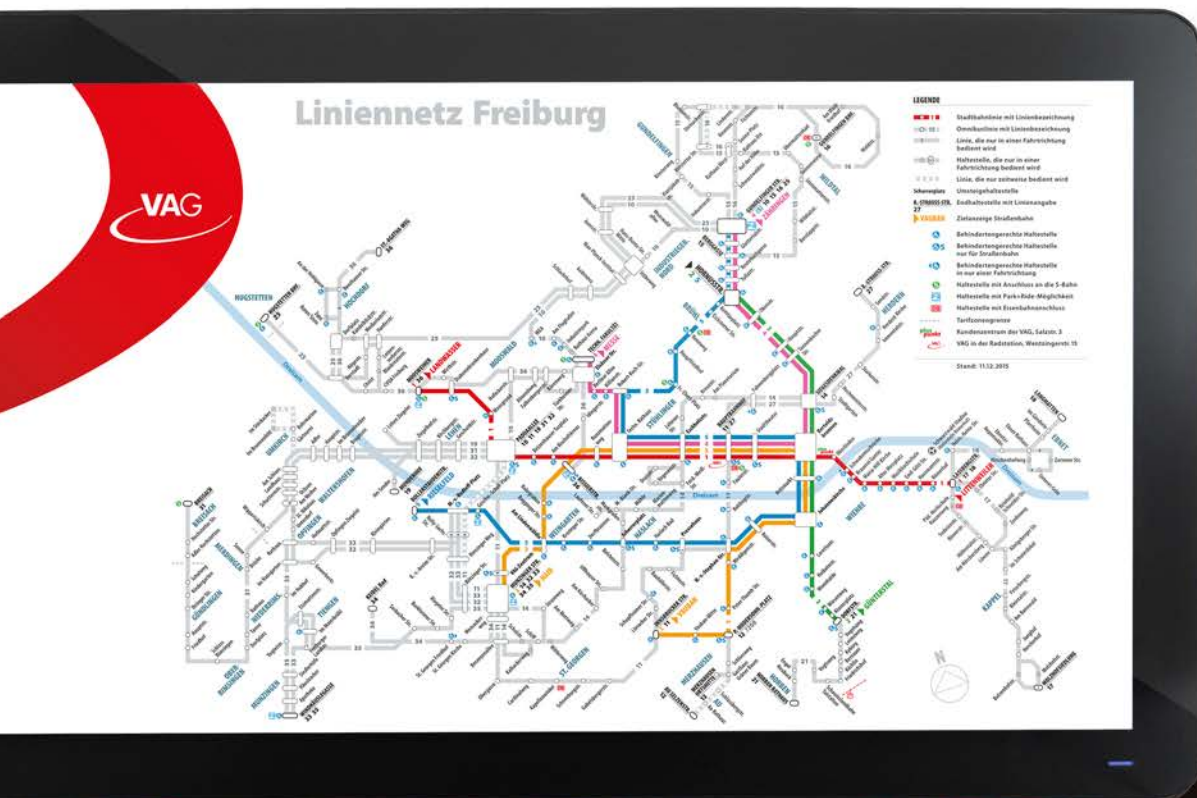# VISUAL FOCUS

Custom Display Solutions - Public Transportation

Public Transportation

PUBLIC TRANSPORTATION
Canvys Capabilities

canvys ®
visual technology solutions
A Division of Richardson Electronics

Why work with Canvys ?

Canvys designs and manufactures custom monitors for Original Equipment Manufacturers (OEMs). These customized displays are built with the highest quality components, innovative technologies, and long-term product availability. For over 30 years, we have successfully engineered display solutions for applications in: automation, retail, gaming, point of sale, cash desks, point of information, kiosk systems, security, surveillance, marine and **PUBLIC TRANSPORTATION**.

Canvys brings together a deep understanding of visual technologies, wide-ranging capabilities and a worldwide network to create complete solutions. Whether you need a custom-engineered system, modifications to an off-the-shelf product, or advice on specifying the right equipment, our team of experts is here to help.

