

ULTRASHARP MONITORS

U2723QE, U3223QE

Expand your productivity

With a Dell dual monitor setup, users can increase productivity by up to 21%.⁵



Stretch productivity

Experience uncompromised picture quality by daisy-chaining two 4K monitors with DSC (Display Stream Compression) technology.

Virtually borderless

Get a seamless view across a multi-monitor setup with the virtually borderless InfinityEdge design.

Effortless setup

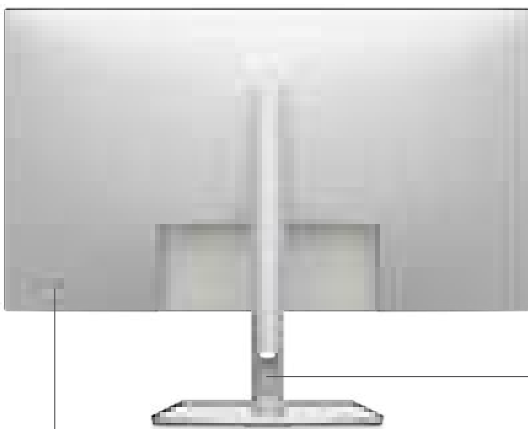
The OSD (Onscreen Menu Display) settings from one monitor can be synchronized across connected monitors for an effortless multi-monitor setup.⁶

World's first 27" and 31.5" 4K monitors which allow daisy chaining of an additional 4K monitor at full resolution via USB-C—enabled by Display Stream Compression (DSC).[†]

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A step forward in design

Crafted with a premium platinum silver finish, these stylish Dell UltraSharp monitors shine in both home and office environments.



Easy-to-use joystick control

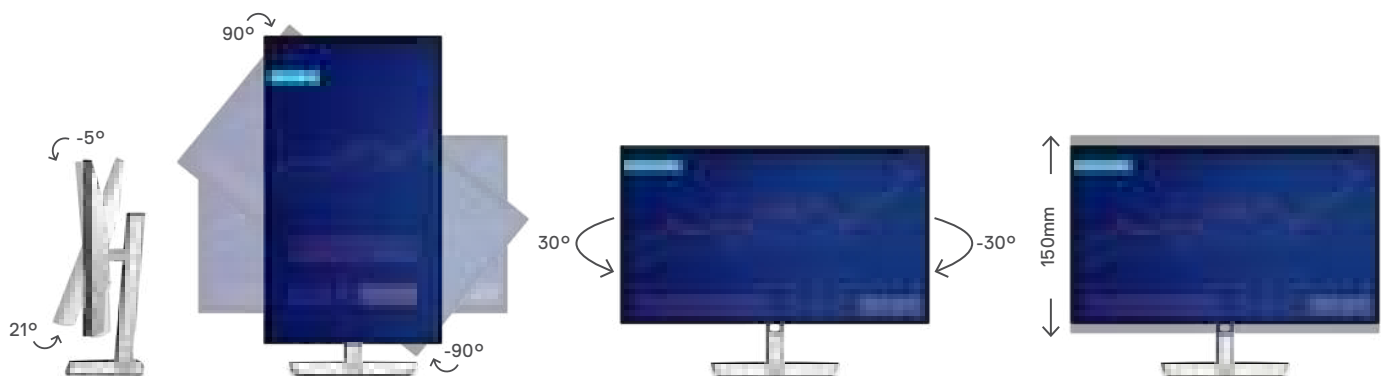
Navigate the on-screen menu and adjust settings with the easy-to-use joystick control.

Designed with purpose

The small base and elegant cable management system hide cords within the monitor riser.

Adjust to your comfort

Experience made-for-you comfort by tilting, pivoting, swiveling, and adjusting the height of your monitor (150mm max).



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Enhanced productivity

Dell Display Manager enhances everyday productivity through comprehensive management tools, giving you optimal front of screen experience, efficient display management, and easy, effortless multitasking.

Productive at every level

Easy Arrange allows you to easily tile multiple applications across one or more screens with 38 pre-set window partitions and the ability to personalize up to five windows, giving you improved multitasking abilities.

The key to convenience

Shortcut keys can save you even more time, letting you easily configure your display management settings so you can get to work faster.

Seamless transitions

The auto-restore feature remembers where you left off, so applications will go back to where you left them, even after you've unplugged.

Expanded compatibility

With support for multiple operating systems⁷, Dell Display Manager helps you stay productive however you work.

More ways to manage

Asset management reports allow IT managers to quickly capture and track monitor information as well as configure multiple monitors at once through a single setup.

Learn more about [Dell Display Manager](#).





RECOMMENDED ACCESSORIES



Dell UltraSharp Webcam | WB7022

Experience best image quality in its class with the world's most intelligent 4K webcam.⁸



Dell Premier Wireless ANC Headset | WL7022

Collaborate with ease anywhere with this Teams-certified wireless headset which offers active noise cancelation and smart sensors that automatically mute and unmute your call.



Dell Premier Multi- Device Wireless Keyboard and Mouse | KM7321W

Multitask seamlessly across three devices with this premium full-sized keyboard and sculpted mouse combo with programmable shortcuts and 36-month battery life.⁹

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Sustainability on Dell Monitors



Environmental standards

This monitor is made of 85% post-consumer recyclable plastic in the design¹⁰ and meets the latest environmental standards such as ENERGY STAR®, and TCO Certified Edge, and is EPEAT® Gold¹¹ registered.

Eco-conscious packaging

Designed with the environment in mind, Dell commercial monitors come in 100% recyclable cardboard packaging.¹²

Energy conservation

Save energy when your monitor is not in use with PowerNap¹³, a feature that dims or puts your monitor to sleep when it's not in use.

ULTRASHARP MONITORS

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ULTRASHARP 27 4K USB-C HUB MONITOR – U2723QE TECHNICAL SPECIFICATION

