en 01-2018/03   50138349

12 V DC

BARCODE   2D-CODE

- Hand-held scanner for directly-marked codes (needle print or laser marking on flat surfaces)
- Radio transmission
- Very sturdy, ergonomic housing
- Robust trigger button
- Built-in decoder
- Display for successful reading with LED, signal tone and vibration
- RS 232 or USB interface
- Operating temperature from -20 to +50 °C
- Protection class IP 65 / IP 67

CE   c(UL)us LISTED

IP 65   IP 67

PAL_HS6678DPM_en_50138349.fm
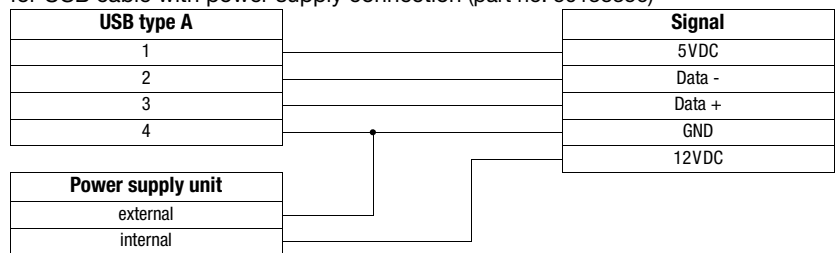
We reserve the right to make changes •

Accessories
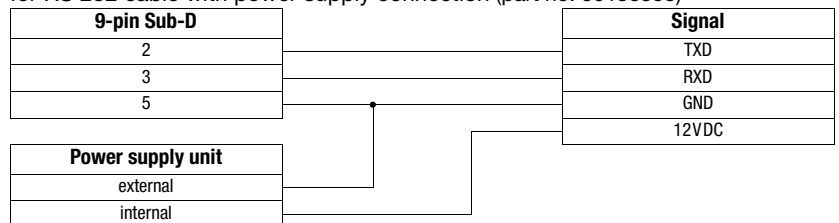
(available separately)

- **RS 232 cable with power supply connection**
  Part no. 50138358
- **USB cable with power supply connection**
  Part no. 50138356
- **Power supply unit (100 … 240VAC)**
  Part no. 50138350
- **Base HS 6678** (charging/transfer station)
  Part no. 50138134

Electrical connection

for USB cable with power supply connection (part no. 50138356)

USB type A	Signal
1	5VDC
2	Data -
3	Data +
4	GND
	12VDC

Power supply unit	
external	
internal	

for RS 232 cable with power supply connection (part no. 50138358)

9-pin Sub-D	Signal
2	TXD
3	RXD
5	GND
	12VDC

Power supply unit	
external	
internal	

Technical Data

Electrical data	HS 6678 DPM	Base HS 6678
Operating voltage U_B		4.5 … 12.6VDC
Current consumption		max. 915mA @ 5VDC
Battery	Li-Ion 3200mAh / 3.6V	
Charging time	4.5h with external power supply unit	

Interfaces
Interface type   RS 232, PS/2 and USB
Trigger   via button
Radio transmission   Bluetooth V4.0, class 1, serial port and HID profiles
Operating range   max. 100m (adjustable), default: 10m (depending on environment)

Types of codes
Bar codes   2/5 Interleaved, Code 39, Code 128, Code 93, Codabar, UPC/EAN, GS1 Databar
2D-codes   Data Matrix codes ECC 200, Aztec, PDF417, MicroPDF, QR Code

Optical data
Optical system   Imager 1280x960
Light source   alignment aid: 655nm laser diode, laser class 2 (IEC 60825-1:2014)
      direct illumination element: 2 LEDs warm white
      diffuse illumination element: LED ring red (634nm)
Reading distance   25 … 147mm (UPC/EAN 13, 100% or 0.33mm)

Mechanical data	HS 6678 DPM	Base HS 6678
Weight	402g	340g (without cable)
Dimensions	185x77x143mm	100x229x83mm

