



DA232 DISTRIBUTION AMPLIFIER User Manual



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Thank you for purchasing a DA232 from Masterclock. Here you'll find instructions for unpacking and installing your DA232, including suggestions for proper care and configuration.

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We are here to help.

You can reach us using various contact methods (phone, email, etc.) found at our website:
www.masterclock.com.

Before calling, please attempt to find the answer to your situation here. You'll find this user manual will handle virtually all of your questions.

Disclaimer - The material in this document is for information only and subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, Masterclock, Inc. assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. Masterclock, Inc. reserves the right to make changes or revisions in the product design or the product manual without reservation and without obligation to notify any person of such revisions and changes.

The DA232 is designed to operate indoors between 32° to 140°F (0° to 60°C) with 0-90% relative humidity, non-condensing.

The DA232 is not water- or moisture-proof. Treat it as you would any other delicate electronic device and do not expose it to water, excessive heat or physical abuse.

INTRODUCTION

DA232

DISTRIBUTION AMPLIFIER

The DA232 is an RS-232C Isolation and Distribution Amplifier. The DA232 allows the incoming signal to be distributed up to 16 outputs (8 outputs standard). The unit receives RS-232C and buffers the signal so that each of the 16 outputs can drive a single "user" at a distance up to 50 feet (per output). All inputs and outputs are via rear mounted 9-pin D-sub connectors.

The two main purposes of the DA232 are to:

1. Improve the distribution capabilities of RS-232C, or,
2. Provide isolation between users of the RS-232C.

INSTALLATION & OPERATION

The basic installation of the DA232 is as simple as installing the DA232 into your rack mount setup and applying power (this unit uses AC power), connecting RS-232C to the input of the DA232 and connecting any of the outputs (up to 16) to the users (computers, voice loggers, etc.) of RS-232C.

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CONNECTING POWER

Apply power by inserting the IEC 320-C5AC cord into an appropriate AC power source. The input range of the DA232 is 110-220 VAC, 50/60 Hz.

PIN DESIGNATIONS

INPUT		OUTPUT 1		OUTPUTS 2-16	
PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
1	NC	1	NC	1	NC
2	RS232 RxD	2	RS232 TxD	2	RS232 TxD
3	RS232 TxD	3	RS232 RxD	3	NC
4	NC	4	NC	4	NC
5	GROUND	5	GROUND	5	GROUND
6	NC	6	NC	6	NC
7	NC	7	NC	7	NC
8	NC	8	NC	8	NC
9	NC	9	NC	9	NC

FEATURES

FRONT PANEL

POWER: A single green LED indicates if AC power is present. The green LED is extinguished if there is an AC power outage.

REAR PANEL

The rear-panel of the DA232 provides access to the AC power input, RS-232C input and RS-232C outputs.

- | | |
|------------------------|--|
| AC POWER: | AC power is supplied to the unit via a 3-wire line cord. |
| RS-232C Input: | A rear mounted 9-pin D-sub connector accepts the RS-232C signal. |
| RS-232C Output: | Up to sixteen mounted 9-pin D-sub connectors output the RS-232C signal. Each "Buffered" signal is capable of driving a single user at a distance of up to 50 feet. |

ENCLOSURE

The DA232 is housed in a rack mount enclosure which measures 16.9" x 1.75" x 3.887" (429.26mm x 44.45mm x 98.73mm) without rack ears. Steel chassis in rust resistant black powder coat.

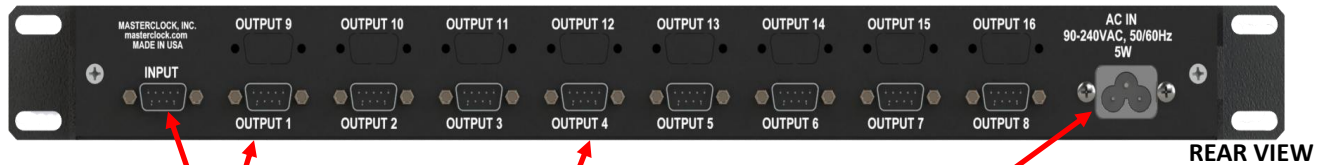
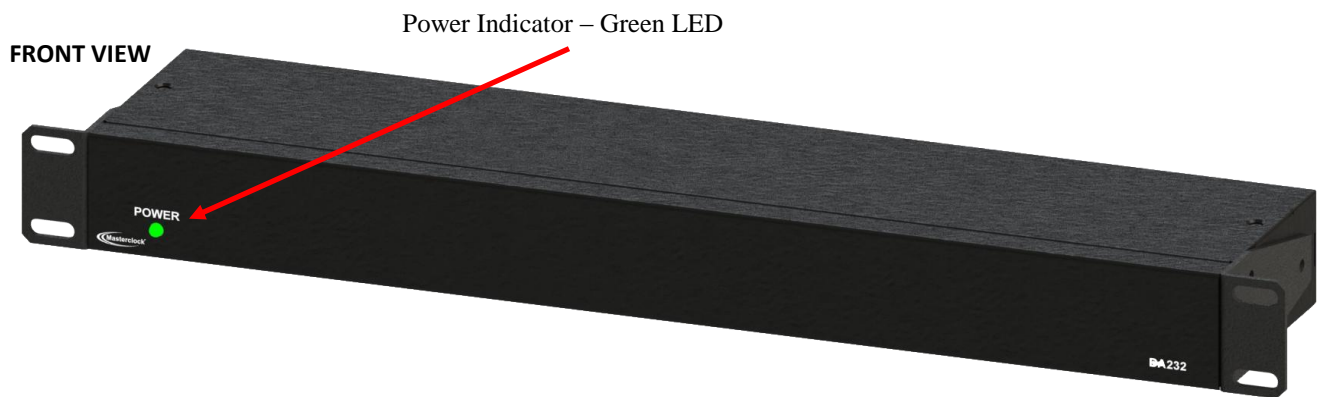
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DA232 CONNECTORS

