# ISO 15031-4:2014-02 (E)

## Road vehicles - Communication between vehicle and external equipment for emissions-related diagnostics - Part 4: External test equipment

## Contents

Page


Foreword ..... iv

Introduction ..... v

1 Scope ..... 1

2 Normative references ..... 1

3 Terms, definitions, symbols, and abbreviated terms ..... 2
3.1 Terms and definitions ..... 2
3.2 Abbreviated terms ..... 2
3.3 Symbols ..... 3

4 Conventions ..... 3

5 Document overview ..... 3

6 Required functions of the external test equipment ..... 5

7 Communication protocols ..... 5

8 Connections to the vehicle ..... 5

9 Network access ..... 6
9.1 Automatic determination of communication interface ..... 6
9.2 Multiple tester communication ..... 7
9.3 Handling of no response from the vehicle ..... 8
9.4 Handling of multiple responses from the vehicle ..... 8
9.5 Message structure ..... 9
9.6 Diagnostic trouble codes monitoring ..... 9
9.7 Obtaining and displaying OBD emissions-related current data, freeze frame data, and test parameters and results ..... 9
9.8 Code clearing ..... 10
9.9 On-board diagnostic evaluations ..... 10
9.10 Use of StopCommunication service associated with ISO 14230-4 (optional) ..... 10

10 User interface ..... 10
10.1 Display ..... 10
10.2 User input ..... 11

11 Power requirements ..... 11
11.1 Vehicle battery voltage support ..... 11
11.2 Vehicle battery current consumption ..... 12

12 Electromagnetic compatibility (EMC) ..... 12

13 Conformance testing ..... 12

Annex A (informative) Recommended external test equipment common user interface displays ..... 13

Annex B (normative) Initialization and identification of ISO 14230-4/ISO 9141-2 protocols ..... 26

Bibliography ..... 31