

# LED Information Display

## GSO

GSO series information displays are digital LED information displays specially designed for public transport stops and terminals. The full matrix LED displays provide a flexible solution for passenger information systems providing up-to-date information to passengers. Designed without front cover glass for maximum colour reproduction. Various mounting options.



# Features

## LED Technology

LED full-matrix technology allows freely configurable display layout. Full graphical display with fine pixel pitch 2.5 or 3.9 mm perfectly displays text, graphic symbols, images, videos, websites and live broadcasts.

- High brightness display guarantees excellent readability even in direct sunlight.
- Fully graphic display shows public transport information, train and bus departures, general passenger information as well as advertising messages and other multimedia.

## Information System

Possibility of making the display as an autonomous display element or as part of larger information system.

- Management by an external master computer makes tracking and controlling easier.
- Power and runtime data are automatically monitored.

## Mechanical Design

- Stable construction made of laser-cut and bent aluminium sheets and profiles, frame color on customer's request.
- Without front glass for excellent contrast and color reproduction, complete reduction of reflections, better cooling and lower weight.
- Flexible dimensions.
- Ceiling, wall bracket or wall surface mounting. Customized solution on request.
- Single sided or double sided design.
- Possibility to implement extra digital clock, analogue clock, platform number or fixed description.
- Cooling is ensured by inner temperature active cooling with fans with fault detection.
- Smooth LED surface for "19g" variant.
- Easy access to all internal modules after tilting front panel makes easier to check up and replace internal parts.

## Operation

- The display is designed for reliable usage 24/7 in outdoor conditions.
- Choose from two types of modes according displays usage.

## Text-to-Speech Module

Specially developed module for visually handicapped person.

- The module provides the necessary information via synthetic voice output from 8W speakers.

## Various Areas of Use



Public Transport and Bus Stops



Train Stops and Stations



Railway Stations



LED Technology



Full Color RGB Display



Usage 24/7



Brightness up to 5 500 cd/m<sup>2</sup>



Management and Monitoring System



Integrated Temperature Control



Option WiFi, LTE or Fiber Optics



Text-To-Speech Module



Suitable for Outdoor Use

# Technical Parameters

GSO.		19g	25	25a	39	
Module Specifications	pixel pitch [mm]	1.95		2.5	3.9	
	resolution [px]	128 × 128		100 × 100	128 × 64	64 × 64
	size [mm]		250 × 250		320 × 160	250 × 250
	brightness	4 000 cd/m <sup>2</sup>		4 500 cd/m <sup>2</sup>	5 000 cd/m <sup>2</sup>	5 500 cd/m <sup>2</sup>
	viewing angle			±70° × ±60°		
	frame frequency			50 Hz		
	refresh rate	3 400 Hz			1 920 Hz	
	color depth	22 bit			24 bit	
	contrast			3 000:1		
	life span			≥ 100 000 hours (70% brightness)		
	Mechanical Construction	frame		laser-cut and bent aluminium sheets		
glass			without front glass			
service access			tilting front panel secured by industrial locks			
cooling			inner temperature-controlled active cooling, fans with fault detection			
dimensions [mm]			by screen size, see Indicative dimensions table			
protection degree			IP 54			
max. size of active display area [m] W × H		2.5 × 1.25		2.75 × 1.25 <sup>1</sup>	2.88 × 1.28	2.75 × 1.25 <sup>1</sup>
noise level			max. 57 dB – at maximum cooling system power			
Temperature Management	temperature		-20 to +40 °C			
	humidity		10 to 90 % (without condensing)			
	max. intensity of solar radiation		1 120 W/m <sup>2</sup>			
Power	power voltage		100–240 VAC, 50–60 Hz			
	max. power consumption		45 W/ module MAX, 15 W/ module AVG		30 W/ module MAX, 10 W/ module AVG	27 W/ module MAX, 7 W/ module AVG
Mounting	standard		ceiling suspension, wall bracket, wall surface mounting			
	on request		customized solution			

## Note

<sup>1</sup> Possibility to make information display without cover glass made of cabinets, where there is no size limit. Dimensions must be in multiples of 0.5 x 0.5 m.

