

---

---

**Road vehicles — Tachograph  
systems —**

**Part 7:  
Parameters**

*Véhicules routiers — Systèmes tachygraphes —  
Partie 7: Paramètres*





**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword.....	vii
Introduction.....	viii
<b>1 Scope.....</b>	<b>1</b>
<b>2 Normative references.....</b>	<b>1</b>
<b>3 Terms and definitions.....</b>	<b>1</b>
<b>4 Symbols and abbreviated terms.....</b>	<b>1</b>
<b>5 Identifier specification for diagnostic services.....</b>	<b>2</b>
5.1 Data identifiers (DID).....	2
5.2 Routine identifiers (RID).....	6
<b>6 Parameters and values.....</b>	<b>7</b>
6.1 Transmitted parameter ranges.....	7
6.2 Structured parameters.....	7
6.3 Date and time parameter specifications.....	7
6.3.1 Day.....	7
6.3.2 Month.....	7
6.3.3 Year.....	7
6.4 Parameter specifications.....	7
6.4.1 Standard revision.....	7
6.4.2 VIN — VehicleIdentificationNumber.....	8
6.4.3 Trip group 1.....	8
6.4.4 System event.....	8
6.4.5 Handling information.....	8
6.4.6 Tachograph performance.....	9
6.4.7 Direction indicator.....	9
6.4.8 Requested illumination percentage.....	9
6.4.9 Switch backlight illumination brightness per cent.....	9
6.4.10 Switch indication illumination brightness per cent.....	9
6.4.11 RSDST — RemoteSessionDiagnosticSessionType.....	9
6.4.12 TVS — TachographVehicleSpeed.....	9
6.4.13 D1WS — Driver1WorkingState.....	10
6.4.14 D2WS — Driver2WorkingState.....	10
6.4.15 DR — DriveRecognize.....	10
6.4.16 D1TRS — Driver1TimeRelatedStates.....	11
6.4.17 D2TRS — Driver2TimeRelatedStates.....	11
6.4.18 DCD1 — DriverCardDriver1.....	12
6.4.19 DCD2 — DriverCardDriver2.....	12
6.4.20 OS — Overspeed.....	12
6.4.21 TD — TimeDate.....	13
6.4.22 RHM — ResetHeartbeatMessage.....	13
6.4.23 ALMO — AdjustLocalMinuteOffset.....	13
6.4.24 ALHO — AdjustLocalHourOffset.....	14
6.4.25 PLOTM — PriorityLevelOfTCO1Message.....	14
6.4.26 HRTVD — HighResolutionTotalVehicleDistance.....	14
6.4.27 HRTD — HighResolutionTripDistance.....	14
6.4.28 SCI — ServiceComponentIdentification.....	15
6.4.29 SDCTB — ServiceDelayCalendarTimeBased.....	15
6.4.30 D1I — Driver1Identification.....	16
6.4.31 D2I — Driver2Identification.....	16
6.4.32 KF — KFactor.....	16
6.4.33 SMR — SpeedMeasurementRange.....	17
6.4.34 NOTOPW — NumberOfTeethOnPhonicWheel.....	17
6.4.35 TOSS — TachographOutputShaftSpeed.....	17

