

Synchro, Torque Receiver Transmitter, Type 31TRX6A

FSC 5990

NOTICE

This document has been taken directly from U.S. Military Specification MIL-S-20708/66E and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-S-20708/66E. Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this SAE technical document.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright 1999 Society of Automotive Engineers, Inc.  
All rights reserved.

Printed in U.S.A.

**QUESTIONS REGARDING THIS DOCUMENT:**  
**TO PLACE A DOCUMENT ORDER:**  
**SAE WEB ADDRESS:**

(724) 772-8510  
(724) 776-4970  
<http://www.sae.org>

**FAX: (724) 776-0243**  
**FAX: (724) 776-0790**

# SAE AS20708/66

This specification is approved for use by all Departments and Agencies of the Department of Defense. The requirements for acquiring the Synchros described herein shall consist of this specification and the latest issue of MIL-S-20708.

TABLE I. Requirements.

Requirement	Value	Unit	Tolerance
Frequency	60	Hz	$\pm 1\%$
Primary Voltage	115	volts	$\pm 1\%$
Primary Current	440.0	milliamperes	maximum
Primary Power	6.6	watts	maximum
Impedance:			
Z <sub>ss</sub>	24.0–33.0	ohms	min.–max.
Impedance Angle:			
Z <sub>ss</sub>	16.0–24.0	degrees	min.–max.
Transformation Ratio	0.783	— — —	$\pm 2\%$
Phase Shift (Lead)	6.5	degrees	maximum
Electrical Error	10.0	minutes	maximum
Receiver Error	36.0	minutes	maximum
Null Voltage:			
Total	170.0	millivolts	maximum
Fundamental	35.0	millivolts	maximum
Synchronizing Time:			
30° $\pm 2^\circ$	1.0	seconds	maximum
Synchronizing Time:			
177° $\pm 2^\circ$	2.0	seconds	maximum
Torque Gradient	0.40	ounce-inches per degree	minimum
Radial Play	0.0008	inches	maximum
End Play	0.0030	inches	$\pm 0.0020$
Temperature Rise	35.0	degrees (C)	maximum
Variation of Voltage (+10%) and Freq. (–5%)	9.4	watts	maximum

This unit shall not be subjected to the altitude requirements of MIL-S-20708.