## Basic Font Set

### GSO.19g

Name	Standard 5/7	Bold 6/7	Narrow 4/7	Standard 6/10	Narrow 6/12	Arial 9/11	Arial 11/13	Arial 15/17	Arial 17/19	Arial 25/27
Max. character size (including gaps) [px] A × B	6 × 10	7 × 10	5 × 10	7 × 14	7 × 10	8 × 14	12 × 18	16 × 27	18 × 30	26 × 42
Height of capital letter [mm] C	14.6	14.6	14.6	20.4	24.3	22.4	26.3	34.1	38.0	53.6
Readability DIN1450 [m]	6	6	6	9	10	9	11	14	16	22
Readability TSI-PRM [m]	4	4	4	6	7	6	7	9	10	14
Number of characters per line (1 module)	21.3	18.2	25.6	18.2	18.2	16.0	10.6	8.0	7.1	4.9
Max. number of rows per module	12.8	12.8	12.8	9.1	12.8	9.1	7.1	4.7	4.2	3.0

Possibility to add font on customer's request

### GSO.25

Name	Standard 5/7	Bold 6/7	Narrow 4/7	Standard 6/10	Narrow 6/12	Arial 9/11	Arial 11/13	Arial 15/17	Arial 17/19	Arial 25/27
Max. character size (including gaps) [px] A × B	6 × 10	7 × 10	5 × 10	7 × 14	7 × 10	8 × 14	12 × 18	16 × 27	18 × 30	26 × 42
Height of capital letter [mm] C	18.8	18.8	18.8	26.3	31.3	28.8	33.8	43.8	48.8	68.8
Readability DIN1450 [m]	8	8	8	12	13	12	14	18	20	28
Readability TSI-PRM [m]	5	5	5	7	8	7	8	11	12	17
Number of characters per line (1 module)	16.7	14.3	20.0	14.3	14.3	12.5	8.3	6.3	5.6	3.8
Max. number of rows per module	10.0	10.0	10.0	7.1	10.0	7.1	5.6	3.7	3.3	2.4

Possibility to add font on customer's request



## Basic Font Set

### GSO.25a

Name	Standard 5/7	Bold 6/7	Narrow 4/7	Standard 6/10	Narrow 6/12	Arial 9/11	Arial 11/13	Arial 15/17	Arial 17/19	Arial 25/27
Max. character size (including gaps) [px] A × B	6 × 10	7 × 10	5 × 10	7 × 14	7 × 10	8 × 14	12 × 18	16 × 27	18 × 30	26 × 42
Height of capital letter [mm] C	18.8	18.8	18.8	26.3	31.3	28.8	33.8	43.8	48.8	68.8
Readability DIN1450 [m]	8	8	8	12	13	12	14	18	20	28
Readability TSI-PRM [m]	5	5	5	7	8	7	8	11	12	17
Number of characters per line (1 module)	21.3	18.3	25.6	18.3	18.3	16.0	10.7	8.0	7.1	5.0
Max. number of rows per module	6.4	6.4	6.4	4.6	6.4	4.6	3.5	2.4	2.1	1.5

Possibility to add font on customer's request

### GSO.39

Name	Standard 5/7	Bold 6/7	Narrow 4/7	Small 4/6	Standard 6/10	Narrow 6/12	Arial 7/9	Arial 9/11	Arial 15/17	Arial Bold 9/11
Max. character size (including gaps) [px] A × B	6 × 10	7 × 10	5 × 10	5 × 7	7 × 14	7 × 18	8 × 14	10 × 18	16 × 27	10 × 18
Height of capital letter [mm] C	25	25	25	22	37	45	33	41	64	41
Readability DIN1450 [m]	10	10	10	9	15	18	13	16	26	16
Readability TSI-PRM [m]	6	6	6	6	9	11	8	10	16	10
Number of characters per line (1 module)	10.7	9.1	12.8	12.8	9.1	9.1	8.0	6.4	4.0	6.4
Max. number of rows per module	6,4	6,4	6,4	9,1	4,6	3,6	4,6	3,6	2,4	3,6

Possibility to add font on customer's request







# Order Reference

<b>1</b>	<b>Model</b>	
	GSO.19g	19g
	GSO.25	25
	GSO.25a	25a
	GSO.39	39
<b>2</b>	<b>Number of Pixels Horizontally</b>	
	GSO.19g (128 px per module)	256–1280
	GSO.25 (100 px per module)	200–1100
	GSO.25a (128 px per module)	256–1152
	GSO.39 (64 px per module)	128–704
<b>3</b>	<b>Number of Pixels Vertically</b>	
	GSO.19g (128 px per module)	128–640
	GSO.25 (100 px per module)	100–500
	GSO.25a (64 px per module)	64–512
	GSO.39 (64 px per module)	64–320
<b>4</b>	<b>Display Color</b>	
	Full color RGB display	RGB

<b>5</b>	<b>Design</b>	
	Single sided	N
	Double sided	D
<b>6</b>	<b>Mounting</b>	
	Ceiling suspension	S
	Ceiling suspension with additional fastening on side of the display	SB
	Ceiling suspension with additional fastening on left side of the display	SL
	Ceiling suspension with additional fastening on right side of the display	SR
	Wall surface mounting	N
	Wall bracket	B
	Wall bracket with additional fastening on left side of the display	BL
	Wall bracket with additional fastening on right side of the display	BR
	Customized solution on request	Z
<b>7</b>	<b>Cover Glass</b>	
	Without front glass	O

