SIGNAL FLOW BLOCK STANDARDS

Level 3 Audio Visual

2/23/2023

CONTENTS

1. STANDARD BLOCK DEFINITIONS

1.1. UNIVERSAL SETTINGS

1.1.1. SNAPUNIT and GRIDUNIT values all set to **0.375**

1.1.2. All blocks shall include a Basepoint that is attached to the top-leftmost connector on the block.

1.1.3. All blocks should include a 2nd move point that is directly opposite the Basepoint.

1.1.4. All blocks shall include a move point for the COMMENT attribute.

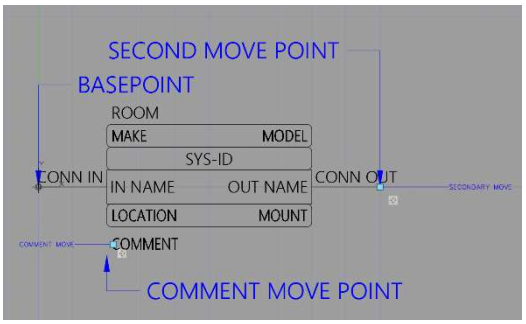
1.1.5. All objects in the block are on the 0 layer.

1.1.6. All objects except custom text and line work shall have color by layer.

1.1.7. All custom text and line work shall have color set to index color 7 White (Black)

1.1.8. All signal flow blocks saved to the Block Library shall represent all the connections for that piece of equipment.

- Generic blocks are the only exception since they don't represent a specific make/model.



1.2. TEXT

1.2.1. All text in L3AV SF BLOCKS style.

1.2.2. All text height is .125 (1/8").

1.2.3. Text width:

- SYS-ID – set to 1.
- CONNECTOR INFO (IN-OUT blocks) – set to 1.
- MAKE and MODEL – set to .85
- LOCATION and MOUNT – set to .85
- COMMENT and ROOM – set to .85

1.2.4. All text in CAPS.

1.2.5. Location Field

- Where in the room will it be located?
  - WALL / CEILING / TABLE / FLOOR / BOX / RACK

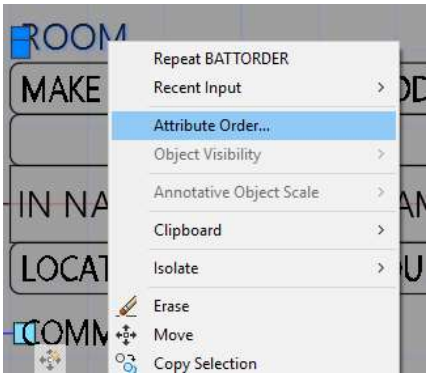
1.2.6. Mount Field

- How will it be mounted?
  - FLUSH MT / SURF MT / UNDER MT / FREE STANDING / WORK SURFACE / BRACKET / SHELF
  - For shelf mounted rack EQ, use SHELF.
  - For rack mount EQ with ears, mount equals # of RU's. ex: 1RU.
  - Displays can have the model # of the mount in this field. ex: LTM1U.
  - Specialty mount model# can go in this field also.