DIAGONAL VIEWING SIZE	68.47 cm 27 inches
PRESET DISPLAY AREA (H X V)	596.74 mm x 335.66 mm 23.49" x 13.21"
MAXIMUM PRESET RESOLUTION	3840 x 2160 @ 60Hz
PANEL TYPE	IPS Black Technology
DISPLAY SCREEN COATING	Anti-glare treatment of the front polarizer (3H) hard coating
VIEWING ANGLE	178° vertical / 178° horizontal
PIXEL PITCH	0.1554 mm x 0.1554 mm
PIXEL PER INCH (PPI)	163.18
CONTRAST RATIO	2000 to 1 (typical)
ASPECT RATIO	16:9
BACKLIGHT TECHNOLOGY	LED
BRIGHTNESS	400 cd/m ² (typical)
COLOR GAMUT	100% sRGB, 100% Rec.709, 98% DCI-P3, Delta E < 2 (Average) for sRGB, Rec.709, DCI-P3, 1.07 billion colors
RESPONSE TIME	5 ms gray to gray in Fast mode 8 ms gray to gray in Normal mode
HDR READY	Yes, DisplayHDR 400
CONNECTIVITY	1 x DP 1.4 with DSC Support (HDCP 2.2) 1 x HDMI 2.0 (HDCP 2.2) 1 x USB-C with DSC support (DP 1.4, HDCP 2.2), Power Delivery up to 90W, 2/4 Lanes switch-upstream 1 x USB-C (USB 3.2 Gen 2, 10Gbps KVM) Upstream port, Data Only 1 x DP (Out) 4 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) downstream ports 1 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) with B.C 1.2 1 x USB-C (USB 3.2 Gen 2, 10Gbps, Up to 15W charging) downstream port 1 x Analog 2.0 audio line-out (3.5mm jack) 1 x RJ45 Port
ADJUSTABILITY	Height adjustable (150 mm) Tilt (-5° to 21°) Swivel (-30° to 30°) Pivot (-90° to 90°)
PBP / PIP	PbP (Yes) PiP (Yes)
KEYBOARD, VIDEO AND MOUSE (KVM)	Yes, KVM and Auto-KVM
DAISY CHAIN AVAILABILITY	Yes
AUDIO OUTPUT	1 x Audio line-out ¹⁴
BUILT-IN SPEAKER	No
DELL DISPLAY MANAGER COMPATIBILITY	Yes, Easy Arrange, Other key features
SPECIFICATIONS - SERVICE / SUPPORT DETAILS	3-Year Advanced Exchange Service and Premium Panel Exchange
HEIGHT WITH STAND (COMPRESSED ~ EXTENDED)	385.18 mm ~ 535.18 mm 15.16" ~ 21.07"
WIDTH WITH STAND	611.4 mm 24.07"
DEPTH WITH STAND	185.0 mm 7.28"
HEIGHT WITHOUT STAND	353.01 mm 13.89"
WIDTH WITHOUT STAND	611.44 mm 24.07"
DEPTH WITHOUT STAND	54.33 mm 2.14"

ULTRASHARP 32 4K USB-C HUB MONITOR – U3223QE TECHNICAL SPECIFICATION

DIAGONAL VIEWING SIZE	80.01 cm 31.5 inches
PRESET DISPLAY AREA (H X V)	697.31 mm x 392.23 mm 27.45" x 15.44"
MAXIMUM PRESET RESOLUTION	3840 x 2160 @ 60Hz
PANEL TYPE	IPS Black Technology
DISPLAY SCREEN COATING	Anti-glare treatment of the front polarizer (3H) hard coating
VIEWING ANGLE	178° vertical / 178° horizontal
PIXEL PITCH	0.18159 mm x 0.18159 mm
PIXEL PER INCH (PPI)	137.68
CONTRAST RATIO	2000 to 1 (typical)
ASPECT RATIO	16:9
BACKLIGHT TECHNOLOGY	LED
BRIGHTNESS	400 cd/m ² (typical)
COLOR GAMUT	100% sRGB, 100% Rec.709, 98% DCI-P3, Delta E < 2 (Average) for sRGB, Rec.709, DCI-P3, 1.07 billion colors
RESPONSE TIME	5 ms gray to gray in Fast mode 8 ms gray to gray in Normal mode
HDR READY	Yes, DisplayHDR 400
CONNECTIVITY	1 x DP 1.4 with DSC Support (HDCP 2.2) 1 x HDMI 2.0 (HDCP 2.2) 1 x USB-C with DSC support (DP 1.4, HDCP 2.2) Power Delivery up to 90W, 2/4 Lanes switch-upstream 1 x USB-C (USB 3.2 Gen 2, 10Gbps KVM) Upstream port, Data Only 1 x DP (Out) 4 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) downstream ports 1 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) with B.C 1.2 1 x USB-C (USB 3.2 Gen 2, 10Gbps, Up to 15W charging) downstream port 1 x Analog 2.0 audio line-out (3.5mm jack) 1 x RJ45 Port
ADJUSTABILITY	Height adjustable (150 mm) Tilt (-5° to 21°) Swivel (-30° to 30°) Pivot (-90° to 90°)
PBP / PIP	PbP (Yes) PiP (Yes)
KEYBOARD, VIDEO AND MOUSE (KVM)	Yes, KVM and Auto-KVM
DAISY CHAIN AVAILABILITY	Yes
AUDIO OUTPUT	1 x Audio line-out ¹⁴
BUILT-IN SPEAKER	No
DELL DISPLAY MANAGER COMPATIBILITY	Yes, Easy Arrange, Other key features
SPECIFICATIONS - SERVICE / SUPPORT DETAILS	3-Year Advanced Exchange Service and Premium Panel Exchange
HEIGHT WITH STAND (COMPRESSED ~ EXTENDED)	469.34 mm ~ 618.77 mm 18.48" ~ 24.36"
WIDTH WITH STAND	712.61 mm 28.06"
DEPTH WITH STAND	233.17 mm 9.18"
HEIGHT WITHOUT STAND	410.04 mm 16.14"
WIDTH WITHOUT STAND	712.61 mm 28.06"
DEPTH WITHOUT STAND	55.78 mm 2.2"

ULTRASHARP MONITORS

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ULTRASHARP 27 4K USB-C HUB MONITOR – U2723QE TECHNICAL SPECIFICATION

WEIGHT (PANEL ONLY - FOR VESA MOUNT)	4.48 kg 9.88 lb
WEIGHT (WITH STAND ASSEMBLY AND CABLES)	6.64 kg 14.64 lb
WEIGHT (WITH PACKAGING)	9.53 kg 21.01 lb
SECURITY	Security lock slot (cable lock sold separately) Anti-theft stand lock slot (to panel)
COMPLIANT STANDARDS	- ENERGY STAR® Certified Monitor - EPEAT® Gold registered where applicable - RoHS Compliant - TCO Certified Edge - BFR/PVC Free (Halogen-free) (excluding external cables) - Arsenic-Free glass and Mercury-Free for the panel only
FLAT PANEL MOUNT INTERFACE	VESA mounting holes (100 mm x 100 mm - behind attached VESA Cover)
TEMPERATURE RANGE	Operating: 0°C to 35°C (32°F to 95°F) Non-operating: -20°C to 60°C (-4°F to 140°F)
HUMIDITY RANGE	Operating: 10% to 80% (non-condensing) Non-Operating: 5% to 90% (non-condensing) - Storage and Shipping
ALTITUDE	Operating: 3658 m (12000 ft) max Non-Operating: 3716 m (12191 ft) max
VOLTAGE REQUIRED	100 VAC to 240 VAC / 50 Hz or 60 Hz+3 Hz/2.7 A (max)
ENERGY EFFICIENCY CLASS (A TO G SCALE)	F
POWER CONSUMPTION NORMAL OPERATION	0.2 W (Off Mode) 0.3 W (Standby Mode) 25.9 W (On Mode) 220 W (Max)
WHAT'S INCLUDED	Monitor, Stand Riser, Stand Base 1 x Power cable 1 x Type-C (C-C cable) - 1 m 1 x DP cable (DP to DP) - 1.8 m 1 x super speed USB (Type-A to Type-C) Factory calibration report Quick setup guide Safety, Environmental and Regulatory Information

