CAMAC CRATE CONTROLLER TYPE A-1, MODEL CCA-1 AND TYPE A-2, MODEL CCA-2

FEATURES:

- FULL COMPLIANCE TO EUR4600E, EUR4100E, AND EUR6500E
- AUXILIARY BUS OPERATION
- LOW POWER CONSUMPTION
- HIGH IMPEDANCE INPUTS (FOR BOTH POWER ON AND POWER OFF CONDITIONS).
- ADDITIONAL GATING TO REDUCE READ AND WRITE NOISE.
- TWO ADDITIONAL MODES OF OPERATION, "HOLD" AND "FAST READ", BOTH MUST BE USER ACTIVATED.
- ADDRESS CHECKING
- BUFFERED L LINES

THE JOERGER ENTERPRISES, INC. CRATE CONTROLLERS TYPE A-1 AND TYPE A-2 CONFORM FULLY TO EUR 4100E (IEEE 583-1975), EUR 4600E (IEEE 596-1976) AND FOR THE TYPE A-2 EUR 6500E (DOE/EV-0007).

THIS DATA SHEET IS TO DESCRIBE BRIEFLY THE MODEL CCA-1 AND CCA-2. FOR A COMPLETE UNDERSTANDING OF THE TYPE A CONTROLLERS IT IS RECOMMENDED THAT THE ABOVE SPECIFICATIONS BE CONSULTED.

THE MODELS CCA-1 AND CCA-2 PROVIDE A STANDARD ENTRY INTO A CAMAC CRATE. THE STANDARD BRANCH HIGHWAY BEING AN EXTENSION OF THE DATAWAY, ALTHOUGH NOT ON A SIGNAL FOR SIGNAL BASIS. THIS USE OF A STANDARD ENTRY PORT INTO THE CRATE HAS BEEN ESTABLISHED TO ALLOW MULTICRATE SYSTEMS TO BE USED AND EXPANDED EASILY, UP TO SEVEN CRATES. IT ALSO FACILITATES INTERFACING TO CAMAC. NOW ONLY ONE STANDARD INTERFACE IS NEEDED TO INTERFACE A DEVICE TO CAMAC. THIS FEATURE ALSO MAKES TYPE A CONTROLLERS USEFUL EVEN IN A SINGLE CRATE SYSTEM.

THE MODEL CCA-2 IN ADDITION TO PROVIDING A STANDARD INTERFACE TO THE BRANCH HIGHWAY, HAS THE ABILITY TO OPERATE ON A STANDARD AUXILIARY BUS. THIS BUS, WITH ACCESS AT THE REAR OF THE MODULE, ALLOWS OTHER MODULES OR EXTERNAL DEVICES ACCESS TO THE CONTROL STATION OF THE CRATE ON A PRIORITY BASIS. THIS PROVIDES THE ABILITY FOR SUCH THINGS AS INTER-MODULE COMMUNICATION OVER THE DATAWAY, THUS GREATLY EXPANDING CAPABILITIES AT THE CRATE LEVEL. SUBSYSTEMS CAN NOW OPERATE WITHIN THE CRATE USING THE DATAWAY, COMPLETELY INDEPENDENT OF THE BRANCH HIGHWAY.

THE BASIC OPERATING MODE ON THE BRANCH HIGHWAY IS THE COMMAND MODE. TIMING IS PROVIDED IN A HANDSHAKE ARRANGEMENT TO ELIMINATE TIMING ERRORS. A BTA SIGNAL IS SENT OUT TO INDICATE A COMMAND IS PRESENT AND A CYCLE SHOULD BE INITIATED. EACH CRATE RESPONDS ON ITS INDIVIDUAL BTB LINE TO INDICATE TO THE BRANCH DRIVER IT IS READY. IN THIS WAY THE BRANCH DRIVER MAY COMMUNICATE WITH ALL THE CRATES AND KNOW THEIR STATUS.

A COMMAND IS DEFINED ON THE BRANCH WITH THE FOLLOWING SIGNALS. CRATE ADDRESS ON SEVEN BCR LINES, STATION ADDRESS ON FIVE CODED BN LINES, THE SUBADDRESS ON FOUR CODED BA LINES, AND THE FUNCTION ON FIVE CODED BF LINES. READ OR WRITE DATA IS TRANSFERRED ON ONE SET OF 24 BRW LINES. WITH THIS INFORMATION AND THE TIMING SIGNALS BTA AND THE SEVEN BTB'S ALL COMMAND FUNCTIONS ARE PERFORMED.

THE OTHER STANDARD MODE OF OPERATION IS THE GRADED L MODE. THIS MODE IS IDENTIFIED WITH A SIGNAL ON THE BG LINE. DURING THIS OPERATION THE

INTERRUPT "L" SIGNALS FROM THE MODULES WHICH ARE BROUGHT TO THE REAR "GRADED L" CONNECTOR, ARE GRADED EXTERNALLY FOR PRESENTATION ON THE BRW LINES.