Environmental data		
Ambient temperature (operation)	-20°C … +50°C	-20°C … +50°C
Ambient temp. (storage)	-40°C … +70°C	-40°C … +70°C
Ambient temperature (load)	0°C … +40°C	0°C … +40°C
	(ideal: 0°C … +35°C)	(ideal: 0°C … +35°C)
Relative humidity	5 … 95% (non-condensing)	5 … 95% (non-condensing)
Protection class	IP 65 / IP 67	IP 65
Shock resistance	withstands multiple falls onto concrete from a height of 2.4m	n.a.
Certifications	UL 60950-1, C22.2 No. 60950-1	

Read field

Code type	Module size [mil]	Module size [mm]	From [mm]	To [mm]
Code 39	3	0.076	50	71
	5	0.127	50	71
UPC/EAN 13	13 (100%)	0.330	25	147
PDF 417	6.67	0.169	50	81
Data Matrix Code	5	0.127	10	63
	10	0.254	0	86
QR Code	5	0.127	10	63
	10	0.254	0	81

Notice:
Please notice that the real reading distances are also influenced by factors such as labeling material, printing quality, scanning angle, printing contrast etc., and may thus deviate from the reading distances specified here.

Additional information on the product and on configuring (code type release, number of digits, etc.) can be found in the operating instructions (Product Reference Guide). Download at www.leuze.com.

Remarks

Operate in accordance with intended use!

✎ The product may only be put into operation by competent persons.
✎ Only use the product in accordance with the intended use.

Robust 2D-code hand-held scanner with integrated decoder for directly marked codes (DPM). These codes may be dot-peened or printed. Laser-etched codes on flat or round surfaces can also be detected.

Data transmission during keyboard-wedge operation via USB interface, or serial communication via RS 232 and USB interface.

For a functional unit, a hand-held scanner, the base station and corresponding cable as well as a power supply unit and must be ordered.

Order guide

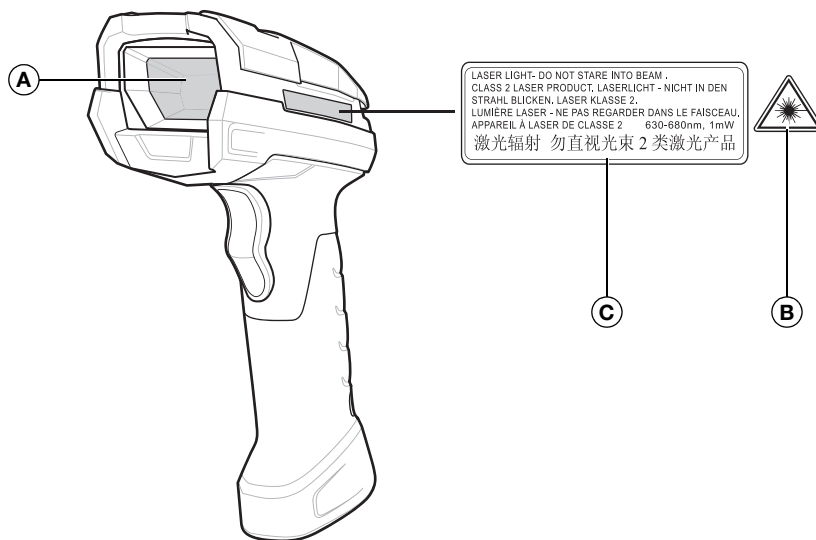|		Part no.
HS 6678 DPM	DPM hand-held scanner with radio transmission with RS 232 and USB Interface	50138138

Laser safety notices

⚠ **ATTENTION, LASER RADIATION – LASER CLASS 2**

Never look directly into the beam!

The device satisfies the requirements of IEC 60825-1:2007 and IEC 60825-1:2014 (EN 60825-1:2007 and EN 60825-1:2014) safety regulations for a product in **laser class 2** as well as the U.S. 21 CFR 1040.10 and 1040.11 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

✎ Never look directly into the laser beam or in the direction of reflecting laser beams!
   If you look into the beam path over a longer time period, there is a risk of injury to the retina.

✎ Do not point the laser beam of the device at persons!

✎ Intercept the laser beam with an opaque, non-reflective object if the laser beam is accidentally directed towards a person.

✎ When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!

✎ CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.

✎ Adhere to the applicable legal and local regulations regarding protection from laser beams.