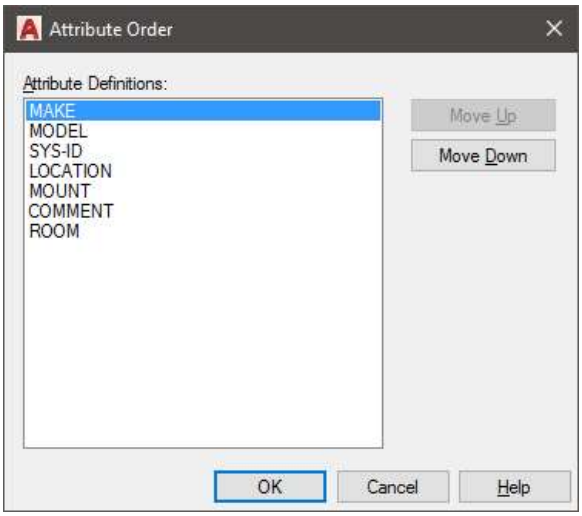
1.3. ATTRIBUTE ORDER

1.3.1. In block editor, right click on a text field that is an attribute.

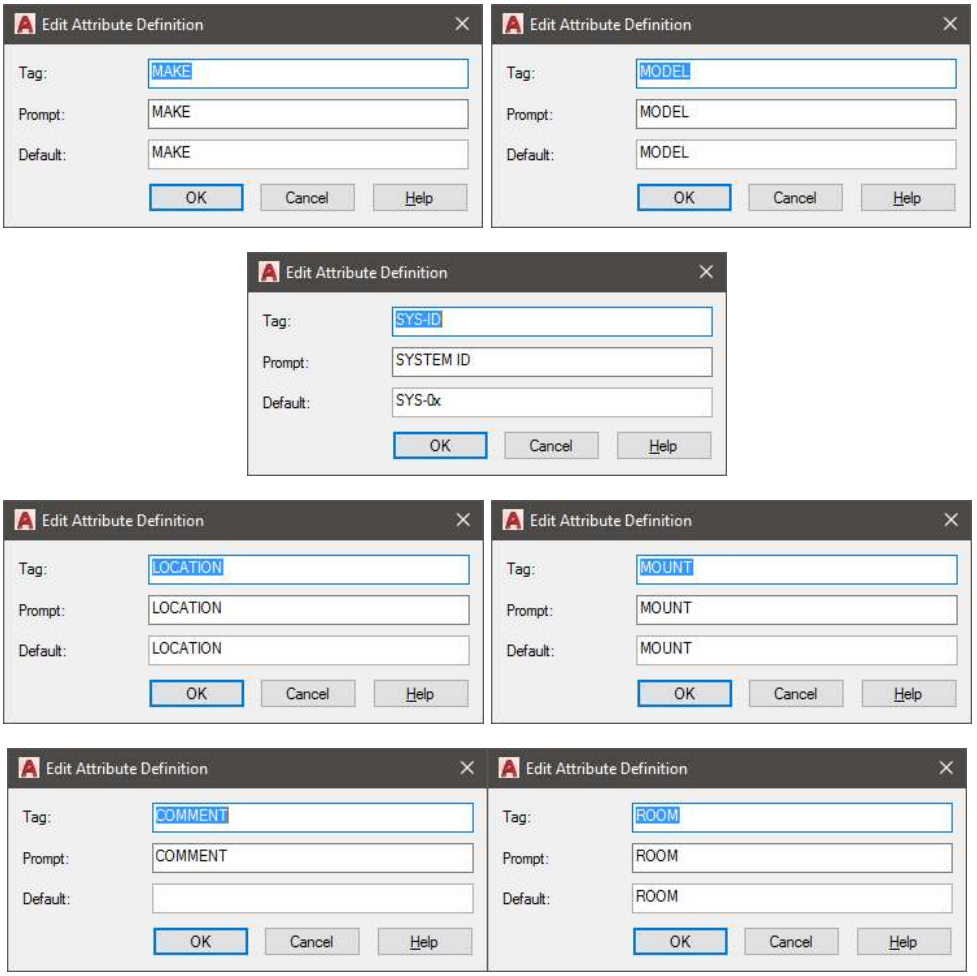
1.3.2. Choose Attribute Order….



1.3.3. Move attribute text up or down in the order shown to the right. (Note: Changing the attribute order will affect any Action Selection Sets that may be present in the dynamic block. After changing attribute order, you will need to modify any Selection Sets that contain attributes. Best Practice is to adjust Attribute order before creating any dynamic elements within the block.)



1.4. ATTRIBUTE DEFINITIONS



1.5. CONNECTIONS

1.5.1. Refer to the 'Drafting – Connector Types Reference Guide' in Guru for the most current naming conventions

1.5.2. Format for naming is 'Connector Type' 'Qty'. For example, a single Phoenix connector for balanced audio would read as PHX3. A set of 3 BNC connectors for Component video would read as BNC3. A pair of RCA connectors for unbalanced stereo audio would read as RCA2.

- The number prefix only needs to be included when there is more than 1 of a connector type. For example, a single SDI connection would read as BNC and not ~~BNC1~~.

1.5.3. If a connection can commonly be either male or female, add a lowercase letter to the end of the connector name to differentiate which gender type it is.

- This applies mainly to the following connector types: XLR, DB9 (or DB25), HD15.
- This DOES NOT apply to the following connector types: HDMI, DP, USB, PHX, RJ45, RCA, etc.
  - So, a XLR input on a DSP would read XLR3f, while the XLR output on a DSP would read XLR3m. A VGA connection on most equipment will read as HD15f. A serial connection can often go either way (DB9m or DB9f).For shelf mounted rack.

1.6. INPUTS

1.6.1. Place all inputs on the left side of the block.

1.6.2. If inputs are numbered, start with 1 and work down.

- (Note: Inputs with multiple formats start with digital video.)

1.6.3. If inputs aren't numbered, then the order shall be:

- Digital Video inputs on the top.
  - (Note: For a CODEC, cameras start at the top.)
- Analog Video inputs
- Audio inputs
- USB connections
  - Can be placed on either side of block if needed.
- Control connections
  - Connections that control a device (eg. RS-232, IR in)
- LAN connections

1.6.4. Power is always on the bottom left.

1.7. OUTPUTS

2.6.1. Place all outputs on the right side of the block.

2.6.2. If outputs are numbered, start with 1 and work down.

- (Note: Outputs with multiple formats start with digital video.)

