SURFACE VEHICLE RECOMMENDED PRACTICE

J1939™-75 JUL2021

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(R) Application Layer - Generator Sets and Industrial

RATIONALE

This document has been updated to reflect the transition of this document's technical details into SAE J1939DA.

FOREWORD

The SAE J1939 communications network is defined using a collection of individual SAE J1939 documents based upon the layers of the open system interconnect (OSI) model for computer communications architecture. The SAE J1939-75 document defines the OSI application layer data parameters (SPs) and messages (PGs) for information predominantly associated with monitoring and control generators and driven equipment in electric power generation and industrial applications.

The SAE J1939 communications network is a high-speed ISO 11898-1 CAN-based communications network that supports real-time closed loop control functions, simple information exchanges, and diagnostic data exchanges between electronic control units (ECUs) physically distributed throughout the vehicle.

The SAE J1939 communications network is developed for use in heavy-duty environments and suitable for horizontally integrated vehicle industries. The SAE J1939 communications network is applicable for light-duty, medium-duty, and heavy-duty vehicles used on-road or off-road, and for appropriate stationary applications which use vehicle derived components (e.g., generator sets). Vehicles of interest include, but are not limited to, on-highway and off-highway trucks and their trailers, construction equipment, and agricultural equipment and implements. The physical layer aspects of SAE J1939 reflect its design goal for use in heavy-duty environments. Horizontally integrated vehicles involve the integration of different combinations of loose package components, such as engines and transmissions, that are sourced from many different component suppliers. The SAE J1939 common communication architecture strives to offer an open interconnect system that allows the ECUs associated with different component manufacturers to communicate with each other.

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https://www.sae.org/standards/content/J1939/75_202107

TABLE OF CONTENTS

1. SCOPE

SAE J1939-75 defines the set of data parameters (SPs) and messages (PGs) for information predominantly associated with monitoring and control generators and driven equipment in electric power generation and industrial applications.

The data parameters (SPs) and messages (PGs) previously published within this document are published in SAE J1939DA. Applications using the SAE J1939-75 document must refer to SAE J1939DA for the SAE J1939 parameters and messages for monitoring and controlling the power units, e.g., engines and turbines, that power the generators and driven industrial equipment.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J1939 Serial Control and Communications Heavy-Duty Vehicle Network - Top Level Document

SAE J1939DA Digital Annex of Serial Control and Communications Heavy-Duty Vehicle Network Data

SAE J1939-71 Vehicle Application Layer

3. DEFINITIONS

Refer to SAE J1939 and SAE J1939DA “SAE J1939DA Support Information” for applicable terms and definitions. Specifically, refer to sections “PGN 64999 - Generator and Utility Synchronization Parameters,” “PGN 65003 - Generator and Utility Bus Parameters,” and “PGN 65026 - Generator and Utility Parameters” in SAE J1939DA support information.

4. ABBREVIATIONS

Refer to SAE J1939 and SAE J1939DA “Abbreviations” worksheet for applicable abbreviations.

5. TECHNICAL REQUIREMENTS

The application layer provides a means for application processes to access the OSI environment. This layer contains management functions and generally useful mechanisms to support applications.

5.1 Parameters and Parameter Group Introduction

5.1.1 General Parameter Grouping

The parameter groups are organized according to generator, utility, and bus related parameter quantities. The generator PGs describe the generator output: voltage, current, frequency, and power. The utility PGs describe the input from a utility: also voltage, current, frequency, and power. The bus PGs describe the voltage and some other parameters on the bus, which is a point where multiple generator sets and utilities can be paralleled together to drive a load.

5.1.2 Generator and Utility Parameters and Parameter Groups

Refer to “PGN 65026 - Generator and Utility Parameters” in the SAE J1939DA support information in SAE J1939DA.

5.1.3 Bus Parameter Groups

Refer to “PGN 65003 - Generator and Utility Bus Parameters” in the SAE J1939DA support information in SAE J1939DA.

5.1.4 Synchronization Parameter Groups

Refer to “PGN 64999 - Generator and Utility Synchronization Parameters” in the SAE J1939DA support information in SAE J1939DA.

5.2 Parameter (SP) Definitions

Refer to SAE J1939DA for the current listing of SPs and their technical definition details.

5.3 Parameter Group (PG) Definitions

Refer to SAE J1939DA for the current listing of PGs and their technical definition details. Refer to the “Conventions for Parameter Placement Notation and Unspecified Bits in Message Definitions” section in SAE J1939-71 for details on interpreting data position and identifying unused bits in these PG definitions.

6. NOTES

6.1 Revision Indicator

A change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

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