:** Resets all Dmx-512 data and activates scene 24 (in this case the user should have previously programmed the scene 24).

To program one of the above three options, do the following:

- Go to the settings menu command "**Dmx Default Settings**". The display should indicate the default figures (unless you have made changes), as shown in the left picture.
- Use the buttons "-" and "+" to select the desired option. All three options are presented in the left pictures.
- Press the "MENU" button until the display shows the Dmx Start Address, in order to exit all menus.

**Note:** Press the "MENU" button once, instead of constantly, to select the next menu command.



# Scenes

## Introduction

The Apollo Plus dimmers allow the user to create and store 24 lighting scenes, of 6 channels each.

The lighting scenes can be activated either one at a time or all together, depending on your needs. Each scene has 6 lighting levels (one for each dimmer channel), and also a 0 – 99 seconds fade-in and fade-out time delay. The activation of each scene can be performed in two ways:

- **Dimming mode:** The user can control the level of each scene from 0 to 100% with all the intermediate levels.
- **Switching mode:** The level of each scene can be either 0% or 100%.

Apollo Plus dimmers also allow the user to permanently or temporarily set the fade-in and fade-out time and to adjust the channel level during the operation of a specific scene (on line editing).

The above together with the lighting scene programming are described in this section.

## Scene Programming



Indication of scene programming



Indication of programming scene 01



Indication of adjusting the level of channel 01



Indication of the active channel level as a percentage (%)

A lighting scene should be programmed first and then activated (the dimmer is provided to you without any pre-programmed scenes). The scene programming is performed in the following way:

- Go to the settings menu command “**Scene Set**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you are now programming the scene 1, as shown in the left picture.

The number of the scene is indicated by the last 2 digits on the display. The flashing of the letter F indicates that the “-” and “+” buttons can be used to set the fade-in and fade-out time delay.

- Press one of the “-” or “+” buttons. The last two digits on the display together with the letter F begin to flash. The two digits after the letter F express the fade-in and fade-out time in seconds (0-99). This flashing lasts approximately 1.5 seconds and then the display shows again the number of the current scene.
- While the 3 digits are flashing, press the button “-” or “+” to set the fade-in and fade-out time delay (instantly or continuously for quick setting).

Once you set the fade-in and fade-out time:

- Press the “MENU” button once. The display should now be similar to the left picture.

This indication informs you that you are programming the level of channel 01 in the current scene.

The c.01 digits indicate that you can program the channel number 1.

Press the button “-” or “+”. The last three digits d.00 which are flashing on the display, indicate the channel level expressed as a percentage.

- This flashing lasts approximately 1.5 seconds and then the display shows again the number of the current channel.
- While the 3 digits are flashing, press the button “-” or “+” to adjust the channel level (instantly or continuously for quick setting).



Indication of 100% (full) level of the active channel

## Scene Activation



Indication of scene activation



Indication of scene 01 activation in dimming mode



Indication of 100% (full) output level of the active scene

When the current channel level is 100% (full), then the display should be similar to the left picture.

Once you program the channel:

- Press the “ENTER” button once. The desired light level is saved and the display indicates the next channel.

As soon as you program all 6 channels of the current scene:

- Press the “MENU” button once. The display shows again the number of the programmed current scene, while the letter F is flashing.
- Press the “ENTER” button once. The fade-in-and fade-out time for this scene is saved, and the display now shows the next scene that needs to be programmed using the above procedure.

Once you program, the desired lighting scenes:

- Press the “MENU” button until the display shows the Dmx Start Address.

During the programming of the scenes, you can check the lighting levels of each channel from the led monitor above the display and from the loads connected to the dimmer (this takes place as long as the option “Foreground Programming” is activated. The description of this option is presented in a following chapter).

To activate one of the programmed lighting scenes:

- Go to the basic menu command “**Scene**”. The display should be similar to the left picture.
- Press the button “ENTER” once.

The display now indicates that you can activate the lighting scene 1, as shown in the left picture.

The 3<sup>rd</sup> and 4<sup>th</sup> digits on the display indicate the number of the scene which is going to be activated. The letter *d* that is flashing indicates that the “-” and “+” buttons can be used to set the output level of this scene from 0-100% in **Dimming Mode**.

- Press one of the “-” or “+” buttons. The two digits left of the letter *d* together with the letter *d* begin to flash. The two digits indicate the lighting level of the scene, expressed as a percentage. This flashing lasts approximately 1.5 seconds and then the display hows again the number of the current scene (which is not flashing).
- While the 3 digits are flashing, press the button “-” or “+” to adjust the scene output level (instantly or continuously for quick setting).

When the current scene output level is 100% (full), then the display should be similar to the left picture.

To operate the scene in **Switching Mode**:

- Press the “MENU” button once.



Indication of zero output level of the active scene in switching mode



Indication of maximum output level of the active scene in switching mode



Indication of fade-in and fade-out time adjustment of scene 01

Notice that the letter *d* is replaced by a dash (-). When the dash is on the upper side of the display, the output scene level is 100%; when it is at the lower side of the display, the output level is 0%; and when it is in the middle, the output level is between 1% and 99%.

To adjust the output level of the active scene in **Switching Mode**, use the buttons “-” and “+”.

- Press the button “-”. The output level of the active scene is minimized (0%).
- Press the button “+”. The output level of the active scene is maximized (100%).

If you want to change the fade-in and fade-out time:

- Press the button “MENU” once.

Notice that now the dash (-) is replaced by the letter F, as shown in the left picture. This indicates that the fade-in and fade-out time can be adjusted by using the buttons “-” and “+”.

- Press one of the “-” or “+” buttons. The two digits left of the letter F together with the letter F begin to flash. The two digits indicate the fade-in and fade-out time of the active scene in seconds. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active scene (which is not flashing).
- While the 3 digits are flashing, press the button “-” or “+” to adjust the fade-in and fade-out time of the scene (instantly or continuously for quick setting).

The change of the fade-in and fade-out time can be saved permanently or temporarily, depending on whether the “On Line Saving” option is activated or not (the detailed description of this option is presented in a following chapter).

Regardless of the operating mode (Dimming Mode, Switching Mode or fade-in and fade-out time adjustment), in order to adjust another scene:

- Press the “ENTER” button once.

You can now activate the next scene. If you want to move to another scene press the button “ENTER” again (instantly or continuously for quick setting), until you see the number of the scene that you want.

The lighting scenes you have programmed remain in the adjusted output lighting levels (until you make changes) even if you exit the “Scenes” command of the basic menu and enter another command (of the same menu).

# User Chaser

## Introduction

The number of User Chasers that can be programmed is 12. Every Chaser has its own programmable speed and can be programmed from 2 to 31 steps, with the capability of setting up to 6 light levels for each step (one for every dimmer channel). For the 7XXX Apollo Plus models there is the capability of setting up to 12 light levels.

There are 72 steps available in total (144 for Apollo Plus 7\*\*\*), which can be assigned in any way to the 12 Chasers.

The User Chasers can be activated one at a time or all together at the same time, depending on the user needs. The activation of each Chaser can be achieved in two ways:

- **Dimming mode:** The user can control the level of each User Chaser from 0 to 100% with all the intermediate levels.
- **Switching mode:** The level of each User Chaser can be either 0% or 100%.

Apollo Plus also allows the user to permanently or temporarily set the speed and adjust the level of the 6 channels, while the User Chaser is operating (on line editing).

Once a User Chaser is activated, the user can select the “Solo User Chaser” option to automatically deactivate every other Chaser that was active, so that only one Chaser works at a time.

All of the above together with the User Chaser programming are described below in more detail.

## User Chaser Programming



Indication of User Chaser programming



Indication of programming User Chaser 01



Indication of programming step 01

A User Chaser should first be programmed and then activated (the dimmer is provided to you with blank User Chasers). The User Chaser programming is performed in the following way:

- Go to the programming menu command “**User Chaser Set**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates, as shown in the left picture, that you are now programming the User Chaser 1.

The number of the current User Chaser is indicated by the last 2 digits on the display, while the flashing of the letter *r* indicates that the “-” and “+” buttons can be used to set the Chaser speed.

- Press one of the “-” or “+” buttons. The two digits on the right of the display together with the letter *r* begin to flash. The two digits after the letter *r* indicate the speed. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active User Chaser.
- While the 3 digits are flashing, press the button “-” or “+” to set the Chaser rate (instantly or continuously for quick setting). The values of the speed range from 1 (slow) to 16 (fast).

Once you set the Chaser speed:

- Press the “MENU” button once. The display should be similar to the left picture.

This indication shows that you are programming the step 1 of the current User Chaser.



Indication of adjusting channel 01



Indication of 100% (Full) output level of the active channel



Indication of programming User Chaser 01

To change a step:

- Press the button “ENTER” (instantly or continuously for quick setting) until the number of the step that you want is displayed.

Once the number of the step is displayed:

- Press the “MENU” button once. The display should be similar to the left picture.

This indication shows that you are programming the level of channel 1 for the current step.

The number of the channel is indicated by the two digits on the right of the display, while the letter *d* which is flashing indicates that the “-” and “+” buttons can be used to set the desired lighting level.

- Press one of the “-” or “+” buttons. The three digits *d.00* on the display begin to flash. The two numbers indicate the active scene output level expressed as a percentage. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active channel.
- While the 3 digits are flashing, press the button “-” or “+” to adjust the lighting level (instantly or continuously for quick setting).

When the active channel output level is 100% (full), then the display should be similar to the left picture.

Once you adjust the level of channel 01:

- Press the “ENTER” button once. The desired light level is saved and the display indicates the next active channel.

Once you program all 6 channels of the particular step:

- Press the “MENU” button twice. The display shows again the number of the current step.
- Press the “ENTER” button once to move to the next step.
- Press the “MENU” button so that you program the channels of another step.

Once you program the last desired step:

- Press the “MENU” button once. The display shows that you are programming the current User Chaser (assuming that the current Chaser is 1, then the display should be similar to the left picture).
- Press the “ENTER” button to save all the data you have programmed for the current User Chaser.

After saving the programming data of one chaser, the display automatically shows the next User Chaser that you can program following the same procedure. Otherwise, you can exit the programming menu by pressing the “MENU” button until the DMX Start address is displayed.