2.6.3. If outputs aren't numbered, then the order shall be:

- Digital Video outputs on the top.
- Analog Video outputs
- Audio outputs

- USB connections
  - Can be placed on either side of block if needed.
- Control connections
  - Connections that control other devices (eg. RS-232 out, IR out, relay, etc.)

1.8. DYNAMIC TOOLS

3.6.1. Dynamic tools are generally outside of the scope of this document but are mentioned here since you will occasionally come across them when in Block Editor.

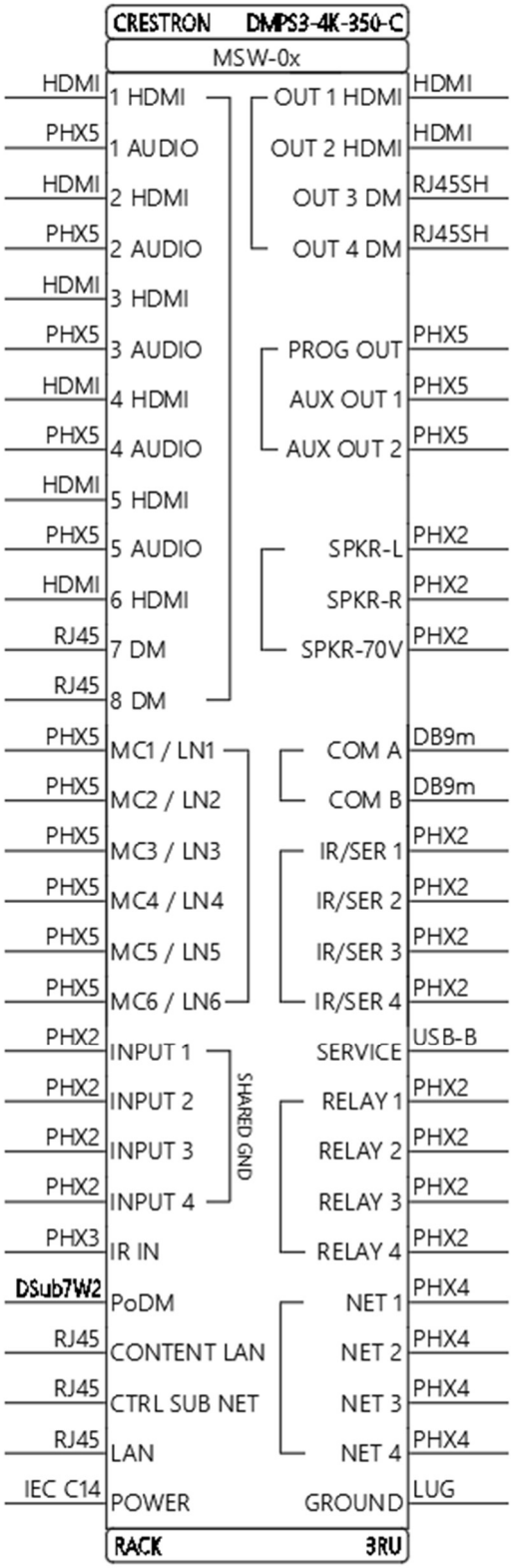
3.6.2. The most common dynamic tool that you will find in every signal flow block is the Point Move command, which is used in conjunction with the Comment attribute as well as the 2nd Move Point.

3.6.3. Some other dynamic tools that may be of use include:

- Flip Set – useful when you need to show connections on the 'wrong' side of the block. Often used with LAN connections on touch panels, control connections on control processors, USB connections, etc.
- Linear Move – Typically used along with the Visibility Set to allow for portions of a block to move up and down.
- Visibility Set – Usfeul if there is a device that has several different flavors and you don't want to build different blocks for each one. Extron IPCP processors and presentations switches are a good example, as are some Crestron DMPS devices.
- Lookup Set – Used in conjunction with the Visibility Set to automate dynamic movements.

1.9. BLOCK REFERENCE

1.9.1. Use the Crestron DMPS3-4K-350-C as a reference.



2. New Signal Flow Block Creation

2.1. Start with an existing block to maintain dynamic attributes

2.1.1. Find a block in the Block Library that is close to the one you need to make and open it in Block Editor.
- Alternately you can start from scratch. See 2.3 below.

2.1.2. Immediately close out of Block Editor by selecting 'Close Block Editor' from the Ribbon. This will take you back to model space for the block.