As a division of Richardson Electronics, Ltd. (NASDAQ: RELL), we're supported by a network of strategically located sales offices and stocking locations in North America, Europe, Asia, Australia and Latin America, as well as Technology Innovation Centers in North America and Europe.

Canvys Display Solutions for Public Transportation

DISPLAY OPTIONS
Canvys offers a full range of display options customized to each customers' needs:

- Different sizes from 10.4" up to 21.5"
- Classic and wide format
- High Brightness LED solutions
- Stretched Display (Bar Type)
- All-in-One solution from ARM® Cortex® to Intel® Atom™ I7

ENVIRONMENTAL REQUIREMENTS
Unique applications require special attention to designs for safety and to protect against vandalism:

- Plastic, metal or die cast housing
- Acrylic or safety glass
- IP protection based on requirements
- Customized colors or adoptions to customer's marketing guide lines

CONTROL METHODS AND INTERFACES
Our team of experts are able to engineer displays or modify off-the-shelf products to get you the right solution every time:

- AD Board design
- Various I/Os like Video, VGA, Digital, Composite Video, …
- Long cable distance solution
- Remote OSD
- Network control

APPROVALS AND SAFETY
Our products adhere to the strict safety regulations required by the public transportation industry:
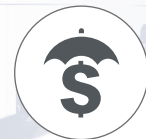
- CE, FCC, UL
- E-Mark
- R118
- EN50155
- EN45545

APPLICATION SPECIFIC
Our experts consider the customer-specific application in all design and engineering plans:

- Rounded corners
- Special fittings: rear mount, side mount, …
- Easy to change protection shield
- Hidden OSD

RELIABLE PARTNER & EXPERTISE
As a division of Richardson Electronics, we have the worldwide support to deliver you the products and services you need:

- Both globally positioned though locally strong partner
- Industrial grade and reliable display technology
- Long-time available products
- End-of-Life Management
- After Sales Services

Canvys

visual technology solutions
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Overview Transportation Solutions

10.4" Display	Page 5	
	10.4"	Display with black IP40 enclosure, composite video input, anti reflective protection shield and industrial grade components, …
	4:3	Options: on request various customizings are possible, …

Die Cast Housing	Page 8-9	**also available as All-in-One**
True Flat S		
	18.5"	Die cast housing display, slim True Flat design, protection shield with AR coating, long distance solution up to 30 m, VGA, …
	16:9	Option All-in-One: Intel® Atom™/Core™ i3, PCap touch, variable interfaces, different housing colors, customized branding, …
True Flat S		
	21.5"	Die cast housing display, slim True Flat design, protection shield, long distance solution up to 15 m, VGA, DVI and Display Port input, …
	16:9	Option All-in-One: Intel® Atom™/Core™ i3, PCap touch, variable interfaces, different housing colors, customized branding, …

Canvys delivers a wide range of display solutions for public transportation and railway applications.

This selection is based on the experience of Canvys and the real needs of its customers. It allows final products which are highly integrated in every transportation environment.

General features of the solutions:

- High quality industrial grade components
- Long-term available
- Well-prepared for the future through optional touch screen integration
- Nearly limitless customizing options
- Special approvals like E-Mark and EN50155