The list of accessories below is for illustrative purposes. Refer to your sales order for actual items shipped.

- DA232 (Below)
- IEC 320-C5 AC Power cord (Right)



Above left: RS-232C
INPUT & OUTPUT 1: Bi-directional

Above right: AC power – Insert the IEC 320-C5 AC power cord (included) into the AC IN socket located on the back panel.

Above center (bottom row):
1-8 DB9 RS-232C connector outputs standard

(Up to 16 output connector's - optional top row)

NOTE: Only Output 1 is bi-directional



SPECIFICATIONS

INPUTS - 1

- Bi-directional

OUTPUTS 1-16

- Output 1- Level transmits and receives (in and out)
- Outputs 2 -16 transmit only
- 2400 – 115, 280 baud

POWER REQUIREMENTS

AC (IEC Connector)

AC Input Voltage110-220 VAC, 50/60 Hz
AC Input ConnectorIEC 320-C5 input connector
AC power consumption <5W
ProtectionBuilt in fuse, output power limiting, over voltage and short circuit protection.

COMMUNICATIONS – I/O

DB9 male.....D-sub connector

PHYSICAL SIZE

16.9 X 1.75 X 3.887 (inches)
429.26 x 44.45 x 98.73 (mm)
(Without rack mount ears)

WEIGHT

2.49lbs (.95Kg)

OPERATING/STORAGE TEMPERATURE AND HUMIDITY

Operating temperature32° to 140°F (0° to 60°C)
Relative Humidity0 to 90%, non-condensing
Storage Temperature -40° to 185°F (-40° to 85°C)

There are no user serviceable parts inside the DA232 digital time display. Please contact Masterclock, Inc. if you require servicing or repair.



CARE AND CLEANING

Adherence to regular and proper cleaning procedures will preserve the appearance of your device. Scratched or damaged surfaces caused by misuse, mishandling, improper storage, or improper cleaning are not covered under the limited warranty.

A LIST OF "DON'TS"

- **Don't** store the device without the protective plastic shipment bag.
- **Don't** store or place the device face down on any surface.
- **Don't** use abrasive or highly alkaline cleaners.

FOREIGN SUBSTANCE REMOVAL

The use of the following products should help remove foreign substances from your Masterclock device:

Butyl Cellosolve (Removal of paints, marking pens, lipstick, etc.)

The use of adhesive tape or lint removal tools work well for lifting off old weathered paints.

Kerosene, naphtha, or petroleum spirits is generally effective to remove labels, stickers, etc. When the solvent will not penetrate sticker material, apply heat (hair dryer) to soften the adhesive and promote removal.

Gasoline should never be used.

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JOB SITE PRECAUTIONS

We recommend that devices be removed from the wall and stored face up in their protective shipment bags during painting and construction.

New construction and renovations frequently require that the job site be cleaned of any excess mortar, paint, sealant, primers or other construction compounds. Only recommended cleaners should be used to clean the polycarbonate lens. Contact with harsh solvents such as methyl ethyl ketone (MEK) or muriatic acid can result in surface degradation and possible crazing of the polycarbonate.

LIMITED WARRANTY

This Masterclock product warranty extends to the original purchaser.

Masterclock warrants this DA232 against defects in materials and workmanship for a period of five years from the date of sale. If Masterclock receives notice of such defects during the warranty period, Masterclock will, at its option, either repair or replace products that prove to be defective.

Should Masterclock be unable to repair or replace the product within a reasonable amount of time, the customer's alternate remedy shall be a refund of the purchase price upon return of the product to Masterclock. This warranty gives the customer specific legal rights. Other rights, which vary from state to state or province to province, may be available.