## Inserting a New Step



Indication of programming step 02



Indication of inserting a new step

## Deleting a Step



Indication of step 02 programming



Indication of deleting a step

There are 2 steps in every User Chaser by default. If you need more steps while programming, follow the procedure below:

Suppose you are programming a User Chaser with 2 steps and you want to add a new one:

- Press the “MENU” button until the step programming indication appears on the display.
- Press the “ENTER” button to find the last step, that is step number 2. The display should be similar to the left picture.
- While pressing the button “+”, also press the “ENTER” button.

The figures on the display begin to flash, indicating that a new step can be inserted. The display indication is similar to the left picture for about 3-4 seconds.

The new step automatically receives the number 3, which is now displayed.

Note that you can also insert a new step between two steps. For example, suppose you have a User Chaser with 5 steps and you want to insert a new step between the 4<sup>th</sup> and 5<sup>th</sup> steps.

Following the procedure described above, go to the 4<sup>th</sup> step of this User Chaser and insert the new step.

To delete a step from a User Chaser, use the following procedure:

Suppose you are programming a User Chaser with 5 steps and you want to erase the second step:

- Press the “MENU” button until the step programming indication appears on the display.
- Press the “ENTER” button to find the second step (step number 2). The display should be similar to the left picture.
- While pressing the button “-”, press the “ENTER” button.

The display begins to flash indicating that the step can be erased. The display indication is similar to the left picture for about 3-4 seconds.

Note that if a User Chaser has only 2 steps, you cannot use the step-delete command.

## User Chaser Activation



Indication of User Chaser activation



Indication of activating User Chaser 01 in dimming mode



Indication of 100% (full) output level of the active User Chaser



Indication of zero output level of the active User Chaser in switching mode



Indication of maximum output level of the active User Chaser in switching mode



Indication of adjusting the rate of User Chaser 01

To activate a programmed User Chaser:

- Go to the basic menu command "**User Chaser**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that the User Chaser 1 can be activated, as shown in the left picture.

The 3<sup>rd</sup> and 4<sup>th</sup> digits on the display indicate the number of the User Chaser that is going to be activated, while the flashing of the letter *d* indicates that the "-" and "+" buttons can be used to set the output level of this Chaser from 0-100% in **Dimming Mode**.

- Press one of the "-" or "+" buttons. The two digits on the display, left of the letter *d* together with the letter *d* begin to flash. The two digits indicate the output level of the active User Chaser, expressed as a percentage. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active User Chaser (which is not flashing).
- While the 3 digits are flashing, press the button "-" or "+" to adjust the User Chaser output level (instantly or continuously for quick setting).

When the active User Chaser output level is 100% (full), then the display should be similar to the left picture.

To operate this User Chaser in **Switching Mode**:

- Press the "MENU" button once.

Notice that the letter *d* is replaced by a dash (-). When the dash is at the upper side of the display, the output level of the User Chaser is 100%; when the dash is at the lower side, the output level is 0%; and when the dash is in the middle, the output level is between 1% and 99%.

To adjust the output level of the active User Chaser in **Switching Mode**, use the buttons "-" and "+".

- Press the button "-". The output level of the active User Chaser is minimized (0%).
- Press the button "+". The output level of the active User Chaser is maximized (100%).

To change the rate:

- Press the "MENU" button once.

Notice that the dash (-) is replaced by the letter *r*, as shown in the picture, which indicates that the buttons "-" and "+" can be used to adjust the rate.

- Press one of the "-" or "+" buttons. The two digits left of the letter *r* together with the letter *r* begin to flash. The two digits indicate the rate of the active User Chaser. The flashing lasts approximately 1.5 seconds and then the display shows again the active User Chaser (which is not flashing).
- While the 3 digits are flashing, press the button "-" or "+" to adjust the rate of this Chaser (instantly or continuously for quick setting).

The change of the rate of the User Chaser can be permanently or temporarily saved, depending on whether the “On Line Saving” option has been activated or not (the detailed description of this option is presented in a following chapter).

Regardless of the operating mode, (Dimming Mode, Switching Mode or rate adjustment), in order to adjust another User Chaser:

- Press the “ENTER” button once.

You can now program the next User Chaser. If you want to move to another User Chaser, press the button “ENTER” again (instantly or continuously for quick setting), until you find the number of the User Chaser you want.

☞ The User Chasers that have already been programmed remain in the adjusted output lighting level (until you change the level), even if you exit the “User Chaser” command of the basic menu and enter another command (of the same menu).

## Solo User Chaser



Indication of “Solo User Chaser” deactivation



Indication of “Solo User Chaser” activation

Another very useful option of the Apollo Plus dimmer is the “Solo User Chaser” option. This option allows you to activate a User Chaser and to automatically deactivate every other Chaser that was previously active, so that only one Chaser operates at a time.

To activate this option:

- Go to the settings menu command “**Solo User Chaser**”. The display should be similar to the left picture.
- Press the button “+” (pressing the button “+” activates this option, while pressing the button “-” deactivates it).

The display is now similar to the left picture, indicating that the “Solo User Chaser” is activated.

- Press the “ENTER” button once to save this setting.
- Press the “MENU” button until the display shows the Dmx Start Address.

The activation and operation of the User Chasers when the option “Solo User Chaser” is activated, presents the following characteristics:

1. The rate is the same for all User Chasers (Solo User Chaser Rate). More particularly, when you program the speed of one User Chaser, you are actually programming the Solo User Chaser Rate for all User Chasers. In other words, all User Chasers run at the same speed.
2. When adjusting the lighting level in Dimming Mode, you are actually adjusting the lighting level of all User Chasers.
3. You can select another User Chaser only under the Switching Mode.

☞ We suggest that you program some User Chasers and practice when the “Solo User Chaser” option is activated, to gain a better understanding.



# Loop

## Introduction

The Loop command allows the user to change the lighting scenes by simply pressing a button.

You can program up to 60 steps with pre-programmed scenes in any sequence, but you can also program one single scene into multiple steps.

By pressing only one button, as it will be described below, you activate one step after another. This activates consequently the corresponding scene. When you reach the last step and press the same button again, step 1 is activated. Every time you press the button the steps are activated sequentially. This procedure may last for as long as you want.

## Loop Programming



Loop programming indication



Indication of programming Step 01



Empty step indication



Indication of scene 01 saved in the current step.

For correct Loop programming, you should first adjust all lighting scenes, as described above.

Once you set the lighting scenes:

- Go to the programming menu command “**Loop Set**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you can now program step 1, as shown in the left picture.

The number of the step is indicated by the two last digits on the display, while the letter *s* which is flashing indicates that the “-” and “+” buttons can be used to select the corresponding scene for this step.

- Press one of the “-” or “+” buttons. The display changes to the one of the left picture. The two last digits on the display indicate the number of the scene which is saved in the current step. When a double dash (- -) appears instead of a number, this means that no scene is saved in the current step (“empty step”). The flashing lasts approximately 1.5 seconds and then the display shows again the number of the step that you have programmed.
- While the number of the scene is displayed, press the buttons “-” or “+” (instantly or continuously for quick setting) to select the scene in which the current step will be saved. For example, if the step is empty and you press the button “+”, the display indicates the scene 1, as shown in the left picture.

Once you select the scene you want and the display shows the current step programming indication:

- Press the “ENTER” button for final saving of all programmed data for the current scene.

After the saving procedure, the display automatically shows the next step that you can program.

When you complete the step programming, press the “MENU” button to exit the programming menu until the DMX Start address is displayed.

## Loop Activation



Loop activation indication



Loop activation indication.  
Current step: 01 deactivated



Loop activation indication.  
Current step: 01 activated

To activate the programmed Loop steps:

- Go to the basic menu command “**Loop**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you can now activate step 1, as shown in the left picture.

The dash (-) at the lower right side of the display indicates that the current step 1 is still not activated.

To activate this step:

- Press the “ENTER” button once.

Notice that the dash (-) has now moved to the upper right side of the display, as shown in the left picture, informing you that the current step is active.

You can have this operating condition for as long as you want before changing the lighting scene as follows:

- Press the button “+” once.

The current step indication changes and shows the next step, which is step 2. At the same time, the lighting scene of step 1 changes to the lighting scene of step 2. In case that the scenes saved in the steps have fade-in and fade-out time delay, then the change of the lighting will occur after the time delays.

To deactivate the current step for a time period and then reactivate it:

- Press the “ENTER” button, the dash (-) moves to the lower side of the display, and the step is deactivated.

Or:

- Press the “ENTER” again, the dash (-) moves to the upper side of the display, and the step is reactivated.

☞ You should also know that by using the buttons “-” and “+” you can select the next or previous activated steps.

## Factory Chasers

### Introduction

In addition to the 12 User Chasers that can be programmed by the user, the Apollo Plus dimmers have 12 more Chasers pre-programmed by the producer. These are called Factory Chasers.

Each Factory Chaser has independently programmable rate. The Factory Chasers can be activated either one at a time or all together at the same time, depending on the user needs. Each factory Chaser can be activated in two ways:

- **Dimming mode:** The user can control the level of each Factory chaser from 0 to 100% with all the intermediate levels.
- **Switching mode:** The level of each Factory Chaser can be either 0% or 100%.

Apollo Plus also allows the user to permanently or temporarily set the speed, while the Factory Chaser is operating (on line editing).

By selecting the “Solo Factory Chaser” option and activating a Factory Chaser, the user can automatically deactivate every other Chaser that was active so that only one Chaser operates at a time.

The above together with the Factory Chaser programming are described in the following sections.

## Factory Chaser Speed Adjustment



Indication of Factory Chaser rate programming



Indication of programming the rate of Factory Chaser 01

It is not necessary to program the speed of a Factory Chaser. All 12 Factory Chasers have the default rate 8.

To set another rate to some or to all Factory Chasers:

- Go to the programming menu command "**Factory Chaser Set**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that you can now program the rate of Factory Chaser 1, as shown in the left picture.

The number of the Factory Chaser is indicated by the last two digits on the display, while the letter *r* which is flashing indicates that the "-" and "+" buttons can be used to set the speed.

- Press one of the "-" or "+" buttons. The two last digits on the display, together with the letter *r* begin to flash. The two digits after the letter *r* indicate the speed. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active Factory Chaser.
- While the 3 digits are flashing, press the button "-" or "+" to set the Chaser speed (instantly or continuously for quick setting). The values of the rate range from 1 (slow) to 16 (fast).
- Press the "ENTER" button once to save the new rate.

After the saving, the display indicates that you can set the speed of the next Factory Chaser.