Metal Housing	Page 6-7	
DCA15XLOZBABXXX		
	15"	Metal housing display, round corners, easy to exchange protection shield, VGA, DVI, composite video input, wide range 12 ~ 36 VDC input, …
	4:3	Options: Housing color, network control, customized housing possible, high-brightness LED backlight, wide temperature range, …
DCA17XLOZBABXXX		
	17"	Metal housing display, round corners, easy to exchange protection shield, VGA, DVI, composite video input, wide range 12 ~ 36 VDC input, …
	5:4	Options: Housing color, network control, customized housing possible, high-brightness LED backlight, wide temperature range, …
DCA19XLOZBABXXX		
	19"	Metal housing display, round corners, easy to exchange protection shield, VGA, DVI, composite video input, wide range 12 ~ 36 VDC input, …
	5:4	Options: Housing color, network control, customized housing possible, high-brightness LED backlight, wide temperature range, …
DCA18ELOZBABXXX		
	18.5"	Metal housing display, round corners, easy to exchange protection shield, VGA, DVI, composite video input, wide range 12 ~ 36 VDC input, …
	16:9	Options: Housing color, network control, customized housing possible, high-brightness LED backlight, wide temperature range, …
DCA21ELOZBABXXX		
	21.5"	Metal housing display, round corners, easy to exchange protection shield, VGA, DVI, composite video input, wide range 12 ~ 36 VDC input, …
	16:9	Options: Housing color, network control, customized housing possible, high-brightness LED backlight, wide temperature range, …

PUBLIC TRANSPORTATION
Examples

True Flat S

Canvys True Flat S Series – A field-tested and reliable base for transportation applications

Hong Kong – Canvys True Flat S monitor in a bus showing the stops – Project realized for the whole Asia / Pacific region

Features of the series in general

- Ruggedized aluminum housing: Standard colors: black (RAL 9005), silver (RAL 9006) or white (RAL 9003)

- IP 54 protection: Splash proof, dust proof and industrial grade housing

- Slim housing with only 42 mm in depth

- Built with aluminum as the primary material weighing only 6.4 kg / 14.1 lbs with acrylic shield

- Longterm available

- Full approved to CE, UL and FCC

All-in-One Version

- Different configurations with integrated Intel® Atom™ or Core™ i3 / i7 processors available

Required and realized features of the application

- Robust and vandal-proof case with rounded edges (public transportation installations refuse sharp corners)

- Anti-vandal acrylic front protection shield

- Sealed case without vents prevents dust and particulate ingress

- Long cable distance solution, no OSD visible

- OSD access through remote control

- High bright panel which is anti glare coated makes the unit suitable for viewing in high ambient light

- Fitted with a wide range power supply with surge & burst protection to cope with the voltage spikes emitted from alternates

- E-Mark, EN50155, R118 and EN45545 possible

Rear view of All-in-One version
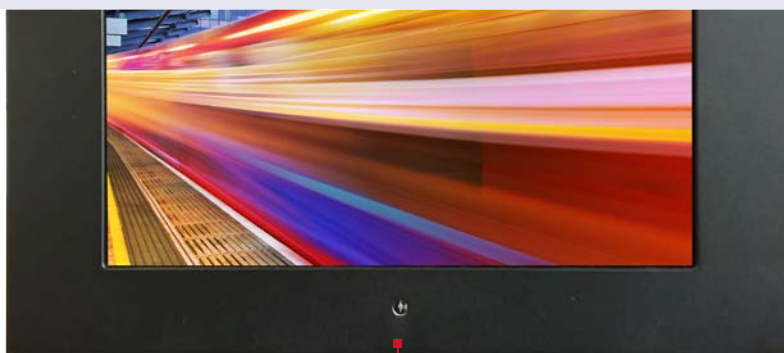

I/O cover locked with security screws

Side view of True Flat S with silver housing

Key Features

- IP 40 enclosure
- Anti reflective protection shield
- Black housing
- Wide range DC input
- High-quality industrial grade components
- Special approvals like EN50155, EN45545 on demand

