

Technical Specification

Pilot function through a control pilot circuit using PWM (pulse width modulation) and a control pilot wire



This Australian Technical Specification was prepared by Committee EM-001, Electric Vehicle Operation. It was approved on behalf of the Council of Standards Australia on 4 June 2014. This Technical Specification was published on 30 June 2014.

The following are represented on Committee EM-001:

- Australasian Road Rescue Organisation
 - Australian Automobile Association
 - Australian Electric Vehicle Association
 - Australian Industry Group
 - Auto Skills Australia
 - ChargePoint
 - Consumers Federation of Australia
 - Curtin University of Technology
 - Department of Resources, Energy and Tourism
 - Electrical Regulatory Authorities Council
 - Energy Networks Association
 - Federal Chamber of Automotive Industries
 - Motor Trades Association of Australia
 - National Association of Testing Authorities Australia
 - Transport for NSW
 - Tritium
 - Victorian Automobile Chamber of Commerce
-

This Technical Specification was issued in draft form for comment as DR 102421.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Technical Specification through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

SA TS IEC 62763:2014

Technical Specification

Pilot function through a control pilot circuit using PWM (pulse width modulation) and a control pilot wire

First published as SA TS IEC 62763:2014.

COPYRIGHT

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 779 8

PREFACE

This Technical Specification was prepared by the Standards Australia Committee EM-001, Electric Vehicle Operation.

The objective of this Technical Specification is to describe the pilot wire function designed as a control mechanism for the supply of electrical energy to electric vehicles, principally for the charging of the traction batteries of the vehicle. It concerns all charging systems that ensure the pilot function with a pilot wire circuit with PWM for mode 2, mode 3 and mode 4 charging as described in the IEC 61851 series.

This Technical Specification is identical with, and has been reproduced from, IEC/TS 62763, Ed. 1.0 (2013), *Pilot function through a control pilot circuit using PWM (pulse width modulation) and a control pilot wire*.

As this Technical Specification is reproduced from an International Technical Specification, a full point substitutes for a comma when referring to a decimal marker.

In this document, the numbers in square brackets at the beginning of a sentence help to identify requirements.

None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

CONTENTS

	<i>Page</i>
1 Scope	7
2 Normative references	7
3 Control pilot circuit.....	7
3.1 General.....	7
3.2 Typical pilot electric equivalent circuit	8
3.3 Simplified pilot electric equivalent circuit	9
3.4 Other requirements	9
4 Requirements for parameters	10
5 Test procedures for immunity of EV supply equipment to wide tolerances on the pilot wire and the presence of high frequency data signals on the pilot wire	25
5.1 General.....	25
5.2 Constructional requirements of the EV simulator	25
5.3 Test procedure.....	25
5.4 Test list – Oscillator frequency and generator voltage test	26
5.5 Duty cycle test	27
5.6 Pulse wave shape test	27
5.7 Sequences diagnostic – normal charge cycle	27
5.8 Open earth wire test.....	29
5.9 Test of short circuit values of the voltage	29
5.10 Example of a test simulator of the vehicle (informative).....	29
5.11 Optional hysteresis test.....	31
5.11.1 General	31
5.11.2 Test sequence for hysteresis between states B and C	32
5.11.3 Test sequence for hysteresis between states C-E, D-E	32
5.11.4 Test sequence for hysteresis between states C-D.....	32
Figure 1 – Typical control pilot electric equivalent circuit.....	8
Figure 2 – Simplified control pilot electric equivalent circuit	9
Figure 3 – State machine diagram for typical control pilot	15
Figure 4 – State machine diagram for simplified control pilot.....	15
Figure 5 – Normal operation cycle.....	27
Figure 6 – Simplified control pilot cycle	28
Figure 7 – Optional charge cycle test.....	29
Figure 8 – Example of a test circuit (EV simulator).....	30
Table 1 – Maximum allowable carrier signal voltages on pilot wire	10
Table 2 – Control pilot circuit parameters (see Figures 1 and 2).....	10
Table 3 – Vehicle control pilot circuit values and parameters	11
Table 4 – System states detected by the EV supply equipment	12
Table 5 – State behavior	14
Table 6 – List of sequences	16

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-