6.4.36	LFTC — LFactorTyreCircumference	18
6.4.37	WVCF — WVehicleCharacteristicFactor	18
6.4.38	PPROOS — PulsesPerRevolutionOfOutputShaft	18
6.4.39	TRROTM — TransmissionRepetitionRateOfTCO1Message	19
6.4.40	TS — TyreSize	19
6.4.41	NCD — NextCalibrationDate	19
6.4.42	D1CDT — Driver1ContinuousDrivingTime	19
6.4.43	D2CDT — Driver2ContinuousDrivingTime	20
6.4.44	D1CBT — Driver1CumulativeBreakTime	20
6.4.45	D2CBT — Driver2CumulativeBreakTime	20
6.4.46	D1CDOSA — Driver1CurrentDurationOfSelectedActivity	21
6.4.47	D2CDOSA — Driver2CurrentDurationOfSelectedActivity	21
6.4.48	SA — SpeedAuthorised	21
6.4.49	TCS1 — TachographCardSlot1	22
6.4.50	TCS2 — TachographCardSlot2	22
6.4.51	D1N — Driver1Name	22
6.4.52	D2N — Driver2Name	23
6.4.53	OOSC — OutOfScopeCondition	23
6.4.54	MOD — ModeOfOperation	24
6.4.55	D1CDTPACW — Driver1CumulatedDrivingTimePreviousAndCurrentWeek	24
6.4.56	D2CDTPACW — Driver2CumulatedDrivingTimePreviousAndCurrentWeek	24
6.4.57	RTSP — RealTimeSpeedPulses	25
6.4.58	ES — EngineSpeed	25
6.4.59	CIO — CalibrationInputOutput	25
6.4.60	SJW — SynchronizationJumpWidth	26
6.4.61	SP — SamplePoint	27
6.4.62	TOMED — TimeOutMessageErrorDelay	27
6.4.63	EMII — ErrorManagementInitialisationInhibition	27
6.4.64	RMS — RegisteringMemberState	28
6.4.65	VRN — VehicleRegistrationNumber	28
6.4.66	VRD — VehicleRegistrationDate	28
6.4.67	D1PL — Driver1PreferredLanguage	29
6.4.68	D2PL — Driver2PreferredLanguage	29
6.4.69	DC1DTP — DriverCard1DownloadTimePeriod	29
6.4.70	DC2DTP — DriverCard2DownloadTimePeriod	30
6.4.71	TDTP — TachographDownloadTimePeriod	30
6.4.72	DHRPWT — DriversHoursRulesPreWarningTimeDelay	30
6.4.73	DCEWTD — DriverCardExpiryWarningTimeDelay	31
6.4.74	NDC1DWTD — NextDriverCard1DownloadWarningTimeDelay	31
6.4.75	NDC2DWTD — NextDriverCard2DownloadWarningTimeDelay	31
6.4.76	NTDWTD — NextTachographDownloadWarningTimeDelay	32
6.4.77	NCWTD — NextCalibrationWarningTimeDelay	32
6.4.78	D1EOLDRP — Driver1EndOfLastDailyRestPeriod	32
6.4.79	D2EOLDRP — Driver2EndOfLastDailyRestPeriod	33
6.4.80	D1EOLWRP — Driver1EndOfLastWeeklyRestPeriod	33
6.4.81	D2EOLWRP — Driver2EndOfLastWeeklyRestPeriod	33
6.4.82	D1EOSLWRP — Driver1EndOfSecondLastWeeklyRestPeriod	33
6.4.83	D2EOSLWRP — Driver2EndOfSecondLastWeeklyRestPeriod	34
6.4.84	D1CDDT — Driver1CurrentDailyDrivingTime	34
6.4.85	D2CDDT — Driver2CurrentDailyDrivingTime	34
6.4.86	D1CWDT — Driver1CurrentWeeklyDrivingTime	35
6.4.87	D2CWDT — Driver2CurrentWeeklyDrivingTime	35
6.4.88	D1TLUNDRP — Driver1TimeLeftUntilNewDailyRestPeriod	35
6.4.89	D2TLUNDRP — Driver2TimeLeftUntilNewDailyRestPeriod	35
6.4.90	D1CED — Driver1CardExpiryDate	36
6.4.91	D2CED — Driver2CardExpiryDate	36
6.4.92	D1CNMDD — Driver1CardNextMandatoryDownloadDate	36
6.4.93	D2CNMDD — Driver2CardNextMandatoryDownloadDate	37

