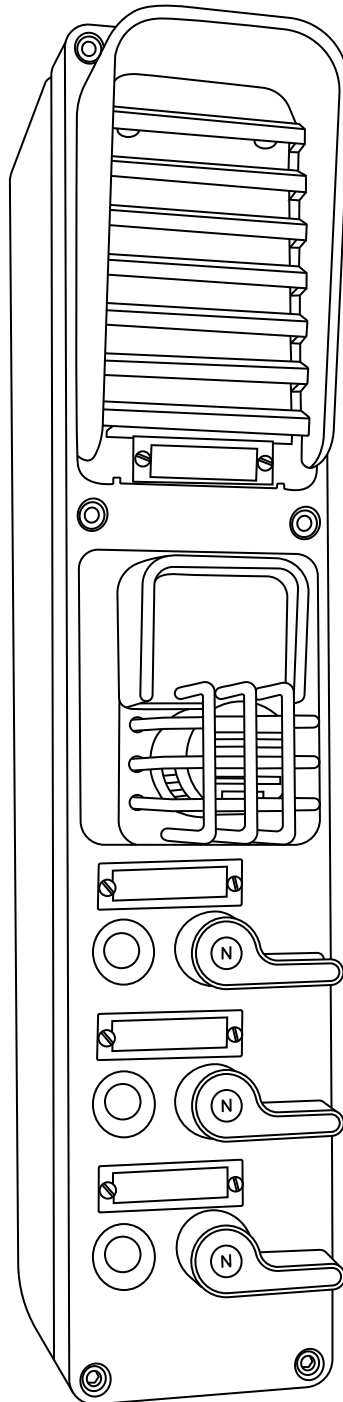


# DS-22 WFDR IP

## Weatherproof digital retro call station (100mm width)

- DS 22
- SPI-22 on board
- Dual use  
Native SIP or WU/EL  
Neumann protocol
- Software PLC
- PoE
- Retro design
- DR-WL
- Schranken  
WL  
X  
OTO
- +  
more



# Proven Neumann Elektronik quality

- Full compatibility with DS-22 system / SPI-22 platform
- Remotely configurable and remotely monitorable  
Configuration via WEB interface
- Dual use - Native SIP protocol / terminal or WL/EL Neumann protocol selectable
- Half / full duplex compatibility
- Software PLC
- Direct voice connections via key-controlled line selection
- High speech intelligibility (up to 22kHz bandwidth - depending on codec selection)
- Low and high volume control (12dB level reduction)
- Integrated voice memory
- Free key assignment as WL target keys or for local functions
- Integrated Class-D 7W amplifier for horn loudspeakers for best speech intelligibility with wide frequency range
- Integrated Class-D 7W amplifier for on/off mode or monitoring loudspeaker in standard technology with 8Ω loudspeakers
- One Ethernet interface and one service interface
- Line keys can be freely assigned with destinations
- Indication of status messages, such as call and busy signals, by means of light-emitting diodes
- Cyclic acoustic test for microphone and loudspeaker monitoring

- **Fault management via IoT MQTT interface**
- **Adjustable and monitored electret microphone with electronic noise compensation and dynamic compression**
- **Microphone / loudspeaker monitoring**
- **Dust- and water-resistant glass-fibre reinforced polyester housing**
- **Horn loudspeaker**
- **Integrated electret microphone**
- **Up to three freely inscribable single toggle speech buttons with opto-couplers, each for one line**
- **Can be extended by up to four Add-on housings, each with three freely inscribable single toggle speaker buttons with opto-couplers, each for one line**
- **Switchable volume reduction, e.g. for night operation**
- **Optional expandability with headset, foot switch or microphone**
- **Integrated connection for monitoring or announcement loudspeaker**
- **Dialling function with or without keypad**
- **EL mode with own additional loudspeaker as standard; volume configurable**
- **Potential-free relay contact for connection of a flashing light for visual signalling or a signal horn for acoustic signalling**
- **PoE phantom or PoE spare pairs power supply**
- **Optional mains node power supply or weatherproof local power supply DC 48V available**

- **DR-Intercom and crossing barrier station as integrated special functions for railway applications**
- **Disconnection of the auxiliary loudspeaker after the first WL response as a standard feature**
- **With and without integrated 30W Class-D auxiliary amplifier in 100V technology**
- **Loudspeaker impedance monitoring of the 30W Class-D auxiliary amplifier**
- **Optional impedance measurement at the 100V connection of the 30W Class-D amplifier**
- **Temperature-controlled power limitation of the 30W Class-D auxiliary amplifier**
- **Internal 100V speaker volume setting**
- **Optional range extenders available**
- **Internal microphone level and loudspeaker volume adjustment**
- **Connections and cable glands for additional components, e.g. loudspeaker and controlled powered flashing beacon for visual signalling or controlled powered horn for audible signalling, as standard**
- **Mounting of the call station after lifting off the housing cover through four mounting holes in the basic housing**

The DS-22 WFD IP 3 line weatherproof digital call station is used in intercom systems in the DS-22 decentralised communication system. It enables direct voice connections with other call stations and loudspeaker announcements outdoors and in rooms with harsh or noisy environments, e.g. in heavy industry operations or railway engineering areas.