THE FOLLOWING TWO MODES ARE OPTIONAL AND ARE PROVIDED TO AID THE USER WITH SPECIAL PROBLEMS THAT MAY EXIST IN SOME SYSTEMS. THE CIRCUITRY FOR THESE MODES IS INCLUDED. HOWEVER, BECAUSE THEY ARE NOT STANDARD, A JUMPER MUST BE ADDED TO ACTIVATE EITHER OF THEM. THE "HOLD" MODE ALLOWS A SLOWER DEVICE TO BE USED IN A CAMAC SYSTEM. NORMALLY A MODULE MUST RESPOND TO A COMMAND IN APPROXIMATELY 400NSEC. TO INCORPORATE MODULES THAT CANNOT RESPOND THIS FAST THE HOLD LINE P2 IS ACTIVATED (BROUGHT TO LOGIC "1") BY THE MODULE TO INDICATE IT NEEDS MORE TIME TO RESPOND. WHEN THE CONTROLLER SENSES THE HOLD LINE AT "1" IT STOPS THE TIMING GENERATOR BEFORE S1. WHEN THE MODULE IS READY IT RELEASES THE HOLD LINE AND THE STANDARD CAMAC CYCLE IS PERFORMED.

THE "FAST READ" MODE IS TO ALLOW BLOCKS OF DATA TO BE READ OR WRITTEN FASTER. THIS ELIMINATES THE GENERATION OF S2 AND THUS SHORTENS THE CYCLE. SPARE LINE BV4 HAS BEEN ASSIGNED AS "FAST READ". A LOGIC "1" ON THIS LINE WILL COMMAND THE CONTROLLER TO PERFORM THE SHORTER CYCLES.

A BRANCH INITIALIZE IS PERFORMED BY PLACING A LOGIC "1" ON THE BZ LINE. WHEN THIS IS RECEIVED BY THE CRATE CONTROLLER IT IS INTEGRATED AND TAKES PRIORITY OVER ALL COMMANDS AND THE CONTROLLER INITIALIZES THE CRATE.

A DEMAND LINE BD IS PROVIDED TO ALLOW THE CONTROLLER TO INDICATE THAT A MODULE IN THE CRATE IS REQUESTING SERVICE.

THE Q AND X RESPONSES ARE THE DATAWAY RESPONSES "ORED" WITH THE Q AND X RESPONSE OF THE CONTROLLER ITSELF.

THERE IS NO EQUIVALENT OF THE INHIBIT LINE I IN THE BRANCH. AN INHIBIT MAY BE GENERATED, HOWEVER, VIA THE FRONT PANEL LEMO CONNECTOR OR ON COMMAND.

ALTHOUGH THE TYPE A-1 CONTROLLER ALWAYS HAS COMMAND OF THE CRATE IT MUST BE REMEMBERED THAT THE TYPE A-2 DOES NOT. FOR THE TYPE A-2 TO PERFORM ANY OPERATION IT MUST FIRST ACQUIRE CONTROL OF THE CRATE AS OTHER AUXILIARY CONTROLLERS MUST. IT MAY USE EITHER THE REQUEST/ GRANT MODE OR AUXILIARY CONTROLLER LOCKOUT MODE.

THE CONTROLLER CAN BE SWITCHED TO AN OFF-LINE MODE. DURING THIS TIME THE CONTROLLER RECOGNIZES NO SIGNALS ON THE BRANCH AND DOES NOT GENERATE ANY SIGNALS ONTO THE BRANCH. IN THE OFF-LINE MODE THE MANUAL Z AND C PUSHBUTTONS BECOME EFFECTIVE. LOGIC IS PROVIDED TO PREVENT MORE THAN ONE CRATE FROM HAVING THE SAME ADDRESS. THE CRATE ADDRESS IS SELECTED IN THE OFF-LINE MODE AND WHEN PLACED ON LINE, IF THE ADDRESS IS VALID, AN "ON LINE" LED WILL LIGHT TO INDICATE THAT THE CRATE IS ACTUALLY ON LINE.

PULL-UP RESISTORS ARE PROVIDED FOR ALL THE DATAWAY SIGNALS EXCEPT THE PATCH PINS. PULL-UPS ARE ALSO PROVIDED FOR THE GRADED L SIGNALS (GL). THE CONTROLLER IS CAPABLE OF SINKING 36.8MA ON ALL THE BUSSED DATAWAY SIGNAL LINES.

THE BRANCH DRIVERS ARE CAPABLE OF SINKING 133MA AT .3 VOLTS FOR A LOGIC "1". HIGH IMPEDANCE BRANCH INPUTS REQUIRE LESS THAN .3MA OF INPUT DRIVE CURRENT.

NOTE: CIRCUITRY IS ALSO PROVIDED TO INSURE A HIGH INPUT IMPEDANCE WITH POWER OFF.

VISUAL INDICATORS ARE PROVIDED TO SHOW WHEN THE CRATE IS ADDRESSED, CR; IF THERE IS A DATAWAY INHIBIT SIGNAL BEING GENERATED, I; OR IF AN INTERRUPT IS PRESENT IN THE CRATE,D. THE MODEL CCA-2 ALSO HAS AN "ACTIVE" (ACT) LIGHT WHICH INDICATES WHEN THE CONTROLLER HAS CONTROL OF THE DATAWAY AND IS PERFORMING AN OPERATION. AN "ON LINE" LED IS ALSO PROVIDED TO INDICATE WHEN THE CONTROLLER IS ON LINE.

SIZE: CAMAC DOUBLE WIDTH MODULE

CONNECTORS: BRANCH, HUGHES WSS0132S00BN000 OR EQUIVALENT.
GRADED L, CANNON 2DB52P WITH D20418-2 LOCK.
AUXILIARY CONTROLLER BUS, AMP 1-87495-6

POWER: +6 VOLTS D.C. 1570MA.