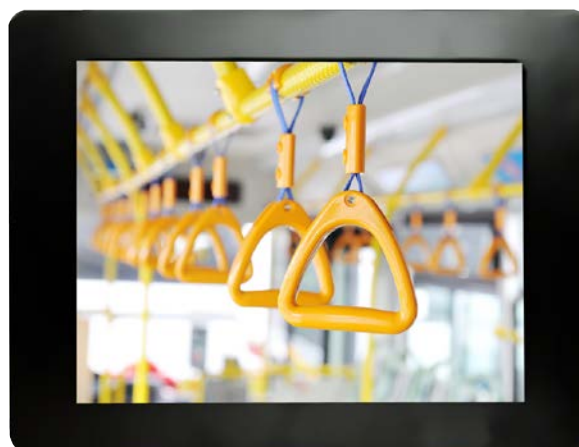| Model / Type	10.4" Display	
Size | Aspect Ratio	10.4" / 26.4 cm | 4:3	
Active Area (H × V)	211.2 × 158.4 mm	
Resolution	800 × 600 SVGA	
Pixel Pitch	0.264 mm	
Display Colors	16.2 M	
Response Time	15 ms (typ.)	
Brightness	400 cd/m² (typ.)	
Contrast Ratio	700:1 (typ.)	
Viewing Angle (H × V)	160° / 130° (typ.)	
I/O Ports	VGA or composite video input, lockable DC input, ground bolt	
Dimensions (W × H × D)	280.0 × 220.0 × 56.5 mm	11.0 × 8.7 × 2.2 in
Weight	3.2 kg	7.1 lbs
Temperature Operating	-25 °C to +70 °C	-13 °F to +158 °F
Temperature Storage	-30 °C to +85 °C	-22 °F to +185 °F
Power Consumption	12 W	
Power Supply	Wide range 9 ~ 36 V DC	
Safety & Ergonomics	EN50155, EN45545 on demand, on project base	
Misc.	VESA 75, anti reflective protection shield, IP40 (w/o IO), light sensor, picture rotation 180°	

Ambient Light Sensor

PUBLIC TRANSPORTATION
15" / 17" / 19" Metal Housing

Key Features

- Metal housing with round corners
- Easy replaceable protection shield
- Wide range DC input 12 ~ 36 V DC with surge and burst protection
- VGA, DVI and VIDEO input
- Lockable input and DC connectors
- OSD not directly accessible
- Remote OSD through D-Sub 9-pin
- CE and E-Mark available for MP
- High-brightness LED up to 1500 cd/m² (on demand)
- Wide temperature range (on demand)

Model / Type	DCA15XLOZBABXXX		DCA17XLOZBABXXX		DCA19XLOZBABXXX	
Size | Aspect Ratio	15" / 38.1 cm | 4:3		17" / 43.2 cm | 5:4		19" / 48.3 cm | 5:4	
Active Area (H × V)	304.1 × 228.1 mm		337.9 × 270.3 mm		376.3 × 301.1 mm	
Resolution	1024 × 768 XGA		1280 × 1024 SXGA			
Pixel Pitch	0.297 mm		0.264 mm		0.294 mm	
Display Colors	16.2 M		16.7 M			
Response Time	8 ms (typ.)		30 ms (typ.)		5 ms (typ.)	
Brightness	450 cd/m² (typ.)		350 cd/m² (typ.)			
Contrast Ratio	800:1 (typ.)				1000:1 (typ.)	
Viewing Angle (H × V)	160° / 150° (typ.)		160° / 140° (typ.)		170° / 160° (typ.)	
I/O Ports	VGA, DVI, CVBS, S-Video					
Dimensions (W × H × D)	400.0 × 299.0 × 52.0 mm	15.8 × 11.8 × 2.0 in	430.0 × 350.0 × 52.0 mm	16.9 × 13.8 × 2.0 in	t.b.d.	
Weight	7.1 kg	15.7 lbs	8.8 kg	19.3 lbs	t.b.d.	
Temperature Operating	+10 °C to +40 °C	+50 °F to +104 °F	+10 °C to +40 °C	+50 °F to +104 °F	+10 °C to +40 °C	+50 °F to +104 °F
Humidity Operating	30 % to 75 % RH					
Power Consumption	< 15 W		< 20 W		< 25 W	
Power Supply – AC (optional)	AC 110 ~ 240 VAC external					
Power Input – DC	12 ~ 36 VDC					
Safety & Ergonomics	CE, E-Mark (E1) available		CE, E-Mark (E1) under development			
Misc.	Protection shield					