<b>8</b>	<b>Options</b>	
	(if more than one options is selected, include the extension code in order indicated separated by dot)	
	Fixed description (number indicates specific design)	Px
	Digital clock	CLK
	Analogue clock	ACLK
	Analogue clock with seconds hand	ACLKS
	Platform number	Nb
	Text-to-Speech module with 8W speaker and receiver for visually handicapped	TTS
	Interface Ethernet	LAN
	Interface RS 485	RS485
	Interface WiFi	WiFi
	Interface LTE	LTE
	Interface LTE with short-term power backup	LTEB
	Interface fiber optics	FO
	Tamper switch	ST
	<b>9</b>	<b>Frame Color</b>
Matte black		RAL9005
Light grey		RAL7040
Blue		RAL5003
Frame color on request		RALxxxx

Order example:

**GSO.25.1000.200.RGB.N.N.O.CLK.TTS.RS485.RAL5003**

<b>GSO</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
	Model	Number of Pixels Horizontally	Number of Pixels Vertically	Display Color	Design	Mounting	Cover Glass	Options	Frame Color

# Accessories

## Holders:

<b>1</b>	<b>Holder</b>		
	Wall holder	WH.F	
<b>2</b>	<b>Model</b>		
	GSO.19g	GSO.19g	
	GSO.25	GSO.25	
	GSO.25a	GSO.25a	
	GSO.39	GSO.39	
<b>3</b>	<b>Number of Pixels Horizontally</b>		
	GSO.19g	256-1280	
	GSO.25 (100 px per module)	200-1100	
	GSO.25a (128 px per module)	256-1152	
	GSO.39 (64 px per module)	128-704	

<b>4</b>	<b>Number of Pixels Vertically</b>		
	GSO.19g (128 px per module)	128-640	
	GSO.25 (100 px per module)	100-500	
	GSO.25a (64 px per module)	64-512	
	GSO.39 (64 px per module)	64-320	

<b>5</b>	<b>Options</b>		
	Fixed header (number indicates specific design)	Px	
	Digital clock	CLK	
	Platform number	Nb	

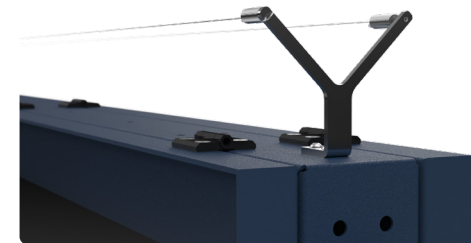
<b>6</b>	<b>Frame Color</b>		
	Matte black	RAL9005	
	Light grey	RAL7040	
	Blue	RAL5003	
	Frame color on request	RALxxxx	

## Other:

### Accessories

Protection against birds

GSO.BP



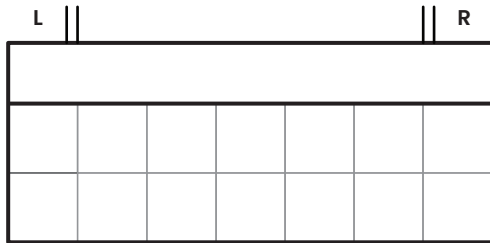
Order example  
for display GSO.25.1000.200.RGB.N.N.O.CLK.TTS.RS485.RAL5003:

**WH.F.GSO.25.1000.200.CLK.RAL5003**



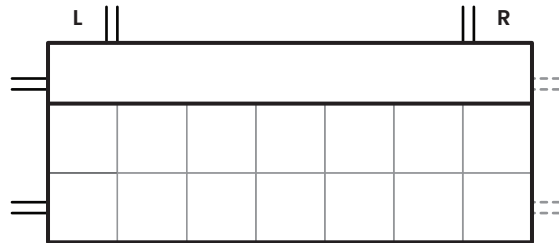
# Mounting

Ceiling Suspension



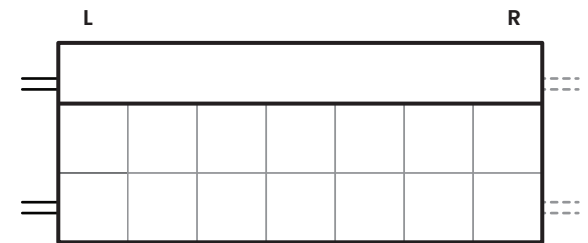
Order reference: **S**

Ceiling Suspension  
with Additional Fastening on Side of the Panel



Order reference for Single Sided: **SL / SR**  
Order reference for Double Sided: **SB**

Wall Bracket  
(with Additional Fastening on Side of the Panel)



Order reference for Single Sided: **BL / BR**  
Order reference for Double Sided: **B**

# Get in Touch

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