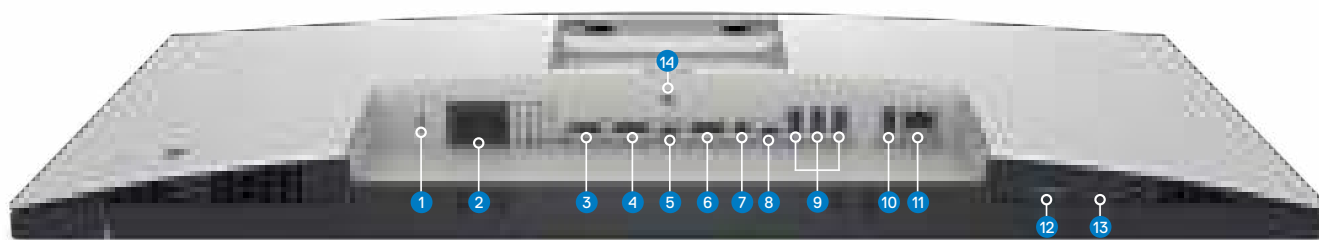


ULTRASHARP 32 4K USB-C HUB MONITOR – U3223QE TECHNICAL SPECIFICATION

WEIGHT (PANEL ONLY - FOR VESA MOUNT)	5.65 kg 12.46 lb
WEIGHT (WITH STAND ASSEMBLY AND CABLES)	10.36 kg 22.84 lb
WEIGHT (WITH PACKAGING)	14.49 kg 31.94 lb
SECURITY	Security lock slot (cable lock sold separately) Anti-theft stand lock slot (to panel)
COMPLIANT STANDARDS	- ENERGY STAR® Certified Monitor - EPEAT® Gold registered where applicable - RoHS Compliant - TCO Certified Edge - BFR/PVC Free (Halogen-free) (excluding external cables) - Arsenic-Free glass and Mercury-Free for the panel only
FLAT PANEL MOUNT INTERFACE	VESA mounting holes (100 mm x 100 mm - behind attached VESA Cover)
TEMPERATURE RANGE	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -20°C to 60°C (-4°F to 140°F)
HUMIDITY RANGE	Operating: 10% to 80% (non-condensing) Non-Operating: 5% to 90% (non-condensing) - Storage and Shipping
ALTITUDE	Operating: 5000 m (16404 ft) max Non-Operating: 12192 m (40000 ft) max
VOLTAGE REQUIRED	100 VAC to 240 VAC/ 50 Hz or 60 Hz+3 Hz/2.7 A (typical)
ENERGY EFFICIENCY CLASS (A TO G SCALE)	F
POWER CONSUMPTION NORMAL OPERATION	0.2 W (Off Mode) 0.3 W (Standby Mode) 29.4 W (On Mode) 220 W (Max)
WHAT'S INCLUDED	Monitor, Stand Riser, Stand Base 1 x Power cable 1 x Type-C (C-C cable) - 1 m 1 x DP cable (DP to DP) - 1.8 m 1 x super speed USB (Type-A to Type-C) Factory calibration report Quick setup guide Safety, Environmental and Regulatory Information



PORTS AND SLOTS



- | | | | |
|--|---|--|--|
| 1 Security lock slot** | 6 DisplayPort (out) | 10 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A | 13 USB-C Downstream port (10Gbps, 15W) |
| 2 Power connector | 7 Audio line-out port | 11 RJ45 port | 14 Stand lock |
| 3 HDMI port | 8 USB-C Upstream port (data only) | 12 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A Downstream port with Power Charging | |
| 4 DisplayPort | 9 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A Downstream port | | |
| 5 USB-C Upstream port (video and data, up to 90W power delivery) | | | |

U2723QE, U3223QE

Steadfast reliability

As the No. 1 monitor company worldwide*, we take pride in our unyielding commitment to quality and the utmost in customer satisfaction.

Premium Panel Exchange

Dell Premium Panel Exchange¹⁵ allows a free monitor replacement during the Limited Hardware Warranty¹⁶ period, even if only one bright pixel is found.

Advanced Exchange Service

Your monitor comes with a 3-year Advanced Exchange Service¹⁷ so that if a replacement becomes necessary, it will be shipped to you the next business day during your 3-year Limited Hardware Warranty.¹⁶

ProSupport

Upgrade to 24x7 specialized technical phone support with the Dell ProSupport option.¹⁸

* Dell monitors are #1 Worldwide for 8 consecutive years (2013, Q2 to 2021, Q3)! Source: IDC Worldwide Quarterly PC Monitor Tracker, Q3, 2021.

** Based on Kensington Security Slot™

^ Based on Dell analysis of publicly available data, August 2021.

† Based on Dell analysis of publicly available data, August 2021; applicable only to Dell 4K monitors that feature Display Stream Compression technology.

1 Dell adheres to standard USB-C specifications and protocol. Functionality with non-Dell USB-C systems may vary.

2 Via quick access USB-C port.

3 The power sync feature on this Dell USB-C Monitor enables start up and wake-on-demand on compatible Dell PCs. Please check your Dell PC to ensure support of this feature.

4 MAC Address pass-through functionality is tested to work with most Dell PC systems. Functionality on non-Dell systems may vary.

5 Source: Based on Principled Technologies Report commissioned by Dell, November 2018. Actual results will vary. Full report: https://www.principledtechnologies.com/Dell/P2419H_monitor_productivity_1118.pdf

6 Limited to select OSD functions; applies to daisy-chained monitors via DP. Please refer to the User Guide for the full list.

7 Available for Windows 10 and above, and Mac OS 10.12 and above. Please refer to dell.com/ddm or full compatibility list and OS support

8 Based on internal analysis of external 4K personal conferencing webcams, April 2021.

9 Based on Dell analysis of battery life usage model calculations, Nov. 2020. Results vary depending on use, operating conditions and other factors.

10 By weight of the total weight of plastic parts in product. Excludes printed circuit boards, labels, cables, connectors, electronic components, optical components, ESD components, EMI components adhesives, and coatings.

11 EPEAT registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.

12 The outer box/corrugate cushion packaging and recycled fibers in Dell commercial monitor packaging (excluding D-series) are made from corrugate and virgin cardboard materials. Excludes foam cushioning and plastic bags.

13 Enabled by Dell Display Manager

14 Connect to Speakers. Headphone use is not supported on the audio line-out port.

15 Applicable to Dell UltraSharp, P Series, and C Series desktop monitors.

16 For copy of Ltd Hardware Warranty, write to Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see <https://www.dell.com/warranty>.

17 Advanced Exchange: Dell will send you a replacement monitor the next business day in most cases if deemed necessary after phone/online diagnosis. Shipping times may vary by location and for monitors 55" and above. Fee charged for failure to return defective unit. See dell.com/servicecontracts/global.

18 Availability varies, please visit www.dell.com/support for details. In some countries, hours for in-region support may vary. Support after local business hours may be provided in a language other than the local language.

Technical specifications subject to change without prior notice. Product availability varies by country. Please contact your Dell representative for more information.

