



GS1 Standards

GS1 DataBar in the meat industry

Compact barcode with additional information for tracking and variable measured trade items

GS1 Germany:

Your dedicated partner for efficient business processes

GS1 Germany, based in Cologne, is a commercial organisation belonging to the international network of GS1 and is the second largest of more than 110 GS1 national organisations. The Markenverband (Trade Mark Association) and the EHI Retail Institute are equal shareholders in GS1 Germany.

GS1 Germany supports companies from all sectors in the adoption and practical implementation of modern communication and process standards, in order to improve the efficiency of their business processes. Within Germany, the company is responsible for the maintenance and continued development of the GS1 article identification system GTIN (Global Trade Item Number) for globally unique identification, which in turn serves as the basis for barcodes. Moreover, GS1 Germany supports the application of new technologies for the fully automatic object identification (EPC/RFID—Electronic Product Code/Radio Frequency Identification) and standardised electronic data interchange (EDI). GS1 also offers customer oriented solutions (ECR—Efficient Consumer Response) as well as the consideration of trends such as mobile commerce, multi-channel as well as sustainability within development work.

Introduction

Long runner at the point of sale (POS): The EAN-13 barcode established itself decades ago as the standard for payment systems in the retail industry. Today, most products are scanned at the checkout using the machine-readable barcode. It accelerates the checkout procedure, reduces customer waiting-times and enables automated processes in the store. However, in the process chain of the meat and sausage industry the EAN-13 barcode is stretched to its limits. On the one hand, companies face the challenge of having to provide more and more product information and encode it in the barcode, on the other hand, goods with variable weights have to be unambiguously traceable to the POS.

The solution is called GS1 DataBar Expanded: In 2014 the GS1 DataBar Expanded was released as an open standard for the POS. Manufacturers can furnish their products with important additional information, which is scannable at the checkout and can be processed within the merchandise management system.

This guideline gives an overview of the fields of application of the GS1 DataBar Expanded and shows the advantages of the small, efficient barcode for the identification of equalised and variable measured trade items.

Versatile, compact and high-performance

GS1 DataBar Expanded: All-rounder for equalised and variable measured trade items

Consumer units: Equalised or variable

An equalised trade unit is a unit which is pre-defined according to certain characteristics (e.g. size, weight, content, packaging) and is always manufactured in the same version and composition. Here, the GTIN is normally encoded in EAN-13 barcode. If additional product information is to be provided, the GS1 DataBar Expanded could contain the GTIN and information such as the batch number.

A variable measured trade item is also always manufactured in the same version with pre-defined characteristics (such as product type, content, packaging). However, it varies in at least one characteristic, e.g. the weight. This characteristic changes with every package, while the other characteristics remain the same. The complete description of a variable measured trade item unit is achieved with the GTIN and the information about the variable data.

The GS1 DataBar Expanded is the first available solution for the transnational goods traffic of variable final customer units. The new barcode variant enables the encoding of additional data required for article identification. As well as the Global Trade Item Number (GTIN), manufacturers or packers can allocate additional information such as quantity, net weight or package price in a machine-readable way. This additional information about variable measured goods facilitates both, the checkout process and processes such as procurement and inventory management.

Furthermore, the GS1 DataBar Expanded offers the possibility to encode tracking data—such as batch number and best before date—in the barcode. The GS1 DataBar Expanded is always the right choice, if—as well as the GTIN – additional information should be available on the consumer unit.

Numerous test applications have already proven the special effects of utilisation of the GS1 DataBar Expanded for products within the meat and sausage sector.

Efficient use at the POS

The GS1 DataBar Expanded is a powerful linear barcode, which is applicable at the POS with minimum effort. Most commercially available scanners, as well as handhelds, can either already process the GS1 DataBar Expanded or they only need a software-update to do so. All processing systems such as scanner check-outs or scanner scales should at least be able to process the GTIN from the new barcode. The GS1 DataBar Expanded is especially characterised by the following features:

- **High encoding capacity:** While the EAN-13 barcode solely encodes the GTIN, further variable information, which is relevant for processes in retail, can be represented in the GS1 DataBar Expanded.
- **High encoding density:** The GS1 DataBar Expanded requires little space. It remains flawlessly readable even in a very compact form and does not require a higher printing quality than the EAN-13 barcode.
- **Direction and position independent readability:** The GS1 DataBar Expanded can be read without any problems, this is prerequisite for a trouble-free and efficient use at the POS.