After setting all new rates:

- Press the "MENU" button until the display shows the Dmx Start Address and exit the programming menu.

## Factory Chaser Activation



Indication of Factory Chaser activation



Indication of activating Factory Chaser 01 in Dimming Mode

To activate one or more Factory Chasers:

- Go to the basic menu command "**Factory Chaser**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display shows that you can activate the Factory Chaser 1, as shown in the left picture.

The 3<sup>rd</sup> and 4<sup>th</sup> digits on the display show the number of the Factory Chaser that is going to be activated, while the letter *d* which is flashing indicates that the "-" and "+" buttons can be used to set the output level of this Chaser from 0-100% in **Dimming Mode**.

- Press one of the "-" or "+" buttons. The two display digits left of the letter *d* together with the letter *d* begin to flash. The two digits indicate the output level of the active Factory Chaser expressed as a percentage. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active Factory Chaser (which is not flashing).
- While the 3 digits are flashing, press the button "-" or "+" to adjust the output level of the Factory Chaser (instantly or continuously for quick setting).



Indication of full output level (100%) of the active Factory Chaser



Indication of zero output level of the active Factory Chaser in switching mode



Indication of maximum output level the active Factory Chaser in switching mode



Indication of adjusting the rate of Factory Chaser 01

When the active Factory Chaser output level is 100% (full), then the display should be similar to the left picture.

To operate this Factory Chaser in **Switching Mode**:

- Press the “MENU” button once.

Notice that the letter *d* is replaced by a dash (-). When the dash is at the upper side of the display, the output level of the Factory Chaser is 100%; when the dash is at the lower side, the output level is 0%; and when the dash is in the middle, the output level is between 1% and 99%.

To adjust the output level of the active Factory Chaser in **Switching Mode**, use the buttons “-” and “+”.

- Press the button “-”. The output level of the active Factory Chaser is minimized (0%).
- Press the button “+”. The output level of the active Factory Chaser is maximized (100%).

To change the speed:

- Press the “MENU” button once.

Notice that the dash (-) is replaced by the letter *r*, as shown in the left picture, which indicates that the speed can be adjusted by using the buttons “-” and “+”.

- Press one of the “-” or “+” buttons. The two digits left of the letter *r* together with the letter *r* begin to flash. The two digits indicate the speed of the active Factory Chaser. This flashing lasts approximately 1.5 seconds and then the display shows again the active Factory Chaser indication (which is not flashing).
- While the 3 digits are flashing, press the button “-” or “+” to adjust the rate of this Chaser (instantly or continuously for quick setting).

The change of the rate of the Factory Chaser can be saved permanently or temporarily, depending on whether the “On Line Saving” option has been activated or not (the detailed description of this option is presented in a following chapter).

Regardless of the operating mode, (Dimming Mode, Switching Mode or speed adjustment) in order to adjust another Factory Chaser:

- Press the “ENTER” button once.

You can now program the next Factory Chaser. If you want to move to another Chaser, press the button “ENTER” again (instantly or continuously for quick setting), until you find the Factory Chaser you want.

The Factory Chasers you have programmed remain in the adjusted output lighting level (until you change the level), even if you exit the “Factory Chaser” command of the basic menu and enter another command (of the same menu).

## Solo Factory Chaser



Indication of "Solo Factory Chaser" deactivation



Indication of "Solo Factory Chaser" activation

The Factory Chasers, similarly to the User Chasers, have a Solo option called "Solo Factory Chaser". By using this option you can activate a Factory Chaser and automatically deactivate every other Chaser that was previously active, so that only one Chaser operates at a time.

To activate this option:

- Go to the settings menu command "**Solo Factory Chaser**". The display should be similar to the left picture.
- Press the button "+" (by pressing the button "+" the option is activated, while by pressing the button "-" it is deactivated).

The display is now similar to the left picture indicating the "Solo Factory Chaser" activation.

- Press the "ENTER" button once to save this setting.
- Press the "MENU" button until the display shows the Dmx Start Address and exit the settings menu.

The activation and operation of the Factory Chasers when the option "Solo Factory Chaser" is activated, present the following characteristics:

1. The rate is the same for all Factory Chasers (Solo Factory Chaser Rate). More particularly, when you program the speed of one Factory Chaser, you are actually programming the Solo Factory Chaser Rate for all Factory Chasers. In other words, all Factory Chasers run at the same speed.
2. When adjusting the lighting level in Dimming Mode, you are actually adjusting the lighting level of all Factory Chasers.
3. You can select another Factory Chaser only under the Switching Mode.

☞ We suggest that you program some Factory Chasers and practice when the "Solo Factory Chaser" option is activated, to gain a better understanding.

The 12 Factory Chasers and their default settings are presented in the tables on the following page. The first table refers to the 6- Channel models of dimmers and the second one to the 3- Channel models of dimmers.

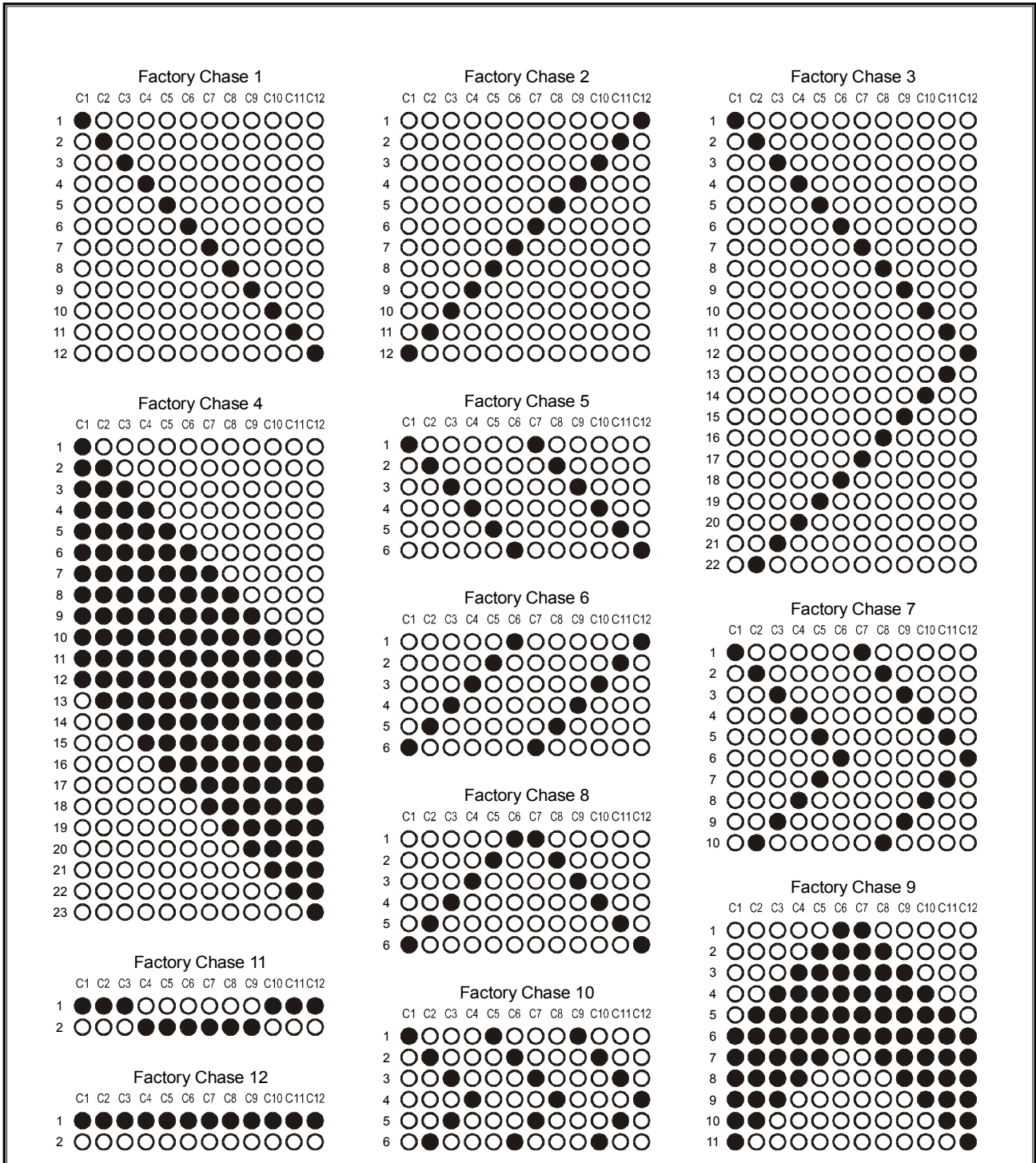
**Table of the 12 Factory Chasers (6- Channel Models)**