Side view

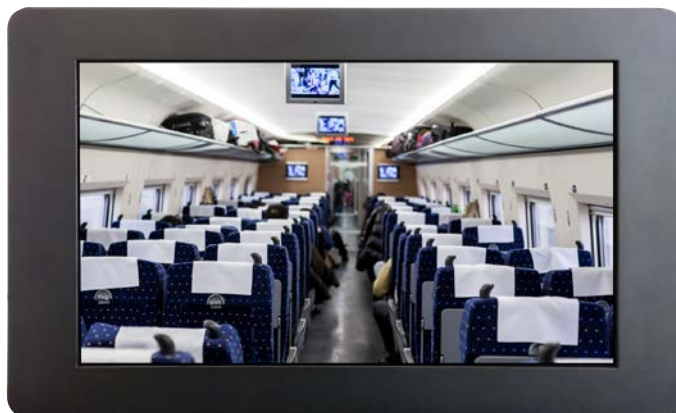Rear view

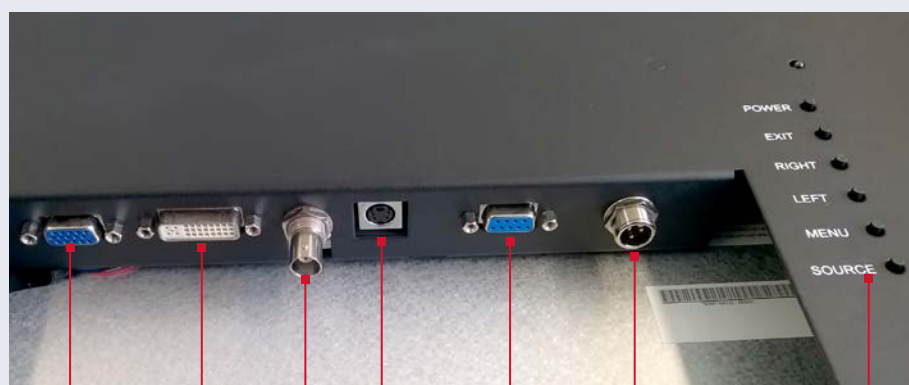# PUBLIC TRANSPORTATION
18.5" / 21.5" Wide Format Metal Housing

Key Features

- Metal housing with round corners
- Easy replaceable protection shield
- Wide range DC input 12 ~ 36 V DC with surge and burst protection
- VGA, DVI and VIDEO input
- Lockable input and DC connectors
- OSD not directly accessible
- Remote OSD through D-Sub 9-pin
- CE and E-Mark available for MP
- High-brightness LED up to 1500 cd/m² (on demand)
- Wide temperature range (on demand)

Model / Type	DCA18ELOZBABXXX		DCA21ELOZBABXXX	
Size	Aspect Ratio	18.5" / 47.0 cm	16:9		21.5" / 54.6 cm	16:9	
Active Area (H × V)	409.8 × 230.4 mm		476.6 × 268.1 mm	
Resolution	1366 × 768		1920 × 1080	
Pixel Pitch	0.300 mm		0.248 mm	
Display Colors	16.7 M		16.7 M	
Response Time	5 ms (typ.)		16 ms (typ.) / optional: 18 ms (typ.)	
Brightness	300 cd/m² (typ.)		300 cd/m² (typ.) / optional: 250 cd/m² (typ.)	
Contrast Ratio	1000:1 (typ.)		5000:1 (typ.) / optional: 3000:1 (typ.)	
Viewing Angle (H × V)	170° / 160° (typ.)		178° / 178° (typ.)	
I/O Ports	VGA, DVI, CVBS, S-Video			
Dimensions (W × H × D)	512.2 × 308.0 × 55.5 mm	20.2 × 12.1 × 2.2 in	t.b.d.	
Weight	8.7 kg	19.1 lbs	t.b.d.	
Temperature Operating	+10 °C to +40 °C	+50 °F to +104 °F	+10 °C to +40 °C	+50 °F to +104 °F
Humidity Operating	30 % to 75 % RH			
Power Consumption	< 30 W		< 35 W	
Power Supply – AC (optional)	AC 110 ~ 240 V AC external			
Power Input – DC	12 ~ 36 V DC			
Safety & Ergonomics	CE, E-Mark (E1) under development			
Misc.	Protection shield			