Check, whether your scanner has the capacity to scan the GS1 DataBar. To do so, you can order a test card from GS1 Germany. For customers of GS1 Complete, this service is free.

Flexible use

The GS1 DataBar Expanded is available in two different variants: If the linear barcode symbol is too broad for the planned application, the variant “stacked” can be used. In this variant, the information is stacked in rows on top of each other. For meat and sausage products the GS1 DataBar Expanded can be used in both the linear and stacked form. The code can contain up to 74 numeric and 41 alphanumeric characters. The GS1 application identifier concept—known, among others, from the GS1-128 standard—ensures the immediate further automatic processing of data.

Decisive advantage of the GS1 DataBar Expanded: It can display a lot of information in a small space and remains perfectly readable despite its small dimensions.



GTIN and batch number: Even with the encoding of the GTIN and the batch number, the GS1 DataBar Expanded needs approximately the same space (orange box) as an EAN-13 barcode (grey area), which solely contains the GTIN.

From the batch to the weight

Data contents in the GS1 DataBar Expanded

Customers of GS1 Complete can find technical specifications regarding the GS1 DataBar in the manual "GS1 DataBar, GS1 DataMatrix, GS1 QR: Leistungsstarke GS1 Codes für besondere Anforderungen" at www.gs1-germany.de.

The Global Trade Item Number GTIN, variable measured characteristics, best before dates, batch and serial numbers: A wide range of information can be encoded in a barcode. Here, so-called application identifiers play an important role: They signal which information is to follow and determine which format is to be used. In the GS1 DataBar Expanded the same GS1 application identifiers are used as in the GS1-128 barcode and the GS1 DataMatrix for example.

Common application identifiers (AI) and their usage:

| AI | Data content | Equalised goods | Variable goods |
|------|---|-----------------|----------------|
| 01 | Global Trade Item Number (GTIN) | mandatory | mandatory |
| 15 | Best before date | optional | optional |
| 17 | Expiration date* | optional | optional |
| 10 | Lot/batch number | optional | optional |
| 21 | Serial number | optional | optional |
| 30 | Count of items (Variable measured trade items) | – | mandatory** |
| 310x | Net weight, kilogram (Variable measure trade items) | – | mandatory** |
| 392x | Applicable amount payable, single monetary area (Variable measure trade item) | – | mandatory** |

* Expiration date: For products, which are particularly perishable (e.g. minced meat, poultry, offal), the expiration date (AI 17) is used instead of the best before date (AI 15).

** For goods with variable measure an additional Application Identifier has to be used for the GTIN. For the meat sector, one of the above mentioned Application Identifier is recommended for pieces, weight or price.

The representation in plain text of the information contained in the GS1 DataBar symbol should—whenever possible—be represented below the symbol. The line of plain text should be in a good-readable font and it should be attached in a way that an unambiguous relation to the related symbol is ensured.

GS1 DataBar Expanded for equalised goods

Sample symbols with variants for the line of plain text:



The short designation should be indicated in the English language. In the case of contrary conditions, e.g. for the German market, the German short designation MHD (Mindesthaltbarkeitsdatum) for best before date can be used.

GS1 DataBar Expanded for variable measured trade items

GS1 DataBar Expanded as stacked and lineal sample symbol:



Small barcode— the next big thing

A benefit for the entire sector: Trade and industry profit equally from the introduction of the GS1 DataBar Expanded. The information this barcode is able to deliver facilitates handling at the POS and closes the gap between logistics and checkout. The use of the GS1 DataBar Expanded enables the seamless tracking of meat and sausage products—including batch number—along the entire supply chain.

