

Supplement to CAMAC IEEE Standards Documents

Foreword

Several IEEE Standards are concerned with the CAMAC modular instrumentation and digital interface system defined in IEEE Std 583-1975, Standard Modular Instrumentation and Digital Interface System (CAMAC), and associated standards ANSI/IEEE Std 595-1976, ANSI/IEEE Std 596-1976, ANSI/IEEE Std 675-1979, ANSI/IEEE Std 683-1976, IEEE Std 726-1979 and *SH06437*, (Library of Congress No 76-39660). Since these standards are under continual review, clarifications, corrections and modifications are made from time to time. This supplement compiles all such material in a single document that is to be revised and reissued as necessary.

The report on which this standard is based (Department of Energy, Report DOE/EV-0009) was prepared by the NIM Committee (National Instrumentation Methods) of the US Department of Energy. Substantive modifications with respect to the standards involved were developed and agreed to by the NIM Committee of the United States Department of Energy and the ESONE Committee (European Standards on Nuclear Electronics) of European Laboratories.

This standard was reviewed and balloted by the Nuclear Instruments and Detectors Committee of the IEEE Nuclear and Plasma Sciences Society. Because of the broad applicability of the CAMAC system, this standard was submitted for review to liaison representatives of numerous societies and committees including the Communications Society, Computer Society, Industry Applications Society, Industrial Electronics and Control Instrumentation Group, Instrumentation and Measurement Group, and the Power Generation and Nuclear Power Engineering Committees of the Power Engineering Society.

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1. General

In this supplement, reference is made to page numbers in the IEEE Standards and Department of Energy (DOE) reports. In general, these page numbers are different from those in the corresponding EUR, ESONE and IEC documents.

2. Information and Mailing List

Those desiring information or who wish to be placed on the NIM-CAMAC mailing list so as to receive addenda and supplements issued by the NIM Committee, and to be kept current on NIM-CAMAC matters, should write to:

Louis Costrell, Chairman
NIM Committee
National Bureau of Standards
Washington, D.C. 20234

In Europe, information regarding CAMAC can be obtained from:

H. Meyer, ESONE Secretariat
Commission of the European Communities,
CGR-BCM
B-2440 GEEL, Belgium

3. Drawings

Reduced size copies of the CAMAC drawings are included in the reports. It is anticipated that these small scale drawings will be adequate for the many users and for those whose only CAMAC construction consists of building circuits into CAMAC plug-in units that have been produced elsewhere. However, large scale copies of some of the drawings will be useful to manufacturers of crates and plug-in units. Those desiring large scale drawings should write to the Chairman of the NIM Committee. The large scale drawings will be kept current with regard to corrections and modifications. Users are cautioned to ascertain that they are working with the latest revisions of all drawings. The CAMAC drawings that constitute part of the CAMAC reports are listed below:

Fig No in IEEE Std 583-1975	NIM Drawing No	Title	
—	NA-600	Drawing List	
1	ND-601	Unventilated Crate — Front View	
2	ND-602	Plan View of Lower Guides in Crate	
3	ND-603	Crate — Side View, Sec- tion	
4	ND-604	Plug-in Unit — Side and Rear Views	
5	ND-605	Dataway Connector	
6	ND-606	Ventilated Crate — Front View	
7	ND-607	Adaptor for NIM Units	
8	ND-608	Typical Printed Wiring Card	
12	ND-549	NIM-CAMAC Coaxial Connectors Type 50CM	
Fig No in IEEE Std 595-1976			
A2-3	NE-3297	SCC Type L-2 Block Diagram	
Fig No in IEEE Std 596-1976			
7	ND-609	Crate Controller Type A-1	

Fig No in
DOE/EV-
007 and
IEEE Std
675-1978

A1-1 ND-3416 CAMAC Crate Con-
troller Type A-2

4. Recent Changes

Recent changes involve IEEE Std 583-1975, IEEE Std 595-1976, IEEE Std 596-1976 and the corresponding sections of the IEEE CAMAC Book *SH06437*.

4.1 200V dc and 117V ac Buses. Assignment of Dataway lines and contacts for 200V dc and 117V ac cancelled effective January 1, 1978. The pertinent modifications of the CAMAC standards are as listed in sections 5 and 8.1 herein for:

Page 14, Table 1	} of IEEE Std 583-1975
Page 15, Table 2	
Page 16, Table 3	
Page 17, 4.4	
Page 40, Table 10	
Page 41, Section 8	
Page 66, Table C1	

Background information. 200V dc and 117V ac were previously nonmandatory voltages. These assignments have been cancelled in order to avoid hazardous voltages on the connectors. The Dataway lines involved are now designated *Reserved* lines.