<p align="center"><b>Factory Chaser 1</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ○ ○ ○ ○</p> <p>2 ○ ● ○ ○ ○ ○</p> <p>3 ○ ○ ● ○ ○ ○</p> <p>4 ○ ○ ○ ● ○ ○</p> <p>5 ○ ○ ○ ○ ● ○</p> <p>6 ○ ○ ○ ○ ○ ●</p>	<p align="center"><b>Factory Chaser 2</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ○ ○ ○ ○ ○ ●</p> <p>2 ○ ○ ○ ○ ● ○</p> <p>3 ○ ○ ○ ● ○ ○</p> <p>4 ○ ○ ● ○ ○ ○</p> <p>5 ○ ● ○ ○ ○ ○</p> <p>6 ● ○ ○ ○ ○ ○</p>	<p align="center"><b>Factory Chaser 3</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ○ ○ ○ ○</p> <p>2 ○ ● ○ ○ ○ ○</p> <p>3 ○ ○ ● ○ ○ ○</p> <p>4 ○ ○ ○ ● ○ ○</p> <p>5 ○ ○ ○ ○ ● ○</p> <p>6 ○ ○ ○ ○ ○ ●</p> <p>7 ○ ○ ○ ○ ● ○</p> <p>8 ○ ○ ○ ● ○ ○</p> <p>9 ○ ○ ● ○ ○ ○</p> <p>10 ○ ● ○ ○ ○ ○</p>	<p align="center"><b>Factory Chaser 4</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ○ ○ ○ ○</p> <p>2 ● ● ○ ○ ○ ○</p> <p>3 ● ● ● ○ ○ ○</p> <p>4 ● ● ● ● ○ ○</p> <p>5 ● ● ● ● ● ○</p> <p>6 ● ● ● ● ● ●</p> <p>7 ○ ● ● ● ● ●</p> <p>8 ○ ○ ● ● ● ●</p> <p>9 ○ ○ ○ ● ● ●</p> <p>10 ○ ○ ○ ○ ● ●</p> <p>11 ○ ○ ○ ○ ○ ●</p>
<p align="center"><b>Factory Chaser 5</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ○ ● ○ ○</p> <p>2 ○ ● ○ ○ ● ○</p> <p>3 ○ ○ ● ○ ○ ●</p>	<p align="center"><b>Factory Chaser 9</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ○ ○ ● ● ○ ○</p> <p>2 ○ ● ● ● ● ○</p> <p>3 ● ● ● ● ● ●</p> <p>4 ● ● ○ ○ ● ●</p> <p>5 ● ○ ○ ○ ○ ●</p>	<p align="center"><b>Factory Chaser 6</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ○ ○ ● ○ ○ ●</p> <p>2 ○ ● ○ ○ ● ○</p> <p>3 ● ○ ○ ● ○ ○</p>	<p align="center"><b>Factory Chaser 11</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ● ● ○ ○ ○</p> <p>2 ○ ○ ○ ● ● ●</p>
<p align="center"><b>Factory Chaser 7</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ○ ● ○ ○</p> <p>2 ○ ● ○ ○ ● ○</p> <p>3 ○ ○ ● ○ ○ ●</p> <p>4 ○ ● ○ ○ ● ○</p>	<p align="center"><b>Factory Chaser 8</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ○ ○ ● ● ○ ○</p> <p>2 ○ ● ○ ○ ● ○</p> <p>3 ● ○ ○ ○ ○ ●</p>	<p align="center"><b>Factory Chaser 10</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ○ ● ○ ● ○</p> <p>2 ○ ● ○ ● ○ ●</p>	<p align="center"><b>Factory Chaser 12</b></p> <p>C1 C2 C3 C4 C5 C6</p> <p>1 ● ● ● ● ● ●</p> <p>2 ○ ○ ○ ○ ○ ○</p>

**Table of the 12 Factory Chasers (3- Channel Models)**

<p align="center"><b>Factory Chaser 1</b></p> <p>C1 C2 C3</p> <p>1 ● ○ ○</p> <p>2 ○ ● ○</p> <p>3 ○ ○ ●</p>	<p align="center"><b>Factory Chaser 2</b></p> <p>C1 C2 C3</p> <p>1 ○ ○ ●</p> <p>2 ○ ● ○</p> <p>3 ● ○ ○</p>	<p align="center"><b>Factory Chaser 3</b></p> <p>C1 C2 C3</p> <p>1 ● ○ ○</p> <p>2 ○ ● ○</p> <p>3 ○ ○ ●</p> <p>4 ○ ● ○</p>	<p align="center"><b>Factory Chaser 4</b></p> <p>C1 C2 C3</p> <p>1 ● ○ ○</p> <p>2 ● ● ○</p> <p>3 ● ● ●</p> <p>4 ○ ● ●</p> <p>5 ○ ○ ●</p>	<p align="center"><b>Factory Chaser 5</b></p> <p>C1 C2 C3</p> <p>1 ○ ○ ●</p> <p>2 ○ ● ●</p> <p>3 ● ● ●</p> <p>4 ● ● ○</p> <p>5 ● ○ ○</p>	<p align="center"><b>Factory Chaser 6</b></p> <p>C1 C2 C3</p> <p>1 ○ ● ●</p> <p>2 ● ○ ●</p> <p>3 ● ● ○</p>
<p align="center"><b>Factory Chaser 7</b></p> <p>C1 C2 C3</p> <p>1 ● ● ○</p> <p>2 ● ○ ●</p> <p>3 ○ ● ●</p>	<p align="center"><b>Factory Chaser 8</b></p> <p>C1 C2 C3</p> <p>1 ● ○ ○</p> <p>2 ○ ○ ○</p> <p>3 ○ ● ○</p> <p>4 ○ ○ ○</p> <p>5 ○ ○ ●</p> <p>6 ○ ○ ○</p>	<p align="center"><b>Factory Chaser 9</b></p> <p>C1 C2 C3</p> <p>1 ○ ○ ●</p> <p>2 ○ ○ ○</p> <p>3 ○ ● ○</p> <p>4 ○ ○ ○</p> <p>5 ● ○ ○</p> <p>6 ○ ○ ○</p>	<p align="center"><b>Factory Chaser 10</b></p> <p>C1 C2 C3</p> <p>1 ● ○ ○</p> <p>2 ● ● ●</p> <p>3 ○ ● ○</p> <p>4 ● ● ●</p> <p>5 ○ ○ ●</p> <p>6 ● ● ●</p>	<p align="center"><b>Factory Chaser 11</b></p> <p>C1 C2 C3</p> <p>1 ○ ○ ●</p> <p>2 ● ● ●</p> <p>3 ○ ● ○</p> <p>4 ● ● ●</p> <p>5 ● ○ ○</p> <p>6 ● ● ●</p>	<p align="center"><b>Factory Chaser 12</b></p> <p>C1 C2 C3</p> <p>1 ● ● ●</p> <p>2 ○ ○ ○</p>

## Table of the 12 Factory Chasers (12- Channel Models)



# Channel Adjustment

## Introduction

You can use the basic menu to adjust each of the six dimmer channels separately. This is a very useful option especially for the “S” – models of dimmers that do not have slider panel, but also for the “C” models of dimmers when their sliders are programmed to perform other operations.

This adjustment can be done in two ways:

- **Dimming mode:** The user can control the level of each Channel from 0 to 100% with all the intermediate levels.
- **Switching mode:** The level of each Channel can be either 0% or 100%.

## Channel Settings



Channel setting indication



Indication of adjusting Channel 01 in Dimming Mode



Indication of 100% (full) output level of the active



Indication of zero output level of the active channel in switching mode



Indication of maximum output level of the active channel in switching mode

To set up one or more dimmer channels:

- Go to the basic menu command “**Adjust Channels**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you can adjust channel 1, as shown in the left picture.

The 3<sup>rd</sup> and 4<sup>th</sup> digits on the display indicate the number of the dimmer channel that is going to be activated, while the letter *d* which is flashing indicates that the “-” and “+” buttons can be used to set the output level of this channel from 0-100% in **Dimming Mode**.

- Press one of the “-” or “+” buttons. The two digits left of the letter *d* together with the letter *d* begin to flash. The two digits indicate the output level of the active channel expressed as a percentage. This flashing lasts approximately 1.5 seconds and then the display shows again the number of the active channel (which is not flashing).
- While the 3 digits are flashing, press the button “-” or “+” to adjust the output level of this channel (instantly or continuously for quick setting).

When the channel output level is 100% (full), then the display should be similar to the left picture.

To operate this channel in **Switching Mode**:

- Press the “MENU” button once.

Note that the letter *d* is replaced by a dash (-). When the dash is at the upper side of the display, the output channel level is 100%; when the dash is at the lower side, the output level is 0%; and when the dash is in the middle, the output level is between 1% and 99%.

To adjust the output level of the active channel in **Switching Mode**, use the buttons “-” and “+”.

- Press the button “-”. The output level of the active channel is minimized (0%).
- Press the button “+”. The output level of the active channel is maximized (100 %%).

Regardless of the operating mode, (Dimming Mode, Switching Mode or fade-in and fade-out time adjustment), in order to adjust another channel:

- Press the “ENTER” button once.



You can now adjust the next channel. If you want to select another channel, press the button "ENTER" again (instantly or continuously for quick setting), until you find the channel you want.

☞ The channels remain at the adjusted output lighting level (until you change the level), even if you exit the "Adjust Channels" command of the basic menu and enter another command (of the same menu).

## Slider Assignments

### Introduction

Besides of setting the channels, the sliders (only in the "C" models of dimmers) can be programmed to perform a number of different operations.

More specifically, the sliders can be used for:

1. Adjusting the output level of a selected User Chaser.
2. Setting the rate of a selected User Chaser.
3. Adjusting the output level of a selected Factory Chaser.
4. Setting the speed of a selected Factory Chaser.
5. Adjusting the output level of a selected Lighting Scene.

☞ The main advantage of programming the slider operation is that you can immediately program some User Chasers, Factory Chasers or Scenes without moving across the command menus.

### Slider Programming



Indication that the command "Slider Assignments" is active



Indication of programming Slider 01



Indication of a non-programmed slider



Indication of adjusting the output level of User Chaser

To change the default operation of the sliders:

- Go to the programming menu command "**Slider Assignments**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that you can program slider 1, as shown in the left picture.

The last two digits on the display indicate the number of the current slider to be programmed.

To program another slider:

- Press the "ENTER" button as many times as necessary until the number of the slider that you want is displayed.

Suppose you want to program slider 1.

- Press the "MENU" button once.

The display indicates the operation that has been assigned to the current slider or provides the information that the slider has not been programmed, as shown in the left picture.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the first operation that can be programmed. This is the output level adjustment of a User Chaser.

- Press the "MENU" button again.



Indication of setting the rate of User Chaser 01



Indication of adjusting the output level of Factory Chaser 01



Indication of setting the rate of Factory Chaser 01



Indication of output level adjustment of Scene 01



Slider 01 programming indication

The display, as shown in the left picture, indicates the second operation that can be programmed. This is the speed setting of a User Chaser.

- Press the “MENU” button again.

The display, as shown in the left picture, indicates the third operation that can be programmed. This is the output level adjustment of a Factory Chaser.

- Press the “MENU” button again.

The display, as shown in the left picture, indicates the fourth operation that can be programmed. This is the speed setting of a Factory Chaser.

- Press the “MENU” button again.

The display, as shown in the left picture, indicates the fifth operation that can be programmed. This is the output level adjustment of a lighting Scene.

It is obvious that every time you press the “MENU” button, you can select the slider operation you want.

The two digits flashing on the right side of the display indicate the number of the User Chaser or Factory Chaser or the Lighting Scene, (depending on the chosen operation) that is going to be selected by using the slider.

For example, suppose that you want the slider to adjust the output level of Factory Chaser 4.

Find the above operation by pressing the “MENU” button:

- Press the button “+” as many times as necessary, until the last two flashing digits on the display show the number 04.
- Press the “ENTER” button to save this setting.

Once you save the setting, the digits on the display stop flashing, indicating the end of this programming procedure.

