

# Format select

TEC/NOT/048

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## 24.1 Overview

Format select enables different sampling strategies to be loaded into the hardware simultaneously and to switch between them. Having multiple format select settings enables different test configurations to be set up for the stages of landing, take off and flutter tests.

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**NOTE:** Using multiple format selects occupies space in the EEPROM. See “24.4.2 Encoder/controller module” on page 2.

Format select can also be used in calibration or test configurations. For example, format select can be used in pseudo shunt calibration, using the adjust voltage  $V_{adj}$  of the bridge modules as shown in the following figure. This gives a known deflection on all selected channels (if set to non-zero value).

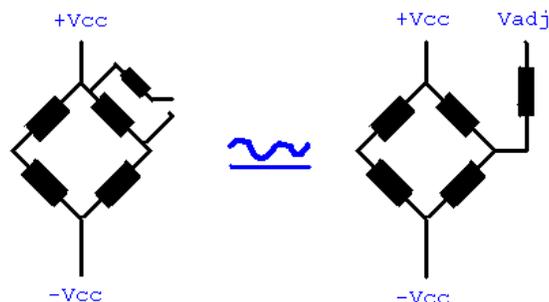


Figure 24-1: Pseudo shunt calibration using format select

## 24.2 Wiring for format select

The KAD/ENC/004, KAD/BCU/001 and KAD/BCU/101 modules have four format select lines. These are buffered TLL inputs (pulled to GND if not connected).

FORMAT ID 0 - 13 are available for use; 14 and 15 are reserved.

By setting this format select, the controller, the PCM transmitters and some modules use different EEPROM addresses. Format select is acting like an offset in the EEPROM address on the Acra KAM-500.

## 24.3 Bus monitors and format select

Most bus monitor modules do not support format select, that is, for any format select chosen, bus monitors use the EEPROM content from FMT\_0 (format select 0). To transmit data from different messages on a different format select, you must set up all messages and data words for each format select and then transmit what you want into the PCM.

### For example:

With the MIL-STD-1553 modules, we want to look at messages A, B and C in format 0, and we want to look at messages A, C and D in FMT\_7.

To do this, A, B, C and D must be defined for FMT\_0 and FMT\_7 in the module setup. However, in the PCM for FMT\_0, you transmit A, B and C; and in the PCM for FMT\_7, you transmit A, C and D.

The modules in the following table must use format select as described in this section.

Table 24-1: Bus monitors which use EEPROM from FMT\_0

MSB/001	MSB/003	PBM/001	ARI/001/B
MSB/001/B	MSB/003/B	PBM/002	UAR/002/B
MSB/002	FBM/001/B	SBM/001	UAR/002/C
MSB/002/B	ARI/001	FBM/001	UAR/102

**NOTE:** If you want to use format select, and your bus monitor is not listed above, contact Curtiss-Wright support (acra-support@curtisswright.com).

## 24.4 Format select for sink modules

### 24.4.1 Memory module

You can use MEM/003 or MEM/004 in FMT\_0 only.

### 24.4.2 Encoder/controller module

Both the encoder and controller have address space dedicated to format select. A single format can spill over format select boundaries, if it is large enough.

Overlapping issues are difficult to assess because the number of instructions is dynamic and depends on configuration.

The programmer KUP detects formats overlapping in EEPROM. If this error is reported, you must then leave room between the various formats in the EEPROM.

The KAD/ENC/004, KAD/BCU/001 and KAD/BCU/101 family PCM transmitter uses 65536 16-bit EEPROM words per format select.

**For example:**

The KAD/BCU/101/B PCM transmitter uses 65536 16-bit EEPROM words per format select. If there is a 16-bit PCM in your setup with 800 words/minor frames × 256 minor frames = 204800 words per major frame, this PCM word structure is stored in the EEPROM, taking two 16-bit words per PCM words, so the PCM will take 204800 × 2 = 409600 words.

Therefore, PCM would require  $409600/65536 = 7$  format select EEPROM space.

Therefore, you must use FMT\_0 and FMT\_7 instead of using FMT\_0 and FMT\_1.

**NOTE:** If the PCM is a 10-bit fixed PCM, each 10-bit word could need up to three address locations.

The KAD/ENC/004 (or higher controller revision) will not normally run into format select overruns unless there is something called paging. Paging occurs when the acquisition cycle (major frame duration for PCM) does not divide exactly by 1 microsecond. This causes the instruction set to repeat until the overall cycle divides exactly by 1 microsecond. A large number of pages can cause the format select region to overflow.

### 24.4.3 Analog modules

The bridge modules KAD/ADC/009, KAD/ADC/014, KAD/ADC/109 and KAD/ADC/114, can change the adjust voltage using multi-format. Only the adjust voltage of the modules must be changed during format select. All other module setup information must remain the same.

**NOTE:** The KAD/ADC/005 family can only address from FMT\_0 to FMT\_7. The KAD/ADC/105 family has the same capabilities as the KAD/ADC/005 over 14 formats.