2.1.3. Save the model space as a new file in the Block Library. **It is critical that this step be completed before moving any further to ensure that you don't overwrite blocks from the existing file.**
- Right-click on the name of the file tab and choose 'Save As'.
- The name of the new file should be the name of the new device and not have any suffixes at the end of the file name.
- Make sure you put the block under the correct Manufacturer folder.
- If the new block you are creating is from a Manufacturer not currently in our library then you will need to create a new file folder in the Block Library.

2.1.4. Re-open the block in Block Editor to make changes.
- **DO NOT** make any changes to the block from model space, as these will not be applied to the block when you are selecting it from the Block Library when you drag it in to a drawing you are working on.
  - This is a common mistake when editing existing blocks and usually comes in the form of changing the name of any of the attributes (Make, Model, SYS-ID, Location, Mount).

2.1.5. Once the block is open in Block Editor, modify the block as needed.
- Make sure you check the MAKE, MODEL, SYS-ID, LOCATION, and MOUNT attributes to ensure they match up with the new block you are creating.
- Double-check the attribute order to ensure that it follows our standard ordering. Just because you started with an existing block doesn't necessarily mean that it was 100% accurate. See section 1.3.
- If there are dynamic block action selection sets, they may need to be updated. Ask for help on this if needed.
  - If you have added anything new (In/Out blocks, linework, text, dynamic tools), then you will need to make sure that any existing dynamic tools are updated to account for the newly added content.
- Make sure all objects are on the 0 layer
- Make sure all object are set to color By Layer, with the exception of any custom text or linework which should be set to index color 7 (White/Black).

2.1.6. Before saving, select 'Test Block' from the ribbon to test the block.
- Test the new block by moving it around by its' Basepoint and 2nd move point to ensure that the whole block moves.
- Test the move Comment point to make sure that it works and is moving the Comment field (you may need to enter some test text in the Comment field first)

2.1.7. When done making changes, select 'Close Block Editor' from the Ribbon.

2.1.8. Rename the block.

- Type ‘rename’ into the Command Line.
- Select the name of the existing block that you edited.
- Enter the new name for the block and be sure to add ‘-SF’ to the end of the block name.

2.1.9. Delete any extraneous blocks from model space if they do not apply to the newly created block. This includes any other signal flow blocks and any equipment detail blocks.

2.1.10. Delete the block you just finished editing from model space, then go into Design Center>Open Drawings’ tab and find the block you just created.

- Place the block back into model space, and make sure that this block (and all other remaining blocks for that matter) are on Layer 0.
- This will refresh the block and update any of the attributes that have been modified.
- Check the block to make sure all the Attributes are labeled correctly.
- If any of the attributes looks out of place then you will need to run the ATTSYNC command on the block to fix it.

2.1.11. Run the purge command and select Purge All.

- After running the Purge command, the only blocks left should be the ones related to the new device(s). The only available layer should be Layer 0, and maybe TA-NPLT if you happen to have other blocks on the drawing representing equipment views.

2.1.12. Perform a final save to the Block Library.

- **REMINDER – ANY BLOCK YOU WANT TO SAVE TO THE BLOCK LIBRARY MUST CONFORM TO THE STANDARDS ESTABLISHED THROUGHOUT THIS DOCUMENT.**

2.2. SAVING BLOCKS FROM WITHIN AN EXISTING DRAWING

2.2.1. Before saving, be certain all objects that will be included in the block are on the 0 layer.

2.2.2. All objects except text must have color by layer.

2.2.3. All text must have color on index color 7 White (Black)

2.2.4. When saving a block to the drawing, press B.

- Block suffixes are as follows (2-7 are for views of the actual equipment in Plan, RCP and Elevation views)
  - –SF (Signal Flow)
  - –FRONT (Front View)
  - –TOP (Top View)
  - –SIDE (Side View)
  - –REAR (Rear View)
  - –ISO (Isometric View)
  - –BOTT (Bottom View)

2.2.5. When saving a block to the engineering drive, press WB.

- In the Write Block window, choose objects, not block.
- Save the block(s) as a drawing **with no suffix**, just the model name.
- All views of a piece of equipment (see section 2.2.4) shall be in the same drawing file.

2.2.6. Verify that any block saved to the engineering drive has been purged of all extraneous information.

2.2.7. When purging blocks from your drawing, be sure what you want to keep is in model space.

2.3. START FROM SCRATCH (ADVANCED USERS ONLY)

2.3.1. The basic building blocks for signal flow drawings are in the AutoCAD Block Library>L3AV_DRAFTING>_BUILDING BLOCKS drawing file.

2.3.2. Start with TEMPLATE BLOCK-BASIC-SF.

- Bring it in to your model space, and explode it.
- Edit the header, footer and sys-id sections to suit.
- Add rows as needed for your inputs and outputs.
- Save as outlined above.