VGA   DVI   S-Video   D-Sub 9-pin   OSD

Composite Video   DC-in 12 ~ 36 V lockable

Rear view with open back cover showing the interfaces and OSD

Rear view with closed back cover and hidden OSD in normal operating mode

PUBLIC TRANSPORTATION
18.5" Die Cast Housing and All-in-One Version

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Key Features

- Slim and light-weight die cast aluminum housing with True Flat design

- Industrial grade housing with IP 40 protection

- Protection shield with AR coating

- Optional certifications:
  E-Mark, R118, EN50155, EN45545

- Many customizing possibilities:
  Housing color, protection shield,
  variable inputs, …

Model / Type	True Flat S	
Size | Aspect Ratio	18.5" / 47 cm | 16:9	
Active Area (H × V)	409.8 × 230.4 mm	
Resolution	1366 × 768 WXGA	
Pixel Pitch	0.300 mm	
Display Colors	16.7 M	
Response Time	30 ms (typ.)	
Brightness	300 cd/m² (typ.)	
Contrast Ratio	1000:1 (typ.)	
Viewing Angle (H × V)	170° / 160° (typ.)	
I/O Ports	VGA, RS-232 remote control interface	
Dimensions (W × H × D)	472.4 × 293.0 × 42.5 mm	18.6 × 11.5 × 1.7 in
Weight	5 kg	11.0 lbs
Power Consumption	25 W (max.)	
Power Supply	12 ~ 32 V DC	
Safety & Ergonomics	CE | Optional: E-Mark, R118, EN50155, EN45545	
Misc.	VESA 100, protection shield with AR coating, IP 40 (w/o IO), ambient light sensor	
Options on request	PCap touch, variable interfaces, USB-Hub, different housing colors, customized branding etc.	
All-in-One PC	On request, on project base	

Top view with different housing colors

Top view

PUBLIC TRANSPORTATION
21.5" Die Cast Housing and All-in-One Version

Key Features

- Slim and light-weight die cast aluminum housing with True Flat design

- Splash-proof, dust-proof and industrial grade housing with IP 54 protection

- Protection shield with AG coating

- Optional certifications: E-Mark, R118, EN50155, EN45545

- Many customizing possibilities: Housing color, protection shield, variable inputs, …

Model / Type	True Flat S	
Size | Aspect Ratio	21.5" / 54.6 cm | 16:9	
Active Area (H × V)	476.6 × 268.1 mm	
Resolution	1920 × 1080 Full HD	
Brightness	250 cd/m² (typ.)	
Contrast Ratio	3000:1 (typ.)	
Viewing Angle (H × V)	178° / 178° (typ.)	
I/O Ports	VGA, DVI-D, Display Port	
Dimensions (W × H × D)	538.0 × 329.5 × 42.0 mm	21.2 × 13.0 × 1.7 in
Weight	6.9 kg	15.2 lbs
Power Consumption	22.5 W (typ.) / 30 W (max.)	
Safety & Ergonomics (Display)	CE, UL, FCC | Optional: E-Mark, R18, EN50155, EN45545	
Options on request	PCap touch, variable interfaces, USB-Hub, different housing colors, customized branding etc.	
All-in-One PC		
CPU	Intel® Core™ i3-3217UE	
HDD / RAM	SSD 64 GB / DDR3 4 GB	
Interfaces	VGA, HDMI/DP, 4× USB, 2× LAN, RS-232	
Safety & Ergonomics (Panel-PC)	CE, EN50155, EN45545	
Options on request	Intel® ATOM™ / Celeron™, PCap touch, variable interfaces, different housing colors, customized branding etc.	