6.4.94	TNMDD — TachographNextMandatoryDownloadDate	37
6.4.95	D1TLUNWRP — Driver1TimeLeftUntilNewWeeklyRestPeriod	37
6.4.96	D2TLUNWRP — Driver2TimeLeftUntilNewWeeklyRestPeriod	38
6.4.97	D1NOT9HDDTE — Driver1NumberOfTimes9hDailyDrivingTimesExceeded	38
6.4.98	D2NOT9HDDTE — Driver2NumberOfTimes9hDailyDrivingTimesExceeded	38
6.4.99	D1CURT — Driver1CumulativeUninterruptedRestTime	39
6.4.100	D2CURT — Driver2CumulativeUninterruptedRestTime	39
6.4.101	D1MDR — Driver1MinimumDailyRest	39
6.4.102	D2MDR — Driver2MinimumDailyRest	39
6.4.103	D1MWR — Driver1MinimumWeeklyRest	40
6.4.104	D2MWR — Driver2MinimumWeeklyRest	40
6.4.105	D1MDP — Driver1MaximumDailyPeriod	40
6.4.106	D2MDP — Driver2MaximumDailyPeriod	41
6.4.107	D1MDDT — Driver1MaximumDailyDrivingTime	41
6.4.108	D2MDDT — Driver2MaximumDailyDrivingTime	41
6.4.109	D1NOURDRP — Driver1NumberOfUsedReducedDailyRestPeriods	42
6.4.110	D2NOURDRP — Driver2NumberOfUsedReducedDailyRestPeriods	42
6.4.111	D1RCDT — Driver1RemainingCurrentDrivingTime	42
6.4.112	D2RCDT — Driver2RemainingCurrentDrivingTime	43
6.4.113	D1RDTOCS — Driver1RemainingDrivingTimeOnCurrentShift	43
6.4.114	D2RDTOCS — Driver2RemainingDrivingTimeOnCurrentShift	43
6.4.115	D1RDTOCW — Driver1RemainingDrivingTimeOfCurrentWeek	43
6.4.116	D2RDTOCW — Driver2RemainingDrivingTimeOfCurrentWeek	44
6.4.117	D1R2WDT — Driver1Remaining2WeeksDrivingTime	44
6.4.118	D2R2WDT — Driver2Remaining2WeeksDrivingTime	44
6.4.119	D1TLUNDP — Driver1TimeLeftUntilNextDrivingPeriod	45
6.4.120	D2TLUNDP — Driver2TimeLeftUntilNextDrivingPeriod	45
6.4.121	D1DONDP — Driver1DurationOfNextDrivingPeriod	45
6.4.122	D2DONDP — Driver2DurationOfNextDrivingPeriod	46
6.4.123	D1DONBR — Driver1DurationOfNextBreakRest	46
6.4.124	D2DONBR — Driver2DurationOfNextBreakRest	46
6.4.125	D1RTOCBR — Driver1RemainingTimeOfCurrentBreakRest	46
6.4.126	D2RTOCBR — Driver2RemainingTimeOfCurrentBreakRest	47
6.4.127	D1RTUNBOR — Driver1RemainingTimeUntilNextBreakOrRest	47
6.4.128	D2RTUNBOR — Driver2RemainingTimeUntilNextBreakOrRest	47
6.4.129	D1OCITLW — Driver1OpenCompensationInTheLastWeek	48
6.4.130	D2OCITLW — Driver2OpenCompensationInTheLastWeek	48
6.4.131	D1OCIWBL — Driver1OpenCompensationInWeekBeforeLast	48
6.4.132	D2OCIWBL — Driver2OpenCompensationInWeekBeforeLast	49
6.4.133	D1OCI2WBL — Driver1OpenCompensationIn2ndWeekBeforeLast	49
6.4.134	D2OCI2WBL — Driver2OpenCompensationIn2ndWeekBeforeLast	49
6.4.135	D1AI — Driver1AdditionalInformation	49
6.4.136	D2AI — Driver2AdditionalInformation	51
6.4.137	MSSN - MotionSensorSerialNumber	51
6.4.138	RCFSN - RemoteCommunicationFacilitySerialNumber	51
6.4.139	EGNSSFSN - ExternalGNSSFacilitySerialNumber	51
6.4.140	STSSN - SmartTachographSealsSerialNumber	52
6.4.141	VSN - VuSerialNumber	52
6.4.142	BDLT - ByDefaultLoadType	52
6.4.143	TCG1S - TachographCardsGen1Suppression	52
6.4.144	VP - VehiclePosition	53
6.4.145	CC - CalibrationCountry	53
6.4.146	D1TLLUO - Driver1TimeLastLoadUnloadOperation	53
6.4.147	D2TLLUO - Driver2TimeLastLoadUnloadOperation	54
6.4.148	DCOPD - DriversConsentOnPrivateData	54
6.4.149	FTS — FerryTrainStatus	54
<b>7</b>	<b>DTCs for tachograph system</b>	<b>55</b>

**Bibliography** .....56

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*.

This third edition cancels and replaces the second edition (ISO 16844-7:2015), which has been technically revised.

The main changes are as follows:

- part 5 of this series (ISO 16844-5) has been removed due to its technical irrelevance,
- correction of the typos and mistakes in the text,
- adoption of the content according to the new version of the ISO guidelines,
- adoption of the content according to the new technical requirements,
- alignment of the content regarding to the referred standards.