To program the operation of another slider:

- Press the “MENU” button for approximately 2 seconds until the display shows the slider programming indication, as shown in the left picture.

Following the above procedure, select another slider and the operation you want to program.

Once you complete the programming:

- Press the “MENU” button until the display shows the Dmx Start Address and exit the programming menu.

You can notice that when you move the slider 1 upwards, then the output level of Factory Chaser 4 increases according to your programming.

# Function keys

## Introduction

You can program the buttons “-”, “+” and “ENTER” in such a way so that when you press them, these will activate a User or Factory Chaser or a Lighting Scene.

This is possible only when you have exited all command menus (the display shows the DMX start address).

You can assign the following functions to the buttons:

1. Activation of a selected User Chaser.
2. Activation of a selected Factory Chaser.
3. Activation of a selected Scene.

☞ The main advantage of programming the Function Key operation is that you can immediately program User Chasers, Factory Chasers or Scenes without moving through the command menus.

## Function Key Programming



Indication that the “Function Keys” command is active



Indication of programming Function Key 01 (Button “-”)



Indication of non-programmed Function Key



Indication of User Chaser 01 activation



Indication of Factory Chaser 01 activation

To assign a selected operation to the Function keys:

- Go to the programming menu command “**Function Keys**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you can program Function Key 1, as shown in left picture.

The last two digits on the display indicate the number of the current Function Key to be programmed.

The function keys and buttons are:

**Function Key 1:** Button “-”.

**Function Key 2:** Button “+”.

**Function Key 3:** Button “ENTER”.

To program the operation of another Function Key:

- Press the “ENTER” button as many times as necessary, until the number of the Function Key that you want is displayed.

To program the Function Key 1:

- Press the “MENU” button once.

The display indicates the operation that has been assigned to the current Function key or provides the information that the Function Key has not been programmed, as shown in the left picture.

- Press the “MENU” button again.

The display, as shown in the left picture, indicates the first operation that can be programmed. This is the activation of a User Chaser.

- Press the “MENU” button again.

The display, as shown in the left picture, indicates the second operation that can be programmed. This is the activation of a Factory Chaser.

- Press the “MENU” button again.



Indication of Lighting Scene 01 activation



Indication of programming Function Key 01 (Button "-")

## Remote assignments

### Introduction

The display, as shown in the left picture, indicates the third operation that can be programmed. This is the activation of a Lighting Scene.

It is obvious that every time you press the "MENU" button you can select the Function Key operation that you want.

The two digits flashing on the right side of the display indicate the number of the current User Chaser or Factory Chaser or Lighting Scene, (depending on the selected operation) which is activated by the Function Key.

For example, suppose that you want to program a Function Key so as to activate the Factory Chaser 5.

Find this operation by pressing the "MENU" button:

- Press the button "+" as many times as necessary, until the last two digits flashing on the display, show 05.
- Press the "ENTER" button to save this setting.

After saving the setting, the digits stop flashing indicating the end of this procedure.

To program the operation of another Function Key:

- Press the "MENU" button for approximately 2 seconds until the display shows the Function Key programming indication, as shown in the left picture.

Following the above procedure, select another Function Key and the operation you want to program.

Once you complete the programming:

- Press the "MENU" button until the display shows the Dmx Start Address and exit the programming menu.

You can notice that when you press the Function Key 1 (Button "-"), then the output level of the Factory Chaser 5 is activated (at 100%); and when you press it again, it is deactivated (0%).

You can program up to 8 Remote Commands (Lighting Combinations), activated from 8 DMX-512 channels, for:

1. Adjusting the output level of a selected User Chaser.
2. Setting the rate of a selected User Chaser.
3. Adjusting the output level of a selected Factory Chaser.
4. Setting the rate of a selected Factory Chaser.
5. Adjusting the output level of a selected Lighting Scene.

☞ The advantage of programming the Remote Command operation is that you can use a lighting console, which can be placed away from the dimmer, to activate or program the settings of some User Chasers, Factory Chasers or Lighting Scenes.

**Attention:** In order to make the 8 Remote Commands valid, you should assign 8 DMX-512 channels to activate the commands. To do so, use the "Remote Dmx Command" which is described in the following section.

## Remote Command Programming



Indication that the "Remote Assignments" command is active



Indication of programming Remote Command 01



Indication of non-programmed Remote Command



Indication of adjusting the output level of User Chaser 01



Indication of setting the Rate of User Chaser 01



Indication of adjusting the output level of Factory Chaser 01



Indication of setting the rate of Factory Chaser 01



Indication of adjusting the output level of the Lighting Scene 01

In order to program the operation of a Remote Command:

- Go to the programming menu command "**Remote Assignments**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that you can program the Remote Command 1, as shown in the left picture.

The last two digits on the display indicate the number of the current Remote Command to be programmed.

To program another Remote Command:

- Press the "ENTER" button as many times as necessary, until the number of the channel that you want is displayed.

Suppose you want to program the Remote Command 1.

- Press the "MENU" button once.

The display shows the operation programmed to the Remote Command or it provides the information that no Remote Command is programmed, as shown in the left picture.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the first operation that can be programmed. This is the output level adjustment of a User Chaser.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the second operation that can be programmed. This is the rate setting of a User Chaser.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the third operation that can be programmed. This is the output level adjustment of a Factory Chaser.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the fourth operation that can be programmed. This is the rate setting of a Factory Chaser.

- Press the "MENU" button again.

The display, as shown in the left picture, indicates the fifth operation that can be programmed. This is the output level adjustment of a Lighting Scene.

It is obvious that every time you press the "MENU" button, you can select the Remote Command operation you want.

The two digits flashing on the right side of the display indicate the number of the current User Chaser or Factory Chaser or Lighting Scene, (depending on the selected operation) controlled by this Remote Command.

For example, suppose that the Remote Command operation you want is the output level adjustment of Factory Chaser 6.

Find this operation by pressing the "MENU" button:

- Press the button "+" as many times as necessary, until the last two digits flashing on the display show 06.
- Press the "ENTER" button to save this setting.

After saving this setting, the digits stop flashing indicating the end of this procedure.

In order to program the operation of another Remote Command:

- Press the "MENU" button for approximately 2 seconds until the display shows the Remote Command programming indication, as shown in the left picture.

Following the above procedure, select another Remote Command and the operation you want.

After completing the programming, you should assign the 8 DMX channels that will activate the 8 Remote Commands. To do so, use the "Remote Dmx Command" described in the following chapter.

If you have already assigned the 8 DMX channels:

- Press the "MENU" button until the display shows the Dmx Start Address and exit the programming menu.

You can notice that when you increase the output of the assigned channel from your console, the output level of Factory Chaser 6 also increases.



Indication of programming Remote Command 01

# Remote Dmx Command

## Introduction

### Assigning the DMX Channels



Indication that the "Remote Dmx Command" is active



Indication of assigning DMX channel to Remote Command 01



Indication of unassigned DMX channel

With this command you can select and assign the 8 DMX channels that will activate the corresponding 8 Remote Commands.

The DMX channels can be any of the 512 of the DMX-512 signal, they can be independent from each other (e.g. 15, 38, 122, 254, 370, 420, 485 and 505), and they do not have to be numbered in a sequence.

You can also assign the same DMX channel to many Remote Commands.

To assign a DMX channel to a Remote Command:

- Go to the programming menu command "**Remote Dmx Command**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that the DMX channel can be assigned to the Remote Command 1, as shown in the left picture.

The last two digits on the display indicate the number of the Remote Command to which the DMX channel is assigned.

To assign the DMX channel to another Remote Command:

- Press the "ENTER" button as many times as necessary, until the number of the Remote Command you want is displayed.

Suppose that you are programming the Remote Command 1.

- Press the button "+" once.

The display changes, as shown in the left picture, and indicates that no DMX channel (**channel off**) has been assigned to the current Remote Command (if you have not assigned a DMX channel earlier). The three last digits on the display begin to flash, indicating that the "-" and "+" buttons can be used to assign the DMX channel you want to the Remote Command.

The flashing lasts approximately 1.5 seconds.

- While the 3 digits are flashing, press the button "-" or "+" to select the number of the DMX channel (instantly or continuously for quick setting) which is now displayed.

Once the channel number you want appears:

- Press the "ENTER" button to save this setting.

After saving this setting, the dimmer automatically shows the Remote Command 2.

If you have previously assigned a DMX channel to a Remote Command and want to cancel this assignment:

- While the 3 digits are flashing, press the button "-" until the display shows the indication that no DMX channel is assigned.
- Press the "ENTER" button to save this change.

**Attention: Do not forget to cancel any DMX channels that you have assigned to the Remote Commands, when you are not using them.**

Now you can activate all the programmed operations of the Remote Commands from your console.

# Law Selection

## Introduction

Using this command you can select the output signal waveform of every dimmer channel, depending on the connected output load type.

The supported waveforms of the Apollo Plus dimmers are:

1. **Linear:** The output voltage is analogue to the slider setting of the remote console or the integrated dimmer control panel (C-model dimmers).
2. **Incandescent:** Linear increase of the light level of incandescent lamps.
3. **Fluorescent:** For fluorescent lamps (rapid start).
4. **Switched:** For controlling not dimmable loads (ON/ OFF operation).

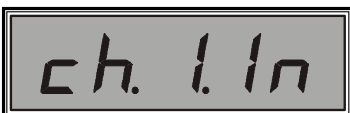
## Waveform selection



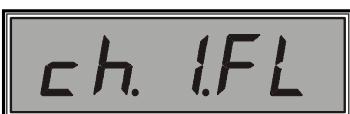
Indication that the “Law Selection” command is active



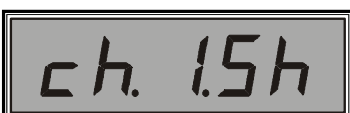
Indication of Linear waveform for dimmer channel1



Indication of Incandescent waveform for dimmer channel1



Indication of Fluorescent waveform for dimmer channel1



Indication of Switched waveform for dimmer channel1

To select the waveform of an output channel:

- Go to the programming menu command “**Law Selection**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that you can select the output waveform for Channel 1, as shown in the left picture.

The 3<sup>rd</sup> digit on the display shows the number of the dimmer channel (for Apollo Plus models 7XXX the number of the dimmer channel is shown by the 2<sup>nd</sup> and 3<sup>rd</sup> digits), while the two digits on the right show the selected output waveform (**Linear**).

