

# Service Bulletin

<b>MODEL(S)</b>	MD23
<b>PART NUMBER(S)</b>	6420023-( )
<b>DESCRIPTION</b>	FLEX Custom Function Display
<b>TOPIC</b>	Modification 1 and Software Version 1.1.0
<b>PURPOSE</b>	Product and Performance Enhancements
<b>RELEASE DATE</b>	August 23, 2022

## APPLICABILITY

This Service Bulletin is applicable to the MD23 FLEX Custom Function Display, part number series 6420023-( ), manufactured by Mid-Continent Instrument Co., Inc. (dba Mid-Continent Instruments and Avionics).

The marking of Modification (MOD) 1 on the nameplate is associated with the hardware change only. The software version is independent of the nameplate marking.

As this Service Bulletin applies to the series, all MD23 versions may be marked with MOD 1 on the nameplate; however, the hardware change associated with MOD 1 is only available for one configuration of the series, part number 6420023-1. This change will not be implemented for all other configurations marked, regardless of a possible MOD 1 marking.

## PURPOSE

The MD23 identified at the product level as MOD 1 improves frequency sensing performance. Additionally, the MD23 software version 1.1.0 represents improvements to product functionality and support of additional features.

## EFFECTIVITY

MD23 FLEX units manufactured and marked with MOD 1 shall comply with the hardware updates associated with this Service Bulletin. MOD 1 changes are not required for continued airworthiness.

Mid-Continent Instruments and Avionics is recommending that all MD23 units in the field be updated to Software Version 1.1.0 in order to take advantage of added features, enhancements and resolutions that improve the function and performance of the product. Note: An MD23 unit currently operating Software Version 1.0.1 or earlier must first be updated to Software Version 1.0.2 prior to installing Software Version 1.1.0.

**EFFECTIVITY (Continued)**

MD23 FLEX units in the field do not require this software update to maintain continued airworthiness.

Following the release date of the updated software, all MD23 units manufactured or serviced by Mid-Continent Instruments and Avionics shall be installed with Software Version 1.1.0 or later.

**DESCRIPTION**

The following list describes the enhancements associated with the MOD 1 hardware update.

ENHANCEMENTS

1. Upgraded digital frequency acquisition  
Improves the range and accuracy of the frequency input channels for 6420023-1.  
Note: SW version 1.1.0 or newer is required for units with the MOD 1 hardware update.

The following list describes the added features, enhancements and resolutions incorporated in Software Version 1.1.0.

ADDED FEATURES

1. Added functionality associated with the inertial measurement unit hardware incorporated in the 6420023-3 unit version
2. Added support for the graphical display of an artificial horizon for the 6420023-3 unit version
3. Added improved frequency acquisition associated with the MOD 1 hardware changes available for the 6420023-1 product configuration
4. Added heading and related features available for the 6420023-3 unit version in conjunction with use of the MD32 remote magnetometer
5. Added operational functions for activation of the RS-232 I/O interface
6. Added ability to configure the ARINC 429 output to transmit at low speed

ENHANCEMENTS

1. Improve CID graphics handling to reduce configuration file sizes
2. Add ability to set SDI bits for ARINC 429 transmit data
3. Provide the option for manual brightness control from within the main application, without accessing the existing brightness control function in the User Menu

RESOLUTIONS

1. Resolved visual errors in Configuration and Info Menu transitions
2. Fixed bitmap display offset for certain graphical functions

3. Fixed instability when drawing graphical elements based on various parameters
4. Fixed ARINC 429 receive issue with negative BCD values
5. Fixed undetected counts when the knob is turned too quickly

#### **ESTIMATED MANPOWER**

Software can be updated on fielded units in approximately 10 minutes.

#### **WEIGHT AND BALANCE**

No change

#### **ELECTRICAL LOAD DATA**

No change

#### **CERTIFICATION**

This Service Bulletin represents a minor change to the previously approved Technical Standard Orders Authorization for the MD23 FLEX. Any changes to software have been completed in accordance with approved developmental and quality processes per the guidelines of RTCA document DO-178C.

Software version 1.1.0 enables features that support additional Technical Standard Order Authorizations for the 6420023-3 unit version, including C3e, C4c, C201; and C8e for the 6420023-2 version.

#### **OTHER PUBLICATIONS AFFECTED**

Mid-Continent Instruments and Avionics Installation Manual and Operating Instructions, part number 9019161, Revision A or later, is updated with information associated with this Service Bulletin, as applicable.

## ACCOMPLISHMENT INSTRUCTIONS

The updates are to be performed only by authorized personnel per the instructions as listed in this Service Bulletin. Units with this software upgrade are available for sale from the manufacturer.

All existing versions (6420023-1 only) of the product can only be upgraded by the manufacturer to incorporate the hardware changes associated with MOD 1.

All fielded units with previous software versions can be updated with Software Version 1.1.0. The unit software can be updated by returning the unit to Mid-Continent Instruments and Avionics or by performing the instructions as listed in this section.

### **If returning the MD23 unit to Mid-Continent Instruments and Avionics:**

Call Mid-Continent Instruments and Avionics sales department for a Return Material Authorization (RMA) at 316-630-0101.

Return address: Mid-Continent Instruments and Avionics  
9400 E. 34<sup>th</sup> Street N.  
Wichita, KS 67226

### **If performing this update in the field:**

Follow the Instructions for Continued Airworthiness (ICA) for Software Updates as provided in Section 5.1 of the Mid-Continent Instruments and Avionics Installation Manual and Operating Instructions, part number 9019161.