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22. FISA TEHNICĂ: E- CSMG – CALCULATOR SUPERVIZARE MĂSURARE GAZE

[illegible]

	○ Port extern conexiune mouse: USB; ○ Rezoluție video intrare: minim 1600 x 1200 ○ Contrast: 1000:1; ○ Alimentare: AC 110-240V; 50-60 Hz. ○ Accesorii incluse: Kit de rack-are; Cabluri SPHD-18;	DA DA DA DA DA	
	1.4 Cerințe software • Cele două calculatoare de supervizare măsurare gaze se vor livra cu sisteme de operare licențiate și aplicații software licențiate specifice și de asemenea aplicații tabelare tip MS Excel necesare pentru prelucrare datelor. • Se va actualiza aplicația existentă de supervizare măsurare gaze, tip eXlerate, la ultima versiune disponibilă. • Licența va acoperi minimum modulele de operare existente (runtime) precum și numărul de tag-uri necesare punerii în funcțiune. Cerințele tehnice sunt descrise în Caietul de Sarcini, cap.3 Produse, A. SISTEM DE SUPERVIZARE MĂSURARE GAZE NATURALE. • Sistem de operare Windows 11 Pro sau ultima versiune disponibilă pe piață, compatibilă cu software-ul eXlerate. • Licență Microsoft Office: ultima versiune disponibilă pe piață, versiune 32Biți. • Orice alte aplicații software necesare pentru punerea în funcțiune a sistemului conform cerințe tehnice Caiet de Sarcini.	DA DA DA DA DA DA	
	1.3 Conectivitate: • conectare cu PLC din sistemul de automatizare locală; • conectarea cu calculatoarele de debit din sistemele de măsurare; • conectare cu gazcromatograful și cu aparatele de determinare a punctului de rouă apă, respectiv hidrocarburi • conectare prin sistemul de fibră optică existent cu sistemul de servere supervizare măsurare gaze din Dispeceratul SCADA VMTG din Ghidighici (Chișinău) • conectare cu sistemul monitorizare parametrii tehnologici gaze din România • se configura minim 3 clase de IP diferite pentru adresarea independentă a rețelelor locale, cu sistemul monitorizare parametrii tehnologici gaze din România și cu sistemul de servere supervizare măsurare gaze din Dispeceratul SCADA VMTG din Ghidighici (Chișinău) Se pot utiliza diferite protocoale de comunicație, astfel: • Modbus cu variantele RTU Master sau Slave și TCP Client sau Server • OPC cu variantele Client și Server • HART • NTP sau similar. Serverele vor prelua automat ceasul din serverul de timp și vor asigura sincronizarea de ceas automată pentru toate echipamentele subordonate de	DA DA DA DA DA DA DA DA DA DA DA DA	

	tipul instrumentației, care au disponibilă această funcționalitate. Orice alte protocoale de comunicație necesare pentru punerea în funcțiune a sistemului conform cerințe tehnice Caiet de Sarcini.	DA	
2.	Specificații de performanță și condiții privind siguranța în exploatare Cele două calculatoare de supervizare vor fi redundante, astfel încât la defectarea unuia din cele două calculatoare toate funcțiile și informațiile să fie susținute/disponibile de echipamentul valid. Se va asigura compatibilitate și suport pentru familia de procesoare Intel Interfață de management server securizată de la distanță dedicată și utilizată pentru: simplificarea configurării serverului, monitorizării sănătății, precum și a consumului de putere și control termic;		
3.	Condiții privind conformitatea cu standarde relevante: Conform standardelor naționale și europene în vigoare, cel puțin: - ACPI 6.1 - PCIe 4.0 - PXE - VGA Port - USB 3.1 Gen1 - Energy Star 3.0 - SMBIOS 3.1 - UEFI 2.6 - Redfish API - IPMI 2.0 - Secure Digital 2.0 - Advanced Encryption Standard (AES) - Triple Data Encryption Standard (3DES) - SNMP v3 - TLS 1.2 - DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP) - Active Directory v1.0, sau similare		
4.	Condiții de garanție și postgaranție: Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune. Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. Vor fi anexate: - instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); - instrucțiuni de exploatare; - buletine de încercări, verificări, probe; - declarație de conformitate.		





POWEREDGE R740

Optimized for workload acceleration

The PowerEdge R740 was designed to accelerate application performance leveraging accelerator cards and storage scalability. The 2-socket, 2U platform has the optimum balance of resources to power the most demanding environments.

Expand and optimize application performance

The scalable business architecture of the R740 can scale up to three 300W or six 150W GPUs, or up to three double-width or four single-width FGAs. With up to 16 2.5" drives or 8 3.5" drives the R740 provides the versatility to adapt to virtually any application and provides the perfect platform for VDI deployments.

- Scale your VDI deployments with 3 double-width GPUs, supporting up to 50% more users when compared to R730.
- Free up storage space using internal M.2 SSDs optimized for boot.
- Scale compute resources with 2nd Generation Intel® Xeon® Scalable processors and tailor performance based on your unique workload requirements.

Automate systems management with OpenManage

The Dell EMC OpenManage™ portfolio helps deliver peak efficiency for PowerEdge servers, delivering intelligent, automated management of routine tasks. Combined with unique agent-free management capabilities, the R740 is simply managed, freeing up time for high profile projects.

- Simplify management with the New OpenManage Enterprise™ console, with customized reporting and automatic discovery.
- Take advantage of QuickSync 2 capabilities and gain access to your servers easily through your phone or tablet.

Rely on PowerEdge with built-in security

Every PowerEdge server is designed as part of a cyber resilient architecture, integrating security into the full server lifecycle. The R740 leverages new security features built-into every new PowerEdge server strengthening protection so you can reliably and securely deliver accurate data to your customers no matter where they are. By considering each aspect of system security, from design to retirement, Dell EMC ensures trust and delivers a worry-free, secure infrastructure without compromise.

- Rely on a secure component supply chain to ensure protection from factory to the data center.
- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Protect your server from malicious malware with iDRAC9 Server Lockdown mode (requires Enterprise or Datacenter license)
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