EXCLUSIONS

The above warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer, customer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product or improper site preparation and maintenance (if applicable).

WARRANTY LIMITATIONS

MASTERCLOCK MAKES NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS PRODUCT. MASTERCLOCK SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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In any state or province which does not allow the foregoing disclaimer, any implied warranty of merchantability or fitness for a particular purpose imposed by law in those states or provinces is limited to the one-year duration of the written warranty.

EXCLUSIVE REMEDIES

THE REMEDIES PROVIDED HEREIN ARE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MASTERCLOCK BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

In any state or province that does not allow the foregoing exclusion or limitation of incidental or consequential damages, the customer may have other remedies.

HARDWARE SERVICE

You may return your DA232 device to Masterclock for repair service. Please contact the factory for **RETURN AUTHORIZATION** before returning the unit. Under the Limited Warranty, when you return your device for service, Masterclock will pay for transportation cost if within one year of the purchase date. For international returns, please contact the factory.

SERVICE INFORMATION

We sincerely hope that you never experience a problem with any Masterclock product. If you do need service, contact Masterclock's Technical Support team. A trained specialist will help you to quickly determine the source of the problem. **Many problems are easily resolved with a single phone call or email.** If it is necessary to return a unit to us, an RMA (Return Material Authorization) number will be given to you.

Visit our website to download a current RMA request form.

<http://www.masterclock.com/rma.php>

Masterclock tracks the flow of returned material with our RMA system to ensure speedy service. You must include this RMA number on the outside of the box so that your return can be processed immediately.

RMA POLICY

Our RMA policy is straightforward and is based on several basic premises:

- An item can be returned, subject to several basic requirements, under our 30-day Satisfaction Guarantee.
- If an item fails within the Warranty Period we will repair and pay for return if within first year of warranty.
- If an item gives trouble beyond the warranty period and requires repair we will inspect, repair and return the item to you for a reasonable charge for the work and the cost for freight.
- If you think an item or system is not working properly we expect you to read the instruction manual, talk with our technical support department and make a reasonable effort to resolve the issue.
- If you return an item to us for repair and the item is found to work properly then we will charge you an "Analysis and Inspection" charge plus the return freight.

Please supply us with as many details about the problem as you can. The information you provide will be supplied to the repair department before your unit arrives. This helps us to provide you with the best service, in the fastest manner.

We apologize for any inconvenience that the need for repair may cause you. We hope that our rapid service meets your needs. If you have any suggestions to help us improve our service, please give us a call. We appreciate your ideas and will respond to them.

HEALTH AND SAFETY

These devices generate, use and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by removing power from the device, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Connect the devices AC power cord into an outlet on a different circuit than other devices.
2. Increase the physical distance between the DA232 digital time display and other devices.
3. Contact technical support.

This DA232 series has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules, along with the CE test. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Only qualified persons are authorized to carry out maintenance on this device. Read this User's Manual carefully, and follow the correct procedure when setting up the device. Do not open your Masterclock product or attempt to disassemble or modify it.

Never insert any metallic object into the devices case. Doing so increases the risk of electrical shock, short circuiting, fire or personal injury.



Never expose this device to rain, or use it near water or in damp or wet conditions.

Never place objects containing liquids on or near this device, as they may spill into its openings increasing the risk of electrical shock, short circuiting, fire or personal injury.

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PRINTING

While optimized for onscreen viewing, the pages of this manual are formatted for printing on 8.5" x 11" and A4 sized paper, giving you the option to print the entire manual or just a specific page or section.



WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE (WEEE) 2002/95/EC

The NTD/NTDS models are considered WEEE Category 9 (Monitoring and Control Instruments Equipment) as defined by the WEEE Directive and therefore fall within the scope of the WEEE Directive.

For more information about Masterclock's WEEE compliance and recycle program, please visit:

http://www.masterclock.com/rohs_compliance.php

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.



RoHS

RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES DIRECTIVE 2002/95/EC

The RoHS directive covers the same scope of electrical and electronic equipment that are under the WEEE directive, except that Category 8, Medical Devices, and Category 9, Monitoring and Control Instruments, which are under WEEE, are excluded from the RoHS directive.

The time display product NTD/NTDS fall under the category of Monitoring and Control Instruments Equipment (Category 9 as defined in Annex 1A of WEEE 2002/96/EC Directive) which is excluded from the RoHS directive 2002/95/EC (reference Article 2, paragraph 1) requirements.

These products are manufactured using lead in the soldering process as allowed for items excluded from the RoHS directive. These units are RoHS Compliant only in that they are excluded from the RoHS directive under Category 9, Monitoring and Control Instruments.

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