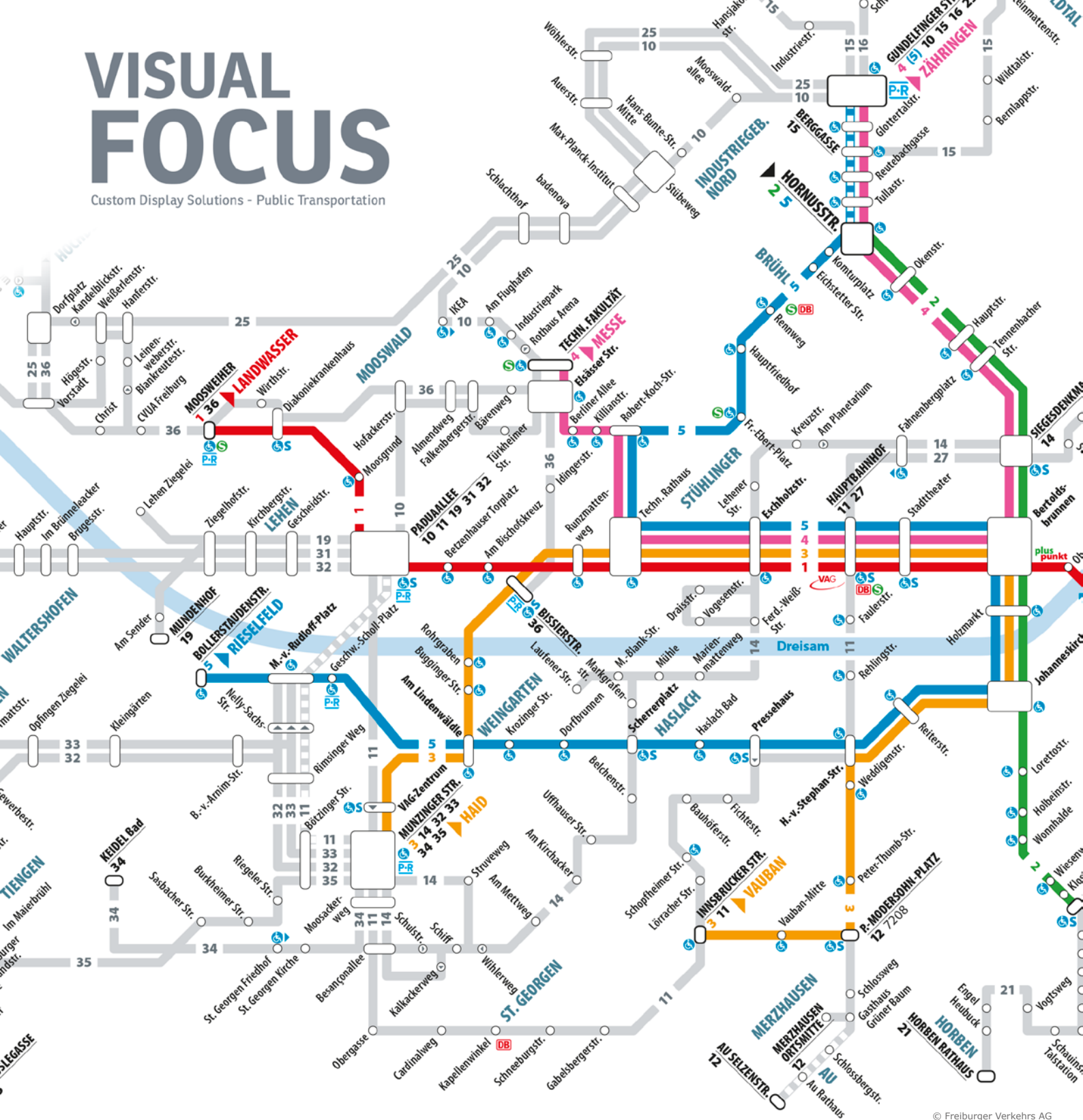*Front view*   *Rear view with different housing colors*

VISUAL FOCUS

Custom Display Solutions - Public Transportation

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