With its integrated DR-Intercom and crossing barrier station functions, the DS-22 WFD IP weatherproof digital call station is ideally suited for use in railway applications. These functions facilitate communication between railway operators and enable communication between road users and railway operators of manually controlled level crossings.

The DS-22 WFDR IP 3 line weatherproof digital call stations described here have one to three single toggle buttons for up to three lines and are available in the housing colours pure orange RAL 2004 and golden yellow RAL 1004.

The call stations of this retro-design are primarily used to replace existing call stations of other technologies, taking into account the previous mounting positions, e.g. in recesses.

With a connected WFDR 3 line Add-on housing, it is possible to expand the DS-22 WFDR IP 3 line weatherproof digital call station by an additional 3 single toggle buttons with three additional lines, per connected WFDR Add-on housing. Up to four WFDR 3 line Add-on housings can be connected to a DS-22 WFDR IP 3 line weatherproof digital call station. This makes it possible to equip a DS-22 WFDR IP 3 line weatherproof digital call station in full configuration with a maximum of 18 buttons.

The DS-22 WFDR IP 3 line weatherproof digital call station is connected to the DS-22 network via standard network cables. The standard power supply of the DS-22 WFDR IP 3 line weatherproof digital call station is PoE, a DC 48V power supply from the network node is optionally possible.

The DS-22 WFDR IP 3 line weatherproof digital call station already has an integrated 7W D-Class monitoring or paging amplifier in 8Ω technology as standard, and in addition, depending on the delivery variant, partly already has an integrated 30W D-Class additional amplifier in 100V technology.

Call stations that do not have an integrated 30W Class-D additional amplifier are prepared for built-in and connection of a 30W Class-D additional amplifier. However, the type of connection must be taken into account. Both additional amplifiers can operate a local loudspeaker circuit (LC).

Technical data		
Art. no.	1 814 4 DS-22 WFDR IP 3 Lines golden yellow (RAL1004) 1 815 5 DS-22 WFDR IP 3 Lines pure orange (RAL 2004) 1 818 8 DS-22 WFDR IP 3 Lines 30W golden yellow (RAL1004) 1 819 9 DS-22 WFDR IP 3 Lines 30W pure orange (RAL 2004) 1 816 6 DS-22 WFDR IP Add-on housing 3 Lines golden yellow (RAL1004) 1 817 7 DS-22 WFDR IP Add-on housing 3 Lines pure orange (RAL 2004) 1 823 4 DS-22 WFDR IP Add-on housing 3 Lines golden yellow (RAL 1004) without holes 1 824 5 DS-22 WFDR IP Add-on housing 3 Lines pure orange (RAL 2004) without holes	
Mechanical data		
Weight	1 8xx x call station Approx. 4.5kg	1 816 6 / 1 817 7 Add-on housing Approx. 2.5kg
Housing dimensions (HxWxD)	500mm x 100mm x 210mm	
Housing colour	Pure orange (RAL 2004) / golden yellow (RAL1004)	
Material	Polyester, glass fibre reinforced	
Number of talk keys	3	3 per Add-on housing 3-6-9-12-15 (depending on number of enclosures)
Electrical data		
Nominal power consumption (without expansion stages)	20W	
Maximum power consumption (including all expansion stages)	90W	
Frequency range	100Hz to 22kHz (depending on the set codec)	
Connectivity		
PoE (without expansion stages)	PoE phantom call station power supply via the Ethernet interface in two pairs with PoE Class 4 according to IEEE 802.3at during operation with maximum 2 Add-on housing	
PoE (including all expansion stages)	PoE Spare Pairs call station power supply via the Ethernet interface four-pair with PoE Class 8 according to IEEE 802.3bt when operating with more than two Add-on housing to full expansion	
Mains node supply (without expansion stages)	For locations without PoE call station power supply, optional DC 48V mains node power supply via 60W trunking power supply unit	
Mains node supply (including all expansion stages)	For locations without PoE call station power supply, optional DC 48V mains node supply via 150W mounting rail power supply unit	
Local supply (without expansion stages)	For locations without PoE call station power supply, optional local power supply DC 48V by 60W external weatherproof power supply module	
Local supply (including all expansion stages)	For locations without PoE call station power supply, optional local power supply DC 48V by 150W external weatherproof power supply module	
Mains supply		
Ethernet interfaces	1 (IEEE 802.3u)	
Service interfaces	1	
Transmission protocol	Neumann DS-22 IP	
Environmental conditions		
Temperature range	-20°C to +55°C / 70°C	
Protection class according to DIN 60529, resp. IEC 60529	IP64	