The gathering of additional information, which trade needs for variable measured meat and sausage products in order to calculate the price at the retail checkout, is greatly simplified. With the conventional EAN-13 barcode, trade had to resort to national article catalogues, the national standard article number SAN-4, or individually agreed business-intern article numbers to access additional information. With the GS1 DataBar Expanded, this error-prone solution is a thing of the past: All required information is accessible directly by way of the barcode on the product or packaging. Also the manufacturer of variable measured trade items can be identified unambiguously via the company prefix of his GLN with the GS1 DataBar Expanded.

GS1 DataBar Expanded

- enables the unambiguous and extended marking of fresh produce,
- makes room for best before dates or batch numbers,
- enables more transparency along the supply chain through to the consumer,
- supports the sales management, especially with variable measured trade items,
- makes procurement more efficient,
- enables rapid data acquisition of additional data at the POS,
- helps, by the connection of batch number and customer data, to fulfil the requirements of the advanced traceability of animal-based foods (according to the EU Regulation No. 178/2002 in connection with the implementing Regulation No. 931/2011),
- identifies the manufacturer of variable articles,
- corresponds to international standards,
- enables the traceability at individual product level,
- facilitates product recalls at individual product level and
- introduces operational saving potential in the long term.

Advantages for retailers:

- Prices for variable measured trade items are determined automatically per scan at the retail checkout. The manual input of count, weight or price per kilo is not needed.
- Additional information such as batch or best before date can be read in and saved directly at the POS: This facilitates possible recalls of goods considerably.
- Best before dates or rather expiration dates are machine-readable—in this way the proportion of spoiled or expired goods can be reduced.
- Variable measured goods can also be identified unambiguously and thus traced back end to end.
- Identical products from various suppliers are differentiated unambiguously when sold parallel at the retail checkout.

Advantages for manufacturers:

- Products can be marked independent of the target country and no longer have to be packaged customer specifically.
- Manufacturers can differentiate their own products clearly from those of their competitors and position them.
- Relevant additional information can be encoded in the GS1 DataBar Expanded.
- The prerequisites for product traceability and a targeted recall of goods are improved.
- The parallel management of the SAN-4-Number for the barcode on the self-service label and the GTIN in the central article master data pool of the Global Data Synchronisation Network (GDSN) is no longer necessary.

EPCIS with the GS1 DataBar Expanded

If—as well as the GTIN—the batch or serial number is encoded in the GS1 DataBar Expanded, the GS1 DataBar Expanded constitutes, in conjunction with the electronic data exchange via EPCIS (EPC Information Services), the ideal basis for a complete and efficient traceability. Here, all relevant process steps (e.g. from slaughter across the various processing stages to goods delivery) can be recorded electronically and made available to any own IT-system and that of the respective partner in the supply chain. This is no longer a future issue as—since the provision of fTRACE, GS1 Germany's traceability platform—it is being applied by more and more companies in the meat sector.

This applies to retailers:

As soon as retailers are able to process GS1 DataBar Expanded, they can begin using it—within their own sphere of competence, e.g. with private labels, or also on a bilateral level with suppliers.

This applies to manufacturers:

As soon as retail customers can read the GS1 DataBar Expanded, all GS1 DataBar manifestations can be used according to the GS1 application recommendations. In any case, the GTIN can be read out as minimum information from the GS1 DataBar Expanded.

The five steps to success

The meat sector management from GS1 Germany will be happy to support you!



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Make the GS1 DataBar Expanded your priority—and utilise the potential of the new standard for your company. In five steps you will be ready to use the GS1 DataBar Expanded at the POS:

1. Inform your colleges about the new code.
2. Check your scanner for GS1 DataBar capacity. This is made easy with the test card you can order from GS1 Germany.
3. Prepare your printing systems for the new barcode.
4. Adapt your software to the GS1 Application Identifier concept, in order to be able to provide or process further information.
5. Consult your business partners as to how and when the GS1 DataBar Expanded should be attached to the label.

Get started now with GS1 Complete **GS1COMPLETE**

With the GS1 Complete service package the user has all GS1 Standards such as the GS1 DataBar at his disposal. GS1 Complete is an admission ticket to the GS1 System and to the use of the GTIN.

What can we do for you?

Have we aroused your interest? Does a concrete demand require rapid action – or would you just like to obtain non-binding information about the topics from our portfolio? Contact us. We look forward to talking to you personally.

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