✎ The device must not be tampered with and must not be changed in any way.
   There are no user-serviceable parts inside the device.
   Repairs must only be performed by Leuze electronic GmbH + Co. KG.

NOTICE

Laser information and warning signs are firmly attached to the device.

LASER LIGHT- DO NOT STARE INTO BEAM .
CLASS 2 LASER PRODUCT. LASERLICHT - NICHT IN DEN
STRAHL BLICKEN. LASER KLASSE 2.
LUMIÈRE LASER - NE PAS REGARDER DANS LE FAISCEAU,
APPAREIL À LASER DE CLASSE 2   630-680nm, 1mW
激光辐射 勿直视光束 2 类激光产品

A Laser exit opening
B Laser warning sign
C Laser information sign with laser parameters

HS 6678 DPM on serial PC interface

Code 1

<u>Required parts:</u>

1x	50138138	HS 6678 DPM
1x	50138134	Base HS 6678
1x	50138350	NT HS 6678
1x	50138358	KY-HS-DDS-D9AJ2ARAA-020-T1

Scanning the adjacent 2D-codes (Code 1 -> Code 2) sets the max. wireless operating range to 10m and the following interface parameters:

RS 232 at 9600 baud, 8 data bits, 1 stop bit, no parity, no prefix, no postfix; Code 2/5 Interleaved with 10 places

The '**SCAN TO CONNECT**' bar code, which is affixed to the base station, must then be scanned!

Code 2

Configuration for the RS 232 Leuze standard protocol

Scanning the adjacent 2D-codes (Code 1 -> Code 2) sets the max. wireless operating range to 10m and the following interface parameters for the Leuze standard protocol:

RS 232 at 9600 baud, 8 data bits, 1 stop bit, no parity, prefix STX and postfixes <CR><LF>; Code 2/5 Interleaved with 10 places

The '**SCAN TO CONNECT**' bar code, which is affixed to the base station, must then be scanned!

Code 1

Code 2

HS 6678 DPM on MA 2xx*i*

Required parts:

1x	50138138	HS 6678 DPM
1x	50138134	Base HS 6678
1x	50138350	NT HS 6678
1x	50138358	KY-HS-DDS-D9AJ2ARAA-020-T1
1x	50113397	KB JST-HS-300
1x		MA 2xxi fieldbus/industrial ethernet gateway

Scanning the adjacent 2D-codes (Code 1 -> Code 2) sets the max. wireless operating range to 10m and the following interface parameters for communication with the MA 2xx*i* gateway:

RS 232 transmission at 9600 baud, 8 data bits, 1 stop bit, no parity, postfixes <CR><LF>; Code 2/5 Interleaved with 10 places

The '**SCAN TO CONNECT**' bar code, which is affixed to the base station, must then be scanned!

Code 1

Code 2

HS 6678 DPM on MA 21

Required parts:

1x	50138138	HS 6678 DPM
1x	50138134	Base HS 6678
1x	50138350	NT HS 6678
1x	50138358	KY-HS-DDS-D9AJ2ARAA-020-T1
1x	50035421	KB 021 Z
1x	50030481	MA 21 100

Scanning the adjacent 2D-codes (Code 1 -> Code 2) sets the max. wireless operating range to 10m and the following interface parameters for communication with the MA 21 connector unit:

RS 232 transmission at 9600 baud, 7 data bits, 1 stop bit, even parity, postfixes <CR><LF>; Code 2/5 Interleaved with 10 places

The '**SCAN TO CONNECT**' bar code, which is affixed to the base station, must then be scanned!

Code 1

Code 2

Pin assignments KB 021 Z

Core color:	Signal	Terminal in the MA 21:
brown	RXD	26
white	TXD	27
blue	GND	28
red	VCC	30
black	GND	31
bare (shield)	PE	21

HS 6678 DPM on USB interface (keyboard emulation)

With this operating mode, a german PC keyboard is emulated (Keyboard Wedge mode via USB). The read data are written directly into the currently activated program. The data can thereby be further processed in all standard programs.