Accessories	
949 1412 172 0	Carrier rail power supply AC 230V / DC 48V 60W for mains node supply
949 1412 173 1	Carrier rail power supply AC 230V / DC 48V 150W for mains node supply
229 6001 816 5	DS-22 WFDR IP Add-on housing with dummy plate golden yellow (RAL1004) for flanging under a DS-22 WFDR IP call station or a DS-22 WFDR IP Add-on housing
229 6001 817 6	WFDR IP Add-on housing with blind plate pure orange (RAL 2004) for flanging under a DS-22 WFDR IP call station or a DS-22 WFDR IP Add-on housing
229 8601 666 6	External power supply module in weatherproof housing AC 230V / DC 48V 60W for local power supply of DS-22 units
229 8701 666 7	External power supply module in weatherproof housing AC 230V / DC 48V 150W for local power supply of DS-22 units
919 1116 097 4	PoE injector according to IEEE802.3at (30W) for rail mounting in the mains node (Attention! Power supply unit 949 1412 172 0 required for power supply)
919 1116 098 5	PoE injector according to IEEE802.3bt (90W) for rail mounting in the power node (Attention! Power supply unit 949 1412 173 1 required for power supply)
919 1116 724 1	24-port switch Class 4 with 600W and 4 additional SFP ports for fibre-optic modules for 19" mounting in the network node For this purpose: 919 1116 726 3 licences per unit 919 1116 725 2 SFP module fibre-optic multimode
919 1116 759 9	8-port switch with 4 ports PoE Class 8 for rail mounting in the network node
223 7001 175 8	Retrofit kit for additional devices headset, microphone and foot switch with 8-pin M12 round connector, consisting of exchangeable back panel, printed circuit board assemblies with connection cable
223 7101 175 9	Retrofit kit for additional devices, monitor loudspeaker, relay contact with additional component supply DC 24V/15W with 8-pole M12 round plug connector, consisting of exchangeable back panel and connection cable
999 1980 088 1	T-piece for connecting 2 additional devices to an 8-pole M12 round connector
223 7201 175 0	Headset with PTT button integrated in the line and 8-pin M12 circular connector
223 7301 175 1	External handheld microphone with PTT button and 8-pin M12 circular connector
223 7401 175 2	External foot switch with 8-pin M12 round connector
221 6001 666 0	30W Class-D auxiliary amplifier
229 8001 666 0	DS-22 module for tool-free connection of installation cables
229 8101 666 1	DS-22 module for connecting installation cables with LSA+ fastening
229 8301 666 3	DS-22 module UTP extender for range extension to 500m and power supply via PoE
229 8401 666 4	DS-22 module fibre optic single-mode pair for range extension to 10km with fibre optic interface: SC
229 8501 666 5	DS-22 module fibre optic multi-mode pair for range extension to 4km with fibre optic interface: SC
1 952 7	Pedestal golden yellow RAL 1004 for call stations with 100mm width
1 953 8	Pedestal pure orange RAL 2004 for call stations with 100mm width
1 925 7	Add-on housing with closed cover golden yellow RAL 1004
1 926 8	Add-on housing with closed cover pure orange RAL 2004
1 965 1	Intermediate flange for mounting 2 units side by side on a pedestal
649 0109 031 3	Weatherproof sound-absorbing bonnet for outdoor use
649 0109 004 3	Sound-absorbing bonnet for indoor use
212 3408 261 9	Protective cover RAL 2004 small, V2A Dimensions: 600mm x 300mm x 250mm
979 4413 561 9	Hexagon spanner SW5 for hexagon socket screws on the housing cover
214 1621 002 9	Cover plug bolt for unused toggles
229 9001 814 6	Square toggle
229 9101 814 7	Triangular toggle
919 1250 011 9	Replacement battery

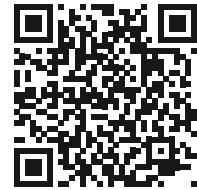
Neumann Elektronik GmbH owns a registered trademark (brand). Other products and company names mentioned are trademarks or registered trademarks of their respective owners.

Misprints, errors, technical or other changes as well as changes in the availability of individual products are expressly reserved. © Neumann Elektronik GmbH, 2023

## Neumann Elektronik system overview



<https://neumann-elektronik.com/system-overview>



Neumann Elektronik GmbH

Lahnstrasse 31-33  
45478 Mülheim an der Ruhr  
Germany

[info@neumann-elektronik.com](mailto:info@neumann-elektronik.com)  
[www.neumann-elektronik.com](http://www.neumann-elektronik.com)

Tel: +49 208 40 944 0  
Fax: +49 208 40 944 260

