

# SVENSK STANDARD

## SS-ISO 13044-1:2012



Fastställt/Approved: 2012-06-18  
Publicerad/Published: 2012-08-20  
Utgåva/Edition: 1  
Språk/Language: engelska/English  
ICS: 43.040.70

---

### **Vägfordon – Helt automatiska kopplingsystem 24 V (FACS) för tunga lastfordon och släp – Del 1: Allmänna krav och definitioner (ISO 13044-1:2012, IDT)**

### **Road vehicles – 24 V fully automatic coupling systems (FACS) for heavy commercial vehicle combinations – Part 1: General requirements and definitions (ISO 13044-1:2012, IDT)**

This preview is downloaded from [www.sis.se](http://www.sis.se). Buy the entire standard via <https://www.sis.se/std-86942>

# Standarder får världen att fungera

*SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.*

## Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

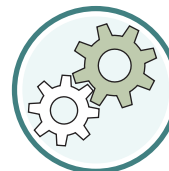
## Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

## Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

**Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på [www.sis.se](http://www.sis.se) eller ta kontakt med oss på tel 08-555 523 00.**



# Standards make the world go round

*SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.*

## Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

## Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

## Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

**If you want to know more about SIS, or how standards can streamline your organisation, please visit [www.sis.se](http://www.sis.se) or contact us on phone +46 (0)8-555 523 00**



Den internationella standarden ISO 13044-1:2012 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 13044-1:2012.

The International Standard ISO 13044-1:2012 has the status of a Swedish Standard. This document contains the official version of ISO 13044-1:2012.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

*Uppllysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna uppllysningar om svensk och utländsk standard.*

*Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.*

Denna standard är framtagen av kommittén för Sammankoppling av fordon samt utvändiga anordningar, SIS/TK 234.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](http://www.sis.se) - där hittar du mer information.



## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 13044-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 15, *Interchangeability of components of commercial vehicles and buses*.

ISO 13044 consists of the following parts, under the general title *Road vehicles — 24 V fully automatic coupling systems (FACS) for heavy commercial vehicle combinations*:

- *Part 1: General requirements and definitions*
- *Part 2: Electrical and pneumatic interface for 50 mm fifth wheel couplings*

## SS-ISO 13044-1:2012 (E)

### Introduction

This part of ISO 13044 specifies general requirements and definitions to ensure the safe operation of fully automated coupling systems (FACS).

The introduction of FACS has brought new perspectives and needs into the area of trailer couplings. This has made evident the need for a resilient structure among trailer coupling classes. The ISO 13044 series is intended to facilitate interaction between International Standards and relevant regulations.

The drivers for the introduction of FACS are the following:

- personnel injury hazards associated with coupling and uncoupling operations;
- system availability and operating cost;
- convenience.

It is foreseen that interfaces for media other than those included in this part of ISO 13044 will be entering the area of trailer coupling in the future. Examples of those other media are hydraulic and radio frequency transmissions. Definitions and general requirements for those interfaces will be included in later editions of this part of ISO 13044.

# Road vehicles — 24 V fully automatic coupling systems (FACS) for heavy commercial vehicle combinations —

## Part 1: General requirements and definitions

### 1 Scope

This part of ISO 13044 defines coupling classes, different levels of automation and the general limitations in terms of topology and procedures with respect to electrical and pneumatic connections. This part of ISO 13044 provides a framework under which detailed connector designs applicable for fifth wheel or drawbar couplings may be standardized. The framework refers to vehicle combinations that include trailers with a technical maximum mass in excess of 3 500 kg.

### 2 Normative references

The following referenced documents are indispensable for the application 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 4091, *Road vehicles — Connectors for the electrical connection of towing vehicles and towed vehicles — Definitions, tests and requirements*

ISO 7638-1, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — Part 1: Connectors for braking systems and running gear of vehicles with 24 V nominal supply voltage*

ISO 7638-2, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — Part 2: Connectors for braking systems and running gear of vehicles with 12 V nominal supply voltage*

ISO 11992-1, *Road vehicles — Interchange of digital information on electrical connections between towing and towed vehicles — Part 1: Physical and data-link layers*

ISO 11992-2, *Road vehicles — Interchange of digital information on electrical connections between towing and towed vehicles — Part 2: Application layer for brakes and running gear*

ISO 11992-3, *Road vehicles — Interchange of digital information on electrical connections between towing and towed vehicles — Part 3: Application layer for equipment other than brakes and running gear*

ISO 12098, *Road vehicles — Connectors for the electrical connection of towing and towed vehicles — 15-pole connector for vehicles with 24 V nominal supply voltage*

### 3 Terms and definitions

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

#### 3.1 Operation modes

##### 3.1.1

##### **mechanical coupling and uncoupling**

physical engagement and disengagement of the towing vehicle and trailer

## SS-ISO 13044-1:2012 (E)

### 3.1.1.1

#### **manual mechanical coupling**

manual procedure required to safeguard the completion of the mechanical engagement

### 3.1.1.2

#### **manual mechanical uncoupling**

manual procedure required to safeguard the completion of the mechanical disengagement

### 3.1.1.3

#### **remote mechanical coupling**

engagement procedure completed by indirect operation of a remote device requiring additional action from the operator

### 3.1.1.4

#### **remote mechanical uncoupling**

disengagement procedure completed by indirect operation of a remote device requiring additional action from the operator

### 3.1.1.5

#### **automatic mechanical coupling**

procedure performed by reversing the towing vehicle against the trailer in order to completely engage the coupling, to lock it automatically and to indicate proper engagement of the locking devices without any external intervention

### 3.1.1.6

#### **automatic mechanical uncoupling**

disengagement of the locking mechanism performed as part of an automatic process, in order to separate the two vehicles

### 3.1.2

#### **electrical connection and disconnection**

physical engagement and disengagement of the electrical interfaces between towing vehicle and trailer

#### 3.1.2.1

##### **manual electrical connection**

manual procedure required to safeguard the completion of the electrical engagement

#### 3.1.2.2

##### **manual electrical disconnection**

manual procedure required to safeguard the completion of the electrical disengagement

#### 3.1.2.3

##### **remote electrical connection**

electrical connection procedure completed by indirect operation of a remote device requiring additional action from the operator

#### 3.1.2.4

##### **remote electrical disconnection**

electrical disconnection procedure completed by indirect operation of a remote device requiring additional action from the operator

#### 3.1.2.5

##### **automatic electrical connection**

electrical connection procedure performed as part of an automatic process

#### 3.1.2.6

##### **automatic electrical disconnection**

electrical disconnection procedure performed by disengaging the connectors as part of an automatic process

### 3.1.3

#### **pneumatic connection and disconnection**

physical engagement and disengagement of the pneumatic interfaces between the towing vehicle and the trailer