PowerEdge R740

Persistent Memory NVDIMM-N can increase database performance by 10x

PowerEdge R740

Features	Technical Specification	
Processor	Up to two 2 nd Generation Intel® Xeon® Scalable processors, up to 28 cores per processor	
Memory	24 DDR4 DIMM slots, Supports RDIMM /LRDIMM, speeds up to 2933MT/s, 3TB max Up to 12 NVDIMM, 192 GB Max Up to 12 Intel® Optane™ DC persistent memory PMem, 6.14TB max (7.68TB max with PMem + LRDIMM) Supports registered ECC DDR4 DIMMs only	
Storage controllers	Internal Controllers: PERC H330, H730P, H740P, HBA330 External Controllers: H840, 12 Gbps SAS HBA Software RAID:S140	
Internal Boot	Boot Optimized Storage Subsystem (BOSS):HWRaid 2 x M.2 SSDs 240GB, 480GB Internal Dual SD Module ¹	
Storage	Front drive bays: Up to 16 x 2.5" SAS/SATA (HDD/SSD) max 122.88TB or up to 8 x 3.5" SAS/SATA HDD max 128TB Optional DVD-ROM, DVD+RW	
Power supplies	Titanium 750W, Platinum 495W, 750W, 750W 240VDC, ² 1100W, 1100W 380VDC ² 1600W, 2000W and 2400W, Gold 1100W -48VDC	Hot plug power supplies with full redundancy Up to 6 hot plugs fans with full redundancy
Dimensions	Form factor: Rack (2U)	Height: 86.8mm (3.4") Width ³ : 434.0mm (17.08") Depth ³ : 737.5mm (29.03") Weight: 28.6kg (63lbs.)
Embedded management	iDRAC9, iDRAC Direct, iDRAC RESTful with Redfish, Quick Sync 2 wireless module (optional)	
Bezel	Optional LCD Bezel or Security bezel	
OpenManage™ Software	OpenManage Enterprise	OpenManage Mobile OpenManage Power Manager
Integrations and connections	Integrations: Microsoft® System Center VMware® vCenter™ BMC Truesight Red Hat® Ansible® Modules	Connections: Nagios® Core & Nagios® XI Micro Focus Operations Manager I IBM Tivoli Netcool/OMNIBus
Security	TPM 1.2/2.0, TCM 2.0 optional Cryptographically signed firmware Secure Boot	System Lockdown (requires iDRAC Enterprise or Datacenter) Secure erase Silicon Root of Trust
I/O & Ports	Network daughter card options 4 x 1GbE or 2 x 10GbE + 2 x 1GbE or 4 x 10GbE or 2 x 25GbE Front ports: 1 x Dedicated iDRAC Direct Micro-USB, 2 x USB 2.0, 1 x USB 3.0 (optional), 1 x VGA Rear ports: 1 x Dedicated iDRAC network port, 1 x Serial, 2 x USB 3.0, 1 x VGA Video card: 2 x VGA Riser options with up to 8 PCIe Gen 3 slots, maximum of 4 x 16 slots	
Accelerator options	Up to three 300W or six 150W GPUs, or up to three double-width or four single-width FPGAs.	See Dell.com/GPU for latest information.
Supported operating systems	Canonical® Ubuntu® Server LTS Citrix® Hypervisor Microsoft Windows Server® LTSC with Hyper-V Oracle® Linux	Red Hat® Enterprise Linux SUSE® Linux Enterprise Server VMware® ESXi For specifications and interoperability details, see Dell.com/OSsupport .
OEM-ready version available	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit Dell.com/OEM .	
Recommended support	Dell EMC ProSupport Plus for critical systems or Dell EMC ProSupport for premium hardware and software support for your PowerEdge solution. Consulting and deployment offerings are also available. Contact your Dell EMC representative today for more information. Availability and terms of Dell EMC Services vary by region. For more information, visit Dell.com/ServiceDescriptions .	

¹ ESXi (only OS supported)

² Only available in China and Japan

³ Dimensions do not include bezel

Learn more at Dell.com/PowerEdge

End-to-end technology solutions

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell EMC for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell EMC Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell EMC Financial Services™ has a wide range of options to make technology acquisition easy and affordable. Contact your Dell EMC Sales Representative for more information.*

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23. FISA TEHNICĂ: E-MSMG - MONITOR SUPERVIZARE MĂSURĂRE GAZE

[illegible]

	• instrucțiuni de exploatare; • buletine de încercări, verificări, probe; • declarație de conformitate.		
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DELL ULTRASHARP
27 AND 32 4K
USB-C HUB
MONITORS

U2723QE

U3223QE

See it all as it was intended



DELL Technologies

THE WORLD'S # 1
MONITOR COMPANY*

U2723QE, U3223QE

See it all as it was intended

Be your most productive on the world's first monitors with IPS Black technology[^]. These UltraSharp 27" and 31.5" 4K USB-C Hub monitors deliver brilliant color and contrast and come with extensive connectivity options and multitasking features.



Brilliance—because it matters

Power through your tasks in 4K clarity, incredible color and exceptional contrast with groundbreaking IPS Black technology. These 27" and 31.5" 4K monitors come with a wide color gamut and VESA certified DisplayHDR 400 for true-to-life visuals.

Peak productivity

Streamline any workplace with USB-C Hub monitors that connect you to the Ethernet and a host of other devices. Stretch productivity with a dual 4K monitor set up and multitask efficiently with KVM, Picture-by-Picture and Picture-in-Picture.

Skillfully crafted

Sophisticated with a premium finish, these monitors fit any environment. Enjoy edge-to-edge views with the virtually borderless InfinityEdge design. Easy-to-use with full adjustability, you'll work comfortably all day.

U2723QE, U3223QE

World's first monitors with
IPS Black technology^

**See more in
outstanding clarity**

4K (3840 x 2160)
resolution on a large
31.5" (U3223QE) or 27"
(U2723QE) monitor

Exceptional contrast

See incredible color and
superior black performance
with a contrast ratio of 2,000:1
on the world's first monitors
with IPS Black technology^

True brilliance

Experience true-to-life visuals with
1.07 billion colors, a wide color
gamut including 100% sRGB, 100%
Rec. 709, 98% DCI-P3, and VESA
Certified DisplayHDR™ 400

Virtually borderless

InfinityEdge for a
seamless view across
multiple monitors

Daisy chain two 4K
monitors and get
uncompromised
picture quality with
**DSC (Display Stream
Compression)**
technology

Optimize eye
comfort with built-in
ComfortView Plus
that reduces harmful
blue light emissions
without sacrificing color
performance

Adjust to your comfort

Tilt, swivel, pivot, and
height adjustable
(150mm max)

**Easy-to-use
joystick control**

To navigate through
the On-Screen
Display (OSD) menu

**Premium platinum
silver finish**

For a polished look that
complements the home
and office

ENERGY STAR®
TCO Certified Edge,
EPEAT® Gold registered

Connect 2 PC sources
and multitask efficiently
with **Picture-by-Picture/**
Picture-in-Picture and
KVM (with **Auto KVM**)

These productivity hub
monitors come with
USB-C (up to 90W power
delivery), **RJ45** (wired
Ethernet), **super speed**
USB 10Gbps, and **quick**
access front ports



Click to explore:

Dell UltraSharp 27 4K USB-C Hub Monitor – U2723QE

Dell UltraSharp 32 4K USB-C Hub Monitor – U3223QE

U2723QE, U3223QE

See brilliant visuals with groundbreaking
IPS Black technology

Exceptional contrast

See incredible color and deeper blacks with a contrast ratio of 2,000:1 on the world's first monitors with IPS Black technology.[^] With a wide 178°/178° viewing angle, images remain spectacular, from virtually any angle.

True brilliance

With 4K resolution, 1.07 billion colors, a wide color gamut (100% sRGB, 100% Rec. 709, 98% DCI-P3) and VESA DisplayHDR 400, images are displayed in outstanding color and clarity.