A list of all parts in the ISO 16844 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

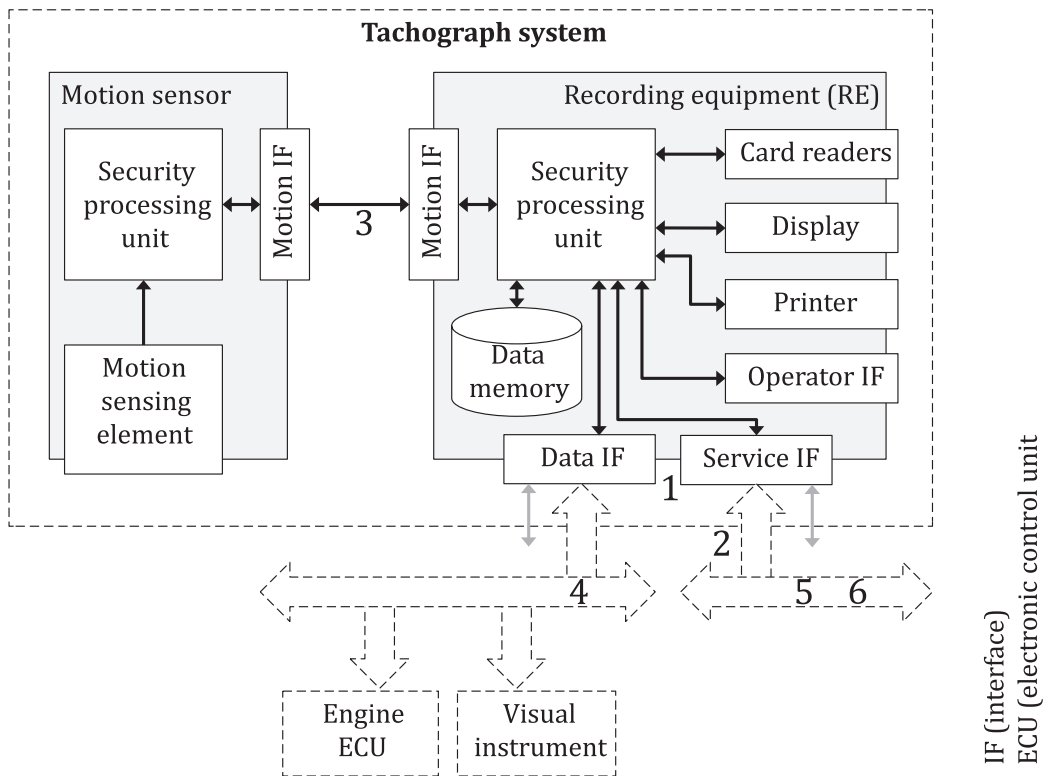
## Introduction

This document supports and facilitates the communication between electronic control units (ECUs) and a digital tachograph.

The digital tachograph concept is based upon a recording equipment storing data, related to the activities of the various drivers driving the vehicle, on which it is installed.

During the normal operational status of the recording equipment, data stored in its memory are accessible to different entities (drivers, authorities, workshops, transport companies) in different ways (displayed on a screen, printed by a printing device, downloaded to an external device). Access to stored data are controlled by a smart card inserted in the tachograph.

A typical tachograph system is shown in [Figure 1](#).



### Key

- |  |  |
|--|--|
| <p><b>1</b> data and service IF connector standardized in ISO 16844-1</p> <p><b>2</b> electrical data and service IF requirements standardized in ISO 16844-2</p> <p><b>3</b> communication interface between motion sensor and RE standardized in ISO 16844-3</p> | <p><b>4</b> CAN-based data IF including parameter groups standardized in ISO 16844-4</p> <p><b>5</b> optional CAN-based service IF standardized in ISO 16844-6</p> <p><b>6</b> data identifier (DID) specification for the optional service IF standardized in ISO 16844-7</p> |
|--|--|

**Figure 1 — Typical ISO 16844 conformant tachograph system**



# Road vehicles — Tachograph systems —

## Part 7: Parameters

### 1 Scope

This document specifies the parameters used on the service interface of the recording equipment. Some of them are specified in detail in this document, while others are given in the ISO 14299 series.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 639-1, *Codes for the representation of names of languages — Part 1: Alpha-2 code*

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

ISO 14229-1, *Road vehicles — Unified diagnostic services (UDS) — Part 1: Application layer*

ISO 15031-6, *Road vehicles — Communication between vehicle and external equipment for emissions-related diagnostics — Part 6: Diagnostic trouble code definitions*

ISO 16844-1, *Road vehicles — Tachograph systems — Part 1: Electromechanical components*

ISO 16844-4, *Road vehicles — Tachograph systems — Part 4: Display unit communication interface*

SAE J1939-71, *Vehicle Application Layer*

SAE J1939DA, *Digital Annex*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16844-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1

##### **member state**

member of some supranational or international body

EXAMPLE European Union.

### 4 Symbols and abbreviated terms

For the purposes of this document, the following symbols and abbreviated terms apply.