Required parts:

1x	50138138	HS 6678 DPM
1x	50138134	Base HS 6678
1x	50138350	NT HS 6678
1x	50138356	KY-HS-SDS-U4AJ2ARAA-020-T1

Scanning the adjacent 2D-code sets the max. wireless operating range to 10m and the following interface parameters for keyboard emulation via USB interface:

German USB keyboard emulation with <CR><LF>; Code 2/5 Interleaved with 10 places

The '**SCAN TO CONNECT**' bar code, which is affixed to the base station, must then be scanned!

HS 6678 on USB interface (COM port emulation)

With this operating mode, a COM interface is emulated (COM Port Emulation via USB). The read data are sent to a new COM interface and can be further processed by programs that expect data via COM interfaces. The drivers with which this COM interface is emulated can be downloaded at *www.leuze.com*.

Required parts:

1x	50138138	HS 6678 DPM
1x	50138134	Base HS 6678
1x	50138350	NT HS 6678
1x	50138356	KY-HS-SDS-U4AJ2ARAA-020-T1

Procedure:

1. Plug the USB cable into the base station and a free USB port.
   The scanner acknowledges this with a tone sequence.
2. Scan the adjacent 2D-code followed by the '**SCAN TO CONNECT**' bar code, which is affixed to the base station.
   A max. wireless operating range of 10m will be set.
3. Scan the bar code shown below.
4. Install the USB serial driver when you are prompted to do so by Windows.
5. Open a terminal program or your program for the serial interface and select the new COM port.

HS 6678 DPM   **DPM hand-held scanner with radio transmission**

## Settings for reading directly marked Codes (DPM)

Unlike bar codes typically printed on labels, a direct part mark (DPM) is a symbol that is marked directly on an item's surface for permanent identification, using methods such as laser etching, dot peening, or direct-printing.
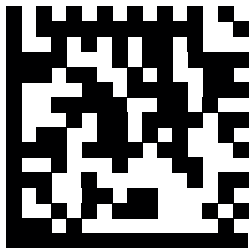
DPM Modes

Select one of the following DPM modes based on the type of bar code being scanned. There are two DPM modes which are recommended for different sets of bar code characteristics. The combinations of these characteristics vary and it is recommended that all modes are tested on the target bar code to determine the best mode for the application.

Disable DPM Mode

No special processing occurs.
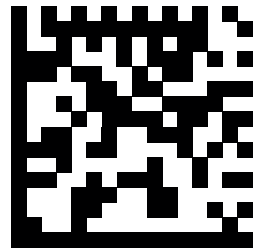
DPM Mode 1

This setting optimizes decoding performance on smaller DPM codes, typically found on electronics and medical instruments, especially on smooth surfaces. These codes tend to be laser etched or direct-printed.

DPM Mode 2

This setting optimizes decoding performance on larger DPM codes, typically found on industrial parts, especially on rough, grainy, or visibly machined surfaces. These bar codes tend to be dot-peened or laser etched.

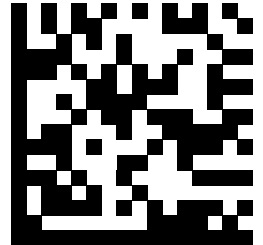This is the factory default setting for the HS 6608 DPM device.
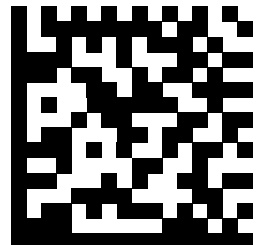
DPM Illumination Control

The following settings control the Illumination for DPM code reading.
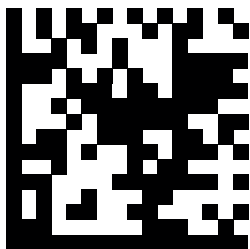
Direct illumination

With this setting the scanner uses only the direct (warm white) illumination. It is recommended for use with dot-peened codes.

We recommend to tilt the part 30 degrees.

Indirect illumination

With this setting the scanner uses only the red diffuse illumination. It is recommended for use with laser etched codes on curved, rough, grainy, highly reflective, visibly machined surfaces or cylinders.

Automatic cycle illumination

With this setting the scanner cycles alternately between direct and indirect illumination. The scanner starts with the illumination used during the last successful decode.

This is the factory default setting for the HS 6608 DPM device.