Enhanced eye comfort

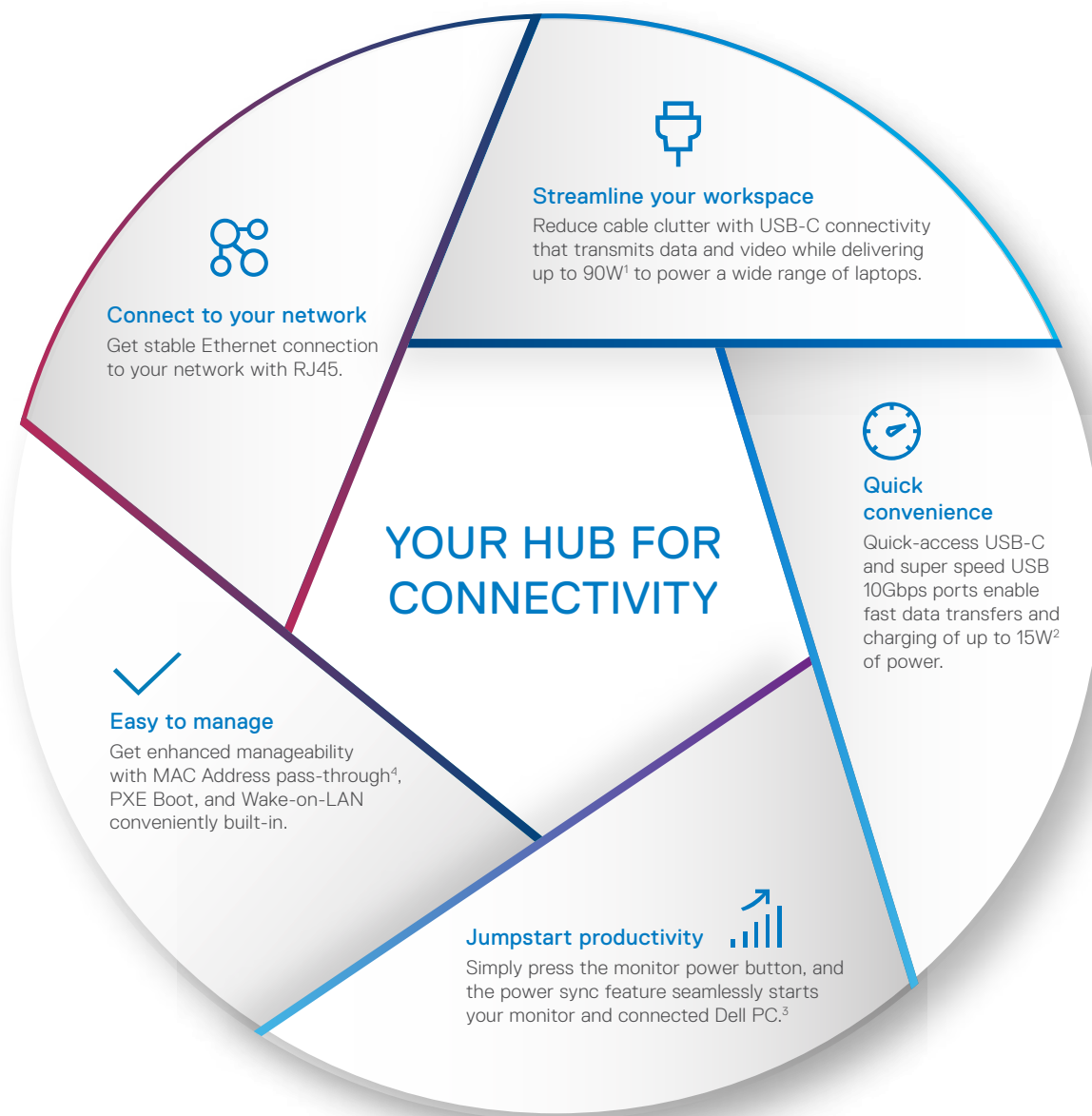
ComfortView Plus—an always-on, built-in low blue light screen—reduces potentially harmful blue light emissions without compromising color.



U2723QE, U3223QE

Connectivity that drives productivity

These USB-C Hub monitors offer extensive connectivity options including USB-C (up to 90W power delivery), RJ45 for wired Ethernet access, super speed USB for fast data transfers, and more.



U2723QE, U3223QE

Work on content from two connected PCs for multitasking efficiency

Productivity unlocked

- Connect two PC sources and the Auto KVM feature seamlessly switches controls over to the second connected PC.
- Use KVM (keyboard, video, and mouse) to control both PCs with a single keyboard and mouse.
- View content from both PCs at the same time with Picture-by-Picture (PBP) and Picture-in-Picture (PIP).



Picture-in-Picture (PIP)

Work on applications from one PC and view content in an inset window from another PC.



Picture-by-Picture (PBP)

View content from two different PC sources side-by-side on the screen, similar to a dual monitor setup.

ULTRASHARP MONITORS

U2723QE, U3223QE

Expand your productivity

With a Dell dual monitor setup, users can increase productivity by up to 21%.⁵



Stretch productivity

Experience uncompromised picture quality by daisy-chaining two 4K monitors with DSC (Display Stream Compression) technology.

Virtually borderless

Get a seamless view across a multi-monitor setup with the virtually borderless InfinityEdge design.

Effortless setup

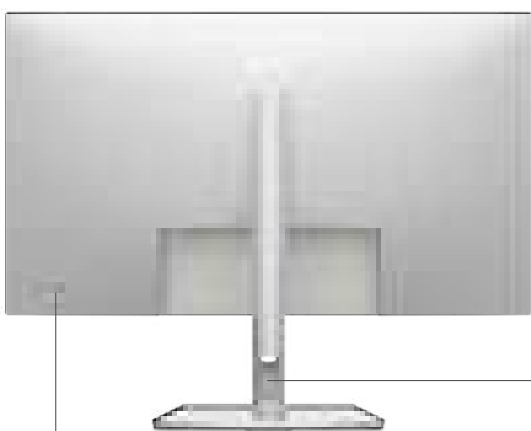
The OSD (Onscreen Menu Display) settings from one monitor can be synchronized across connected monitors for an effortless multi-monitor setup.⁶

World's first 27" and 31.5" 4K monitors which allow daisy chaining of an additional 4K monitor at full resolution via USB-C—enabled by Display Stream Compression (DSC).[†]

U2723QE, U3223QE

A step forward in design

Crafted with a premium platinum silver finish, these stylish Dell UltraSharp monitors shine in both home and office environments.



Easy-to-use joystick control

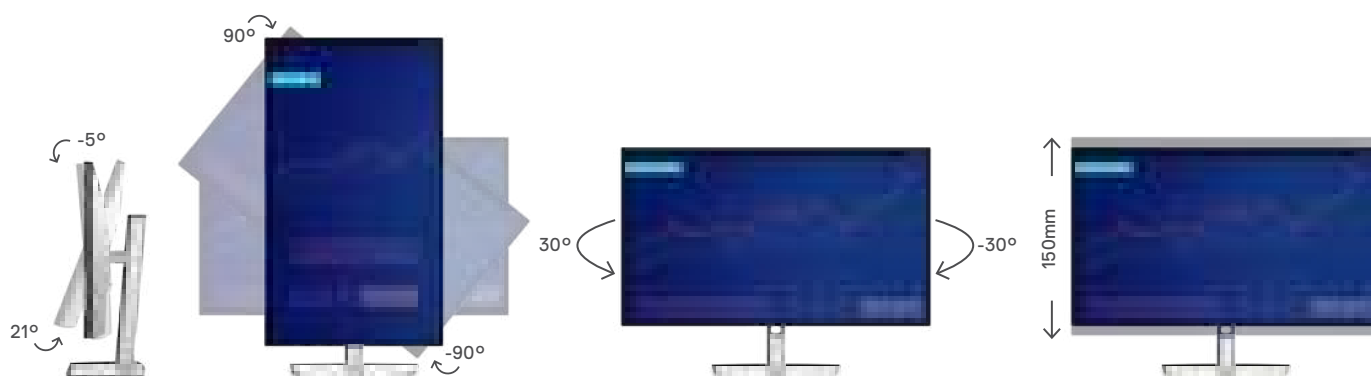
Navigate the on-screen menu and adjust settings with the easy-to-use joystick control.