To select the waveform of another dimmer channel:

- Press the “ENTER” button as many times as necessary, until the number of the channel you want is displayed.

Suppose you want to change the output waveform of channel 1.

- Press the button “+”. The waveform indication changes and begins to flash. The display shows the indication **Incandescent**.
- Press the button “+” again. The waveform indication changes and continues to flash. The display now shows the indication **Fluorescent**.
- Press the button “+” once again. The waveform indication changes and continues to flash. The display now shows the indication **Switched**.

Once you select the output signal waveform you want:

- Press the “ENTER” button to save this setting.

The display stops flashing indicating that the waveform is saved, and at the same time it shows the next dimmer channel for which you can select waveform.

When you complete this procedure and want to exit the programming menu:

- Press the “MENU” button until the display shows the Dmx Start Address.



## Fluorescent Lamp Operation

When you want to connect fluorescent lamps to the dimmer take into consideration the following:

- ☞ Always use 'Rapid Start' fluorescent lamps (because their lighting level is controlled by such dimmers).
- ☞ Select the Fluorescent waveform (when Rapid Start fluorescent lamps are connected).
- ☞ Use the command "Preheat levels" to adjust the minimum lighting level where the fluorescent light is constant.
- ☞ If you want the dimmer to control simple fluorescent lights (the lighting level of which is not controlled by such dimmers), select the Switched waveform.
- ☞ In every channel where fluorescent lamps are connected (Rapid Start or simple), also connect a resistive load of 50W.

## Preheat levels Introduction

This command is used to keep the filaments of some spotlights warm. By this way, the filament is not stressed during the power ignition, since it is warm and the ignition current is small.

The dimmer, after programming this command, keeps a constant voltage level in the channel output (called Preheat Level). The voltage level can be selected by you and it is used to keep the lamp filaments warm.

**Attention: You cannot use the "Preheat Level" command if the waveforms Fluorescent or Switched have been selected for the current channel.**

You should also know that by using this command you can adjust the minimum lighting level of a channel when fluorescent lamps are connected and the output waveform is set to Fluorescent.

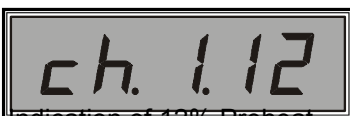
## Preheat Level Setting



Indication that the "Preheat Levels" command is active



Indication of 0% Preheat Level for channel 1



Indication of 12% Preheat Level for channel 1

To set up the appropriate Preheat Level of a channel:

- Go to the programming menu command "**Preheat Levels**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that the Preheat Level for Channel 1 can be selected, as shown in the left picture.

The 3<sup>rd</sup> digit on the display shows the number of the channel (for Apollo Plus Models 7XXX the number of the channel is shown by the 2<sup>nd</sup> and 3<sup>rd</sup> digits), while the two digits on the right show the output level maintained in the dimmer, expressed as a percentage. Now this is 0%.

To select another dimmer channel:

- Press the "ENTER" button as many times as necessary until the number of the channel you want, is displayed.

Suppose you want to change the Preheat Level of channel 1.

- Press the button "+". The percentage indication increases to 1% and begins to flash showing the change. If you keep pressing the button continuously, the indication changes faster.

The maximum preheat level you can set is 50%.

To decrease the percentage:

- Press the "-" button.

## Upper levels

### Introduction

Once you set the Preheat Level you want:

- Press the “ENTER” button to save this setting.

The display stops flashing indicating that the Preheat Level for that channel has been saved and at the same time it shows the next dimmer channel for which you can program the Preheat Level.

When you complete this procedure and want to exit the programming menu:

- Press the “MENU” button until the display shows the Dmx Start Address.

You can set the maximum output channel level to a percentage lower than 100%. For example, in case the supply voltage is over 230V~ and the lamps you use have short average service life, you can program the particular dimmer channel in such a way so as not to exceed 80% of the output level, increasing by this way the service life of the lamp radically.

**Attention: The Upper Level command cannot be used when the Switched waveform has been selected for the current channel.**

### Upper Level Setting



Indication that the “Upper Levels” command is active



Indication of 100% (full) Upper Level for channel 1



Indication of 85% Upper Level for channel 1

To set up the Upper Level of a dimmer channel:

- Go to the programming menu command “**Upper Levels**”. The display should be similar to the left picture.
- Press the “ENTER” button once.

The display indicates that the Upper Level for Channel 1 can be selected, as shown in the left picture.

The 3<sup>rd</sup> display digit indicates the channel number (for the Apollo Plus models 7XXX the channel number is shown by the 2<sup>nd</sup> and 3<sup>rd</sup> digits), while the two digits on the right indicate the current output level of the dimmer expressed as a percentage. Now this is 100% (full).

To select another dimmer channel:

- Press the “ENTER” button as many times as necessary, until the channel number you want is displayed.

Suppose you want to change the Upper Level of channel 1.

- Press the button “-”. The percentage indication decreases by 1% and begins to flash, signifying the change. If you press the button continuously the indication changes faster.

The minimum Upper Level that can be selected is 50%.

To increase the level percentage:

- Press the “+” button.

Once you adjust the desired Upper Level:

- Press the “ENTER” button to save this setting.

## Soft Turn On

### Introduction

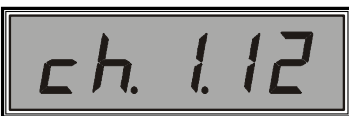
### Soft Turn On Time Setting



Indication that the "Soft Turn On" command is active



Indication of Soft Turn On time 0.0 sec for channel 1



Indication of Soft Turn On time 1.2 sec for channel 1

The display stops flashing, indicating that the setting is saved, and at the same time it shows the next dimmer channel that can be set up.

Once you complete this procedure and want to exit the programming menu:

- Press the "MENU" button until the display shows the Dmx Start Address.

You can program the gradual increase of the dimmer outputs, depending on the Soft Turn On fade time that has been selected.

You can use this setting to protect the lamp filaments from high ignition currents, without consuming power by using the Preheat Levels.

To set up the Soft Turn On Time of a dimmer channel:

- Go to the programming menu command "**Soft Turn on Times**". The display should be similar to the left picture.
- Press the "ENTER" button once.

The display indicates that the fade time for Channel 1 can be selected, as shown in the left picture.

The 3<sup>rd</sup> display digit indicates the number of the current channel (for the Apollo Plus Models 7XXX the number of the current channel is shown by the 2<sup>nd</sup> and 3<sup>rd</sup> digits) while the two digits on the right show the current Soft Turn On Time in 1/10 sec. The time is now set to 0.0 seconds.

To select another dimmer channel:

- Press the "ENTER" button as many times as necessary, until the channel number you want, is displayed.

Suppose that you want to change the Soft Turn On Time of channel 1.

- Press the button "+". The percentage indication changes by 1/10 sec (0.1) and begins to flash, showing the change. If you press the button continuously then the indication changes faster.

The maximum Soft Turn On Time that can be selected is 25/10 sec (2.5 seconds).

To decrease the Soft Turn On Time:

- Press the "-" button.

Once you adjust the Soft Turn On Time:

- Press the "ENTER" button to save this setting.

The display stops flashing indicating that the setting has been saved, and at the same time it shows the next dimmer channel that can be set up.

Once you complete this procedure and want to exit the programming menu:

- Press the "MENU" button until the display shows the Dmx Start Address.

# Foreground Programming

## Introduction

The Apollo Plus dimmers can be programmed in two different ways:

1. **Foreground Programming.**
2. **Background Programming.**

The **Foreground Programming** is active by default and allows the user to monitor the programming on the dimmer display and to also observe the lighting effects.

For example, start programming a blank User Chaser. When you select the first channel of the first step, the indication of this channel on the display begins to flash. During the programming, the particular User Chaser is automatically activated and, consequently, the two steps of this Chaser are switching with each other. Therefore, the selected channel for step 1 begins to flash.

Then you program channel 2 for step 2, and you see the two channels switching with each other.

Try to adjust the speed of this User Chaser. You can notice this change immediately to the switching channels.

☞ The Foreground Programming is very useful as it provides complete understanding of the operation of the User Chaser at the time of the programming.

In the **Background Programming**, the dimmer programming is blind. In other words, the current operation of the dimmer from the DMX input, the sliders and other (User Chaser, Factory Chaser, Loop) that are activated (from the Menu, Slider, Function Keys, Remote) remain active and continue to operate.

☞ The Background Programming allows you to change e.g. the channel levels of a Scene or User Chaser, or to even add a new step in another User Chaser, when these are active and working.

☞ At the same time you can cancel or change the operation of a Slider, Function key or Remote Command, and to generally do any programming you want while the dimmer operates.

This is called "**Programming On The Fly**".

Notice that the dimmer does not activate automatically anything that was not active at the time of the programming, as happens in the case of the Foreground Programming, since this would change the level of its lighting outputs. You can still program anything you want, but without being able to directly monitor the settings or changes you make.

## Selection of the Way of Programming



Indication that the "Foreground Programming" command is activated



Indication that the "Foreground Programming" command is deactivated

To select the way of programming:

- Go to the settings menu command "**Foreground programming**". The display should be similar to the left picture.

The display indicates that the command "Foreground programming" is activated (ON).

- Press the "-" button. The display changes as shown in the left picture.

The new display indication shows that the "Foreground Programming" is deactivated (OFF) which implies that the "**Background Programming**" is now activated.

To select the “Foreground programming” again:

- Press the button “+” once.

Once you complete this procedure and want to exit the settings menu:

- Press the “MENU” button until the display shows the Dmx Start Address.

## On Line Saving

### Introduction

You can also decide whether the changes of the rate of the User or Factory Chasers and their fade-in and fade-out time, which you make from the basic command menu, are going to be temporarily or permanently valid.

Temporary change means that in case you make a change this will be valid until the dimmer stops operating. When the dimmer starts operating again, the default values (set from the factory) are valid.

Permanent change means that any change you make on the settings is saved in the dimmer memory and is valid until you make other changes, regardless of whether the dimmer stops and restarts operating (ON or OFF).

☞ This way of saving is active by default.

### On Line Saving option Selection



Indication that the Permanent “On Line Saving” option is active



Indication of temporary saving

To select the temporary or permanent dimmer saving command:

- Go to the settings menu command “**On Line Saving**”. The display should be similar to the left picture.

The display indicates that the command “On Line Saving” is activated (ON), which means that the permanent saving option is selected.