4.2 Chamfer on Module Connector. A chamfer of 0.3 mm max × 0.3 mm max is permitted on the two vertical edges of the module edge connector. The pertinent modifications of the CAMAC standards are as listed in Sections 5 and 8.1 herein for:

Page 11, 4.2.2	} of IEEE Std 583-1975
Page 46, Fig 5	

Background information. This change was made to assist entry of the edge connector into the Dataway connector and in recognition of common manufacturing practices.

4.3 Current Standards for Dataway Signals. Language added to clarify the interpretation of the current standards for Dataway signals

in relation to multi-station addressing. The pertinent wording changes are as listed in sections 5 and 8.1 herein for:

Page 19, 5.1.1 } of IEEE Std 583-1975
Page 37, 7.1.2 }

4.4 Request Inhibit. A request inhibit pull-up is specified to be provided on the SGL encoder connector of the serial crate controller. The pertinent additions to IEEE Std 595-1976 are as listed in Section 6 herein for:

Page 7
Page 53, Table 14-1 } of IEEE Std 595-1976
Page 57
Page 76, Fig A2-3 }
Page 82, Index }

Background information. This change was made to permit auxiliary controllers described in IEEE Std 675-1979 to be used in conjunction with serial crate controllers.

4.5 Balanced Receiver. Recommendations added regarding input hysteresis on balanced receivers of serial drivers used on serial high-way. The pertinent wording changes are as given in Section 6 herein for page 37, 7.2.4 of IEEE Std 595-1976.

Background information. This change was made to minimize erroneous messages due to noise at the receiver inputs.

5. IEEE Std 583-1975 — Corrections and Modifications

Page 6 *The unmarked page preceding Page 7 Fig K5.4.3.5 should read: Table K5.4.3.5. Transfer this listing to bottom of preceding page.*

Page 11 4.2.2. *At the end of the Supplementary Information add:*

A chamfer of 0.3 mm max × 0.3 mm max is permitted on the two vertical edges of the connector (see 5.2, Section a-a of Fig 5).

Page 14 Table 1. *Near the bottom, under Additional Power Lines, delete:*

+200V dc	+200	1 Low current for indicators, etc.
117V ac (Line)	ACL	1
117V ac (Neutral)	ACN	1

At the bottom of the table add:
Reserved Undesignated 3

Page 15 Table 2. *Near the bottom*

Replace:	+200V dc	+200
with:	Reserved (C)*	—
Replace:	117V ac Line	ACL ANC 117V ac Neutral
with:	Reserved (A)*	— — Reserved (B)*

*Reserved (C) was previously assigned to +200V dc,
Reserved (A) to 117V ac Line and
Reserved (B) to 117V ac Neutral,
all non-mandatory voltages.

Effective 1 January 1978, these assignments were cancelled in order to avoid hazardous voltages on the connectors.

Page 16 Table 3. *Same as for Page 15, Table 2 — see above.*

Page 17 4.4. *Delete the last two sentences immediately above Supplementary Information on page 17.*

Page 19 5.1.1. *Add to the last sentence of this section: ; and the design of the modules should permit this.*

Page 21 Table 4. *For Codes F(8)-F(11): Function using the R or W lines should read: Functions not using the R or W lines.*

Page 22 5.4.1.1. *In the 1st block change 6.2.2 to read 6.2.3.*

Page 23 Fig K5.4.1A. Note 3. *The second sentence should be replaced with: See 5.4.1.3.*

Page 24 Note (2). *A15 should read: A(15).*

Page 25 5.4.1.3. *In the last paragraph, 4100C should read: 4100e.*

At the bottom page 25, 5.4.1.4 add: (See 5.4.3.3 and 5.4.3.4)

Page 28 5.4.3.4. *O=1 should read: Q=1.*

Page 29 5.5.2. *The first paragraph is mandatory and should be enclosed in a block.*

Page 34 7.1.1. *This paragraph is mandatory and should be enclosed in a block.*

7.1.2 *The first paragraph is mandatory and should be enclosed in a block.*

Page 35 *At the bottom of the page, NOTE should read: NOTE 1.*

Page 37 2.1.2 *Add a new paragraph as follows:*

There is no restriction on the number of modules that can be addressed simultaneously