Designed with purpose

The small base and elegant cable management system hide cords within the monitor riser.

Adjust to your comfort

Experience made-for-you comfort by tilting, pivoting, swiveling, and adjusting the height of your monitor (150mm max).



U2723QE, U3223QE

Enhanced productivity

Dell Display Manager enhances everyday productivity through comprehensive management tools, giving you optimal front of screen experience, efficient display management, and easy, effortless multitasking.

Productive at every level

Easy Arrange allows you to easily tile multiple applications across one or more screens with 38 pre-set window partitions and the ability to personalize up to five windows, giving you improved multitasking abilities.

The key to convenience

Shortcut keys can save you even more time, letting you easily configure your display management settings so you can get to work faster.

Seamless transitions

The auto-restore feature remembers where you left off, so applications will go back to where you left them, even after you've unplugged.

Expanded compatibility

With support for multiple operating systems⁷, Dell Display Manager helps you stay productive however you work.

More ways to manage

Asset management reports allow IT managers to quickly capture and track monitor information as well as configure multiple monitors at once through a single setup.

Learn more about [Dell Display Manager](#).





RECOMMENDED ACCESSORIES



Dell UltraSharp Webcam | WB7022

Experience best image quality in its class with the world's most intelligent 4K webcam.⁸



Dell Premier Wireless ANC Headset | WL7022

Collaborate with ease anywhere with this Teams-certified wireless headset which offers active noise cancelation and smart sensors that automatically mute and unmute your call.



Dell Premier Multi- Device Wireless Keyboard and Mouse | KM7321W

Multitask seamlessly across three devices with this premium full-sized keyboard and sculpted mouse combo with programmable shortcuts and 36-month battery life.⁹

U2723QE, U3223QE

Sustainability on Dell Monitors



Environmental standards

This monitor is made of 85% post-consumer recyclable plastic in the design¹⁰ and meets the latest environmental standards such as ENERGY STAR®, and TCO Certified Edge, and is EPEAT® Gold¹¹ registered.

Eco-conscious packaging

Designed with the environment in mind, Dell commercial monitors come in 100% recyclable cardboard packaging.¹²

Energy conservation

Save energy when your monitor is not in use with PowerNap¹³, a feature that dims or puts your monitor to sleep when it's not in use.

ULTRASHARP MONITORS

U2723QE, U3223QE

ULTRASHARP 27 4K USB-C HUB MONITOR – U2723QE TECHNICAL SPECIFICATION

DIAGONAL VIEWING SIZE	68.47 cm 27 inches
PRESET DISPLAY AREA (H X V)	596.74 mm x 335.66 mm 23.49" x 13.21"
MAXIMUM PRESET RESOLUTION	3840 x 2160 @ 60Hz
PANEL TYPE	IPS Black Technology
DISPLAY SCREEN COATING	Anti-glare treatment of the front polarizer (3H) hard coating
VIEWING ANGLE	178° vertical / 178° horizontal
PIXEL PITCH	0.1554 mm x 0.1554 mm
PIXEL PER INCH (PPI)	163.18
CONTRAST RATIO	2000 to 1 (typical)
ASPECT RATIO	16:9
BACKLIGHT TECHNOLOGY	LED
BRIGHTNESS	400 cd/m ² (typical)
COLOR GAMUT	100% sRGB, 100% Rec.709, 98% DCI-P3, Delta E < 2 (Average) for sRGB, Rec.709, DCI-P3, 1.07 billion colors
RESPONSE TIME	5 ms gray to gray in Fast mode 8 ms gray to gray in Normal mode
HDR READY	Yes, DisplayHDR 400
CONNECTIVITY	1 x DP 1.4 with DSC Support (HDCP 2.2) 1 x HDMI 2.0 (HDCP 2.2) 1 x USB-C with DSC support (DP 1.4, HDCP 2.2), Power Delivery up to 90W, 2/4 Lanes switch-upstream 1 x USB-C (USB 3.2 Gen 2, 10Gbps KVM) Upstream port, Data Only 1 x DP (Out) 4 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) downstream ports 1 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) with B.C 1.2 1 x USB-C (USB 3.2 Gen 2, 10Gbps, Up to 15W charging) downstream port 1 x Analog 2.0 audio line-out (3.5mm jack) 1 x RJ45 Port
ADJUSTABILITY	Height adjustable (150 mm) Tilt (-5° to 21°) Swivel (-30° to 30°) Pivot (-90° to 90°)
PBP / PIP	PbP (Yes) PiP (Yes)
KEYBOARD, VIDEO AND MOUSE (KVM)	Yes, KVM and Auto-KVM
DAISY CHAIN AVAILABILITY	Yes
AUDIO OUTPUT	1 x Audio line-out ¹⁴
BUILT-IN SPEAKER	No
DELL DISPLAY MANAGER COMPATIBILITY	Yes, Easy Arrange, Other key features
SPECIFICATIONS - SERVICE / SUPPORT DETAILS	3-Year Advanced Exchange Service and Premium Panel Exchange
HEIGHT WITH STAND (COMPRESSED ~ EXTENDED)	385.18 mm ~ 535.18 mm 15.16" ~ 21.07"
WIDTH WITH STAND	611.4 mm 24.07"
DEPTH WITH STAND	185.0 mm 7.28"
HEIGHT WITHOUT STAND	353.01 mm 13.89"
WIDTH WITHOUT STAND	611.44 mm 24.07"
DEPTH WITHOUT STAND	54.33 mm 2.14"

ULTRASHARP 32 4K USB-C HUB MONITOR – U3223QE TECHNICAL SPECIFICATION

DIAGONAL VIEWING SIZE	80.01 cm 31.5 inches
PRESET DISPLAY AREA (H X V)	697.31 mm x 392.23 mm 27.45" x 15.44"
MAXIMUM PRESET RESOLUTION	3840 x 2160 @ 60Hz
PANEL TYPE	IPS Black Technology
DISPLAY SCREEN COATING	Anti-glare treatment of the front polarizer (3H) hard coating
VIEWING ANGLE	178° vertical / 178° horizontal
PIXEL PITCH	0.18159 mm x 0.18159 mm
PIXEL PER INCH (PPI)	137.68
CONTRAST RATIO	2000 to 1 (typical)
ASPECT RATIO	16:9
BACKLIGHT TECHNOLOGY	LED
BRIGHTNESS	400 cd/m ² (typical)
COLOR GAMUT	100% sRGB, 100% Rec.709, 98% DCI-P3, Delta E < 2 (Average) for sRGB, Rec.709, DCI-P3, 1.07 billion colors
RESPONSE TIME	5 ms gray to gray in Fast mode 8 ms gray to gray in Normal mode
HDR READY	Yes, DisplayHDR 400
CONNECTIVITY	1 x DP 1.4 with DSC Support (HDCP 2.2) 1 x HDMI 2.0 (HDCP 2.2) 1 x USB-C with DSC support (DP 1.4, HDCP 2.2) Power Delivery up to 90W, 2/4 Lanes switch-upstream 1 x USB-C (USB 3.2 Gen 2, 10Gbps KVM) Upstream port, Data Only 1 x DP (Out) 4 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) downstream ports 1 x super speed USB-A (USB 3.2 Gen 2, 10Gbps) with B.C 1.2 1 x USB-C (USB 3.2 Gen 2, 10Gbps, Up to 15W charging) downstream port 1 x Analog 2.0 audio line-out (3.5mm jack) 1 x RJ45 Port
ADJUSTABILITY	Height adjustable (150 mm) Tilt (-5° to 21°) Swivel (-30° to 30°) Pivot (-90° to 90°)
PBP / PIP	PbP (Yes) PiP (Yes)
KEYBOARD, VIDEO AND MOUSE (KVM)	Yes, KVM and Auto-KVM
DAISY CHAIN AVAILABILITY	Yes
AUDIO OUTPUT	1 x Audio line-out ¹⁴
BUILT-IN SPEAKER	No
DELL DISPLAY MANAGER COMPATIBILITY	Yes, Easy Arrange, Other key features
SPECIFICATIONS - SERVICE / SUPPORT DETAILS	3-Year Advanced Exchange Service and Premium Panel Exchange
HEIGHT WITH STAND (COMPRESSED ~ EXTENDED)	469.34 mm ~ 618.77 mm 18.48" ~ 24.36"
WIDTH WITH STAND	712.61 mm 28.06"
DEPTH WITH STAND	233.17 mm 9.18"
HEIGHT WITHOUT STAND	410.04 mm 16.14"
WIDTH WITHOUT STAND	712.61 mm 28.06"
DEPTH WITHOUT STAND	55.78 mm 2.2"

U2723QE, U3223QE

ULTRASHARP 27 4K USB-C HUB MONITOR – U2723QE TECHNICAL SPECIFICATION

WEIGHT (PANEL ONLY - FOR VESA MOUNT)	4.48 kg 9.88 lb
WEIGHT (WITH STAND ASSEMBLY AND CABLES)	6.64 kg 14.64 lb
WEIGHT (WITH PACKAGING)	9.53 kg 21.01 lb
SECURITY	Security lock slot (cable lock sold separately) Anti-theft stand lock slot (to panel)
COMPLIANT STANDARDS	- ENERGY STAR® Certified Monitor - EPEAT® Gold registered where applicable - RoHS Compliant - TCO Certified Edge - BFR/PVC Free (Halogen-free) (excluding external cables) - Arsenic-Free glass and Mercury-Free for the panel only
FLAT PANEL MOUNT INTERFACE	VESA mounting holes (100 mm x 100 mm - behind attached VESA Cover)
TEMPERATURE RANGE	Operating: 0°C to 35°C (32°F to 95°F) Non-operating: -20°C to 60°C (-4°F to 140°F)
HUMIDITY RANGE	Operating: 10% to 80% (non-condensing) Non-Operating: 5% to 90% (non-condensing) - Storage and Shipping
ALTITUDE	Operating: 3658 m (12000 ft) max Non-Operating: 3716 m (12191 ft) max
VOLTAGE REQUIRED	100 VAC to 240 VAC / 50 Hz or 60 Hz+3 Hz/2.7 A (max)
ENERGY EFFICIENCY CLASS (A TO G SCALE)	F
POWER CONSUMPTION NORMAL OPERATION	0.2 W (Off Mode) 0.3 W (Standby Mode) 25.9 W (On Mode) 220 W (Max)
WHAT'S INCLUDED	Monitor, Stand Riser, Stand Base 1 x Power cable 1 x Type-C (C-C cable) - 1 m 1 x DP cable (DP to DP) - 1.8 m 1 x super speed USB (Type-A to Type-C) Factory calibration report Quick setup guide Safety, Environmental and Regulatory Information

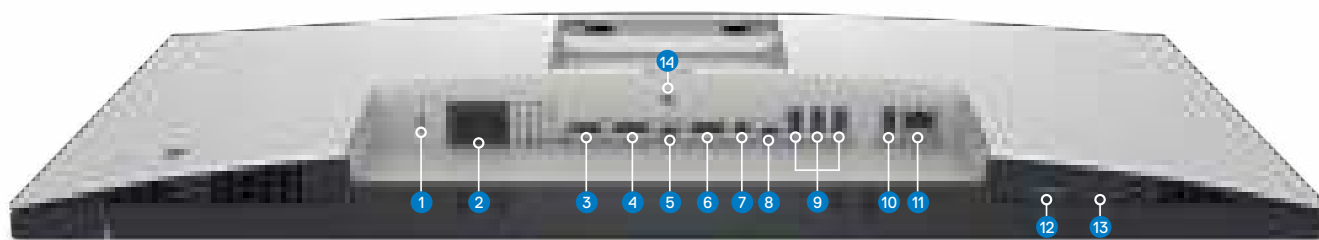


ULTRASHARP 32 4K USB-C HUB MONITOR – U3223QE TECHNICAL SPECIFICATION

WEIGHT (PANEL ONLY - FOR VESA MOUNT)	5.65 kg 12.46 lb
WEIGHT (WITH STAND ASSEMBLY AND CABLES)	10.36 kg 22.84 lb
WEIGHT (WITH PACKAGING)	14.49 kg 31.94 lb
SECURITY	Security lock slot (cable lock sold separately) Anti-theft stand lock slot (to panel)
COMPLIANT STANDARDS	- ENERGY STAR® Certified Monitor - EPEAT® Gold registered where applicable - RoHS Compliant - TCO Certified Edge - BFR/PVC Free (Halogen-free) (excluding external cables) - Arsenic-Free glass and Mercury-Free for the panel only
FLAT PANEL MOUNT INTERFACE	VESA mounting holes (100 mm x 100 mm - behind attached VESA Cover)
TEMPERATURE RANGE	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -20°C to 60°C (-4°F to 140°F)
HUMIDITY RANGE	Operating: 10% to 80% (non-condensing) Non-Operating: 5% to 90% (non-condensing) - Storage and Shipping
ALTITUDE	Operating: 5000 m (16404 ft) max Non-Operating: 12192 m (40000 ft) max
VOLTAGE REQUIRED	100 VAC to 240 VAC/ 50 Hz or 60 Hz+3 Hz/2.7 A (typical)
ENERGY EFFICIENCY CLASS (A TO G SCALE)	F
POWER CONSUMPTION NORMAL OPERATION	0.2 W (Off Mode) 0.3 W (Standby Mode) 29.4 W (On Mode) 220 W (Max)
WHAT'S INCLUDED	Monitor, Stand Riser, Stand Base 1 x Power cable 1 x Type-C (C-C cable) - 1 m 1 x DP cable (DP to DP) - 1.8 m 1 x super speed USB (Type-A to Type-C) Factory calibration report Quick setup guide Safety, Environmental and Regulatory Information



PORTS AND SLOTS



- | | | | |
|--|---|--|--|
| 1 Security lock slot** | 6 DisplayPort (out) | 10 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A | 13 USB-C Downstream port (10Gbps, 15W) |
| 2 Power connector | 7 Audio line-out port | 11 RJ45 port | 14 Stand lock |
| 3 HDMI port | 8 USB-C Upstream port (data only) | 12 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A Downstream port with Power Charging | |
| 4 DisplayPort | 9 Super speed USB 10Gbps (USB 3.2 Gen 2) Type-A Downstream port | | |
| 5 USB-C Upstream port (video and data, up to 90W power delivery) | | | |

U2723QE, U3223QE

Steadfast reliability

As