- Press the “-” button. The display changes as shown in the left picture.

The new display indication shows that the “On Line Saving” command is deactivated (OFF) and that, therefore, the temporary saving option is selected.

To return to the permanent saving option:

- Press the “+” button.

Once you complete this procedure and want to exit the settings menu:

- Press the “MENU” button until the display shows the Dmx Start Address.

## Canceling of Self Diagnostic Tests



Indication that the self diagnostic tests are activated



Indication that the self diagnostic tests are deactivated

## Password Entry Option



Indication that the Password is deactivated



Indication that the Password code is 107

Every time the dimmer starts operating (turn-on the power) the integrated microcontroller performs some self diagnostic control tests, described in the chapter "Operation Description".

You can cancel the self diagnostic control tests and the dimmer will start operating immediately. Our company DOES NOT RECOMMEND that you cancel the self diagnostic tests, because the tests specify the operating condition of the dimmer.

However, if you still want to cancel the tests:

- Go to the settings menu command "**Diagnosics Setting**". The display should be similar to the left picture.

The display indication shows that the self diagnostic tests are activated (ON).

- Press the "-" button. The display changes as shown in the left picture.

The new display indication shows that the self diagnostic tests are deactivated (OFF).

To reactivate the self diagnostics:

- Press the "+" button.

Once you complete this procedure and want to exit the settings menu:

- Press the "MENU" button until the display shows the Dmx Start Address.

In case you want to prevent other people from changing the dimmer settings and adjustments that you have made, you can enter your personal password and have exclusive access to the programming menu.

☞ Once you insert a password, then you are required to enter this code every time you want to enter the programming menu and press the "ENTER" button in the command "Program Set".

To enter a password:

- Go to the settings menu command "**Password Setting**". The display should be similar to the left picture.

The display indicates that no Password is set (Password off).

- Press the button "-" or "+", instantly or continuously for quick setting, to select a number from 1 to 999.

The "oFF" indication on the display, changes to a 3-digit number, which indicates the new password code. The indication flashes showing that the password can now be entered.

Suppose you want to enter the number 107 as your Password. The screen should be similar to the left picture.

Once you select your password:

- Press the "ENTER" button to save the setting.

The display stops flashing indicating that the password has been changed.

**Attention:** In case you decide to enter a Password, make sure you always remember this number. Therefore, keep a note of it in a safe place. In case that you forget your password, contact your local supplier to help you cancel the code.

To cancel or change a Password:

- Press the button “-” or “+”, instantly or continuously for quick setting, until the display shows the Password deactivation indication (this indication appears if you press the button “+” when you see the number 999 on the display, or the button “-” when you see the number 001).
- Press the “ENTER” button to save this setting.

Once you complete this procedure and want to exit the settings menu:

- Press the “MENU” button until the display shows the Dmx Start Address.

## Clear Memory Option



Indication of the “Clear Memory” command

You can erase a part of the dimmer memory in order to make a new programming.

More specifically, by using the “Clear Memory” command you can erase the Lighting Scenes (lighting levels and fade-in and fade-out time delay), the User Chasers (output levels and rates), the Loop option and the Factory Chasers (rates).

The remaining dimmer settings, including the Slider, Function Keys, Remote Command assignments, Preheat Levels, and also the selected output waveforms etc do not change.

To erase part of the dimmer’s memory:

- Go to the settings menu command “**Clear Memory**”. The display should be similar to the left picture.
- Press the “ENTER” button until the display indication “Clear” begins to flash.

During this flashing, part of the memory is being erased, and once the flashing stops you can start the new programming.

## Resetting the Dimmer (Set to Factory Defaults)



Indication of the “Clear Memory” command

To erase the whole dimmer memory and set the dimmer to the default settings, use the “Reset” command.

To set the dimmer to the default settings:

- Go to the settings menu command “**Clear Memory**”. The display should be similar to the left picture.
- Press the “+” button.

The display now shows the indication “Reset”, as shown in the left picture.

- Press the “ENTER” button until the display indication “Reset” disappears from the display.



“Reset” indication

All settings are reset and the dimmer operates at the default values.



Once the Reset command is given, the dimmer restarts operating and the indication of the left picture appears for approximately 1.5 seconds.

### Temperature Indication



"Clear Memory" command indication



Dimmer "Reset" indication



Indication of 42° C in the power circuits

You can monitor the current temperature of the power circuits of an Apollo Plus dimmer on the display.

To monitor the temperature of the power circuits:

- Go to the settings menu command "**Clear Memory**". The display should be similar to the left picture.
- Press the "+" button.

The display presents the indication "Reset", as shown in the left picture.

- Press the "+" button again.

Now the dimmer display shows the temperature of the power circuits, expressed in degrees of Celsius.

For example, if the instant temperature is 42 degrees of Celsius, then the display should be similar to the left picture.

To exit the temperature indication:

- Press the "MENU" button until the display shows the Dmx Start Address.



Technical Specification	Dimmer Model	Description
Channels	APOLLO PLUS 7***-*** *****	12
	APOLLO PLUS 6***-*** *****	6
	APOLLO PLUS 3***-*** *****	3
Minimum Channel Load	APOLLO PLUS 7***-*** *****	46 W (0.2 A @ 230V~)
	APOLLO PLUS 6***-*** *****	46 W (0.2 A @ 230V~)
	APOLLO PLUS 3***-*** *****	115 W (0.5 A @ 230V~)
Maximum Channel Load	APOLLO PLUS 710*-*** *****0	2.300 W (10 A @ 230V~)
	APOLLO PLUS 715*-GBS *****0	3.450 W (15 A @ 230V~)
	APOLLO PLUS 716*-*** *****0	3.680 W (16 A @ 230V~)
	APOLLO PLUS 610*-*** *****0	2.300 W (10 A @ 230V~)
	APOLLO PLUS 615*-GBS *****0	3.450 W (15 A @ 230V~)
	APOLLO PLUS 616*-*** *****0	3.680 W (16 A @ 230V~)
	APOLLO PLUS 625C-*** *****0	5.750 W (25 A @ 230V~)
	APOLLO PLUS 350C-*** *****0	11.500 W (50 A @ 230V~)
	APOLLO PLUS 363C-*** *****0	14.490 W (63 A @ 230V~)
Maximum Total Load	APOLLO PLUS 710*-*** *****0	9.200 W / Phase (40 A @ 230V~)
	APOLLO PLUS 715*-GBS *****0	13.800 W / Phase (60 A @ 230V~)
	APOLLO PLUS 716*-*** *****0	14.490 W / Phase (63 A @ 230V~)
	APOLLO PLUS 610*-*** *****0	4.600 W / Phase (20 A @ 230V~)
	APOLLO PLUS 615*-GBS *****0	6.900 W / Phase (30 A @ 230V~)
	APOLLO PLUS 616*-*** *****0	7.360 W / Phase (32 A @ 230V~)
	APOLLO PLUS 625C-*** *****0	11.500 W / Phase (50 A @ 230V~)
	APOLLO PLUS 350C-*** *****0	
	APOLLO PLUS 363C-*** *****0	14.490 W / Phase (63 A @ 230V~)
Triac Drive	APOLLO PLUS 7***-*** *****0	Hard fired (DC gate voltage)
	APOLLO PLUS 6***-*** *****0	
Thyristor Drive	APOLLO PLUS 3***-*** *****0	
Control Waveform	All Models	Linear, Incandescent, Fluorescent, Switched
Load Types	All Models	Incandescent Lights, Resistive Loads, Inductive Loads, Iron Core Transformers for Low Voltage lamps, Fluorescent Lamps (Rapid Start)
Output Fuse	APOLLO PLUS 610S-*** *****0	10 A /250V~ (5 x 20 mm) slow (time-lag) High Breaking Capacity
	APOLLO PLUS 710S-*** *****0	
	APOLLO PLUS 610C-*** *****0	Miniature Circuit Breaker C10A
	APOLLO PLUS 710C-*** *****0	
	APOLLO PLUS 715S-GBS *****0	16 A /250V~ (6,3 x 32 mm) slow (time-lag) High Breaking Capacity
	APOLLO PLUS 615S-GBS *****0	
	APOLLO PLUS 716S-*** *****0	
	APOLLO PLUS 616S-*** *****0	
	APOLLO PLUS 715C-GBS *****0	Miniature Circuit Breaker C16A
	APOLLO PLUS 615C-GBS *****0	
	APOLLO PLUS 715C-*** *****0	
	APOLLO PLUS 616C-*** *****0	
	APOLLO PLUS 625C-*** *****0	Miniature Circuit Breaker C25A
	APOLLO PLUS 350C-*** *****0	Miniature Circuit Breaker C50A
	APOLLO PLUS 363C-*** *****0	Miniature Circuit Breaker C63A

Technical Specification	Dimmer Model	Description
Output Filter	APOLLO PLUS 7***-*** 05**0	50 µs
	APOLLO PLUS 610*-*** 05**0	
	APOLLO PLUS 616*-*** 05**0	
	APOLLO PLUS 7***-*** 10**0	100 µs
	APOLLO PLUS 6***-*** 10**0	
	APOLLO PLUS 625C-*** 20**0	200 µs
APOLLO PLUS 3**C-*** 20**0		
Output Monitor	APOLLO PLUS ****-*** ****0	1 LED / Channel
Outputs per Channel	APOLLO PLUS 7**S-SCH **1*0	1 Schuko socket
	APOLLO PLUS 6**C-SCH **1*0	
	APOLLO PLUS 6**S-SCH **2*0	2 Schuko sockets
	APOLLO PLUS 7**S-CEE **1*0	1 socket CEE-17 (3x16A)
	APOLLO PLUS 6**C-CEE **1*0	
	APOLLO PLUS 625C-CEE **1*0	
	APOLLO PLUS 3**C-CEE **1*0	1 socket CEE-17 (3x32A)
	APOLLO PLUS 3**C-CEE **1*0	1 socket CEE-17 (3x63A)
	APOLLO PLUS 6**S-CEE **2*0	2 sockets CEE-17 (3x16A)
	APOLLO PLUS 7**S-GBS **1*0	1 socket GB 15A
	APOLLO PLUS 6**C-GBS **1*0	
	APOLLO PLUS 6**S-GBS **2*0	2 sockets GB 15A
	APOLLO PLUS 7**S-FRS **1*0	1 French socket
	APOLLO PLUS 6**C-FRS **1*0	
	APOLLO PLUS 6**S-FRS **2*0	
	APOLLO PLUS 710S-DNS **1*0	1 Danish socket
	APOLLO PLUS 610C-DNS **1*0	
	APOLLO PLUS 610S-DNS **2*0	2 Danish sockets
	APOLLO PLUS 710S-SWS **1*0	1 Swiss socket
	APOLLO PLUS 610C-SWS **1*0	
	APOLLO PLUS 610S-SWS **2*0	2 Swiss sockets
	APOLLO PLUS 7**C-IEC **1*0	1 IEC socket
	APOLLO PLUS 7**S-IEC **2*0	2 IEC sockets
	APOLLO PLUS 610S-IEC **2*0	
	APOLLO PLUS 6**C-IEC **2*0	
	APOLLO PLUS 6**S-IEC **3*0	3 IEC sockets
	APOLLO PLUS 7**C-POC **1*0	1 Power Connector (Power Con)
	APOLLO PLUS 7**S-POC **2*0	2 Power Connectors (Power Con)
	APOLLO PLUS 610S-POC **2*0	
	APOLLO PLUS 6**C-POC **2*0	
	APOLLO PLUS 6**S-POC **3*0	3 Power Connectors (Power Con)
	APOLLO PLUS 7**C-WLD**1*0	1 ST 18/3 (Wieland connector)
	APOLLO PLUS 7**S-WLD **2*0	2 ST 18/3 (Wieland connectors)
	APOLLO PLUS 610S-WLD **2*0	
APOLLO PLUS 6**C-WLD **2*0		
APOLLO PLUS 7**S-WLD **3*0	3 ST 18/3 (Wieland connectors)	
APOLLO PLUS 610S-WLD **3*0		
APOLLO PLUS 6**C-WLD **3*0		
APOLLO PLUS 616S-WLD **4*0	4 ST 18/3 (Wieland connectors)	

Technical Specification	Dimmer Models	Description
Outputs per Channel (Continued)	APOLLO PLUS 7**C-SCP **1*0	2 x 19 pin Socapex plugs (1 for 1-6 ch. and 1 for 7-12 ch.)
	APOLLO PLUS 7**S-SCP **2*0	4 x 19 pin Socapex plugs (2 for 1-6 ch. and 2 for 7-12 ch.)
	APOLLO PLUS 610S-SCP **2*0	2 x 19 pin Socapex plugs
	APOLLO PLUS 6**C-SCP **2*0	
	APOLLO PLUS 616S-SCP **4*0	4 x 19 pin Socapex plugs
	APOLLO PLUS 7**C-HRT **1*0	2 x 16 pin Harting plugs (1 for 1-6 ch. and 1 for 7-12 ch.)
	APOLLO PLUS 7**S-HRT **2*0	4 x 16 pin Harting plugs (2 for 1-6 ch. and 2 for 7-12 ch.)
	APOLLO PLUS 610S-HRT **2*0	2 x 16 pin Harting plugs
	APOLLO PLUS 6**C-HRT **2*0	
	APOLLO PLUS 616S-HRT **4*0	4 x 16 pin Harting plugs
Analogue Control Input	APOLLO PLUS 7***-*** *****	12 Channels 0 - 10VDC
	APOLLO PLUS 6***-*** *****	6 Channels 0 - 10VDC
	APOLLO PLUS 3***-*** *****	3 Channels 0 - 10VDC
Analogue Input Interface	All Models, except APOLLO PLUS 6***-GBS ****0	9 pin D-sub (male)
	APOLLO PLUS 6***-GBS ****0	DIN Locking 8 pin (female)
Analogue Input Impedance	All Models	50 kΩ (min.)
Supply Voltage for Control Panel	All Models	20VDC / 50 mA
Integrated Control Panel	APOLLO PLUS 7**C-*** ****0	12 Channels (Sliders) + Master control
	APOLLO PLUS 6**C-*** ****0	6 Channels (Sliders) + Master control
	APOLLO PLUS 3***-*** *****	3 Channels (Sliders) + Master control
Digital Input	All Models	DMX-512 / 1990
Digital Output	All Models	DMX-512 / 1990 Buffered
Leaking DMX-512 Signal Indication	All Models	LED Display Indication
Programmable Start Code	All Models	From 0 to 254 and 0 - 1 together
Signal Termination Switch	All Models	
Programmable Behaviour by DMX-512 Signal Loss	All Models	Hold, Blackout, Scene 24 Activation
Digital Signal Plugs	All Models	Male 5 pin XLR: Input Female 5 pin XLR: Output
Programmable Lamp Filament Preheat Levels	All Models	Independent for Every Channel [0-50%]
Programmable maximum output level (Upper Level)	All Models	Independent for Every Channel [50%-100%]
Programmable Soft Turn On Delay	All Models	Independent for Every Channel [0-2,5sec]
Slider Assignments	APOLLO PLUS ***C-*** ****0	<u>Assignment Options:</u> Lighting Scenes, User Chaser, User Chaser Rate, Factory Chaser, Factory Chaser Rate.
8 Remote Commands	All Models	
3 Function Keys	All Models	<u>Control Options:</u> Lighting Scenes, User Chaser, Factory Chaser.
24 Lighting Scenes	All Models	With independent programmable fade-in and fade-out delay
12 User Chasers	All Models	With independent programmable output level and speed per channel

Technical Specification	Dimmer Model	Description
12 Factory Chasers	All Models	With independent programmable speed
60 Step Loop	All Models	One scene per Step
Password Code	All Models	Code protected access to the Programming Menu
Self Diagnostic Tests	All Models	Power output microcontroller check, display driver microcontroller check, memory check, cooling fan check
Cooling Fan Speed Control	All Models	Rotating speed control according to operating temperature for silent operation
Output Power Limitation in Case of Overheating	All Models	Automatically decreasing of average output power to keep the operating temperature in safe limits
Installation	APOLLO PLUS 610*-*** **0 APOLLO PLUS 616*-*** **0 Exception for Dimmer Models APOLLO PLUS 610*-*** **30 and APOLLO PLUS 616*-*** **30 which need the wall mounting application set of ELECTRON.	Portable dimmer that can be placed horizontally or vertically and truss mounted with the use of the appropriate hook clamp. The dimmer can be also wall- or 19" rack mounted with the use of the accessories supplied with the dimmer.
	APOLLO PLUS 7**C-*** **0 APOLLO PLUS 625C-*** **0 APOLLO PLUS 350C-*** **0 APOLLO PLUS 363C-*** **0	Portable dimmer that can be placed horizontally or vertically and truss mounted with the use of the appropriate hook clamp. The dimmer can also be 19" rack mounted, but <u>not</u> wall mounted.
Operating Voltage	APOLLO PLUS ****-*** **20 APOLLO PLUS ****-*** **30	400 / 230 V~ 3 / N / PE / 50 Hz (Star Models)
	APOLLO PLUS 6***-*** **50 APOLLO PLUS 6***-*** **60	230 V~ 3 / PE / 50 Hz (Delta Models)
Operating Voltage Limits	All Models	Operation stop <u>over 250V~</u> with automatic restart under 240V~ and below 150V~ with automatic restart over 170V~.
Supply Connection	APOLLO PLUS 710*-*** **20 APOLLO PLUS 610*-*** **20 APOLLO PLUS 616*-*** **20	5 x 10 <sup>□</sup> DIN Rail screw terminals
	APOLLO PLUS 716*-*** **20 APOLLO PLUS 625*-*** **20 APOLLO PLUS 3**C-*** **20	5 x 16 <sup>□</sup> DIN Rail screw terminals
	APOLLO PLUS 610*-*** **30 APOLLO PLUS 616*-*** **30	CEE-17 (5 x 32A)
	APOLLO PLUS 7***-*** **30 APOLLO PLUS 625*-*** **30 APOLLO PLUS 3**C-*** **30	CEE-17 (5 x 63A)
	APOLLO PLUS 610*-*** **50 APOLLO PLUS 616*-*** **50	6 pole Harting Plug (6 x 35A)
	APOLLO PLUS 610*-*** **60 APOLLO PLUS 616*-*** **60	7 x 10 <sup>□</sup> DIN Rail screw terminals
Minimum Power Consumption	APOLLO PLUS 6***-*** **0 APOLLO PLUS 3***-*** **0	10 W / Phase (Without Load)
	APOLLO PLUS 7***-*** **0	15 W / Phase (Without Load)

Technical Specification	Dimmer Types	Description
Maximum Power Consumption under maximum Load	APOLLO PLUS 610*_*_*_*_*_*_*_*_0	13.830 W
	APOLLO PLUS 615*-GBS ****_0	20.730 W
	APOLLO PLUS 616*_*_*_*_*_*_*_*_0	22.110 W
	APOLLO PLUS 710*_*_*_*_*_*_*_*_0	27.645 W
	APOLLO PLUS 625C-*** ***_0	34.530 W
	APOLLO PLUS 350C-*** ***_0	34.530 W
	APOLLO PLUS 363C-*** ***_0	43.500 W
	APOLLO PLUS 716*_*_*_*_*_*_*_*_0	43.515 W
Ambient temperature	All Types	35° C
Dimensions (Width x Height x Depth)	APOLLO PLUS 610*_*_*_*_*_*_*_*_0 APOLLO PLUS 616*_*_*_*_*_*_*_*_0	432 mm x 177 mm x 350 mm
	APOLLO PLUS 7*** ***_ ***_0 APOLLO PLUS 625C-*** ***_0 APOLLO PLUS 350C-*** ***_0 APOLLO PLUS 363C-*** ***_0	432 mm x 220 mm x 400 mm
Compatibility Norms	All Types	EN 60669-1 / 1995 EN 61000-3-2 / 1995 EN 61000-4-2 / 1995 EN 55014 / 1993

## The APOLLO PLUS Series



APOLLO PLUS 616S CEE 05230



APOLLO PLUS 616C SCH 05130



APOLLO PLUS 616C SCH 10150  
DELTA VERSION



APOLLO PLUS 616C WLD 05230



APOLLO PLUS 616S FRS 05230



APOLLO PLUS 615C GBS 05130



APOLLO PLUS 610C DNS 05130



APOLLO PLUS 616S WLD 05430



APOLLO PLUS 616C SCP 05230



APOLLO PLUS 616C HRT 05230



APOLLO PLUS 625C CEE 10130



APOLLO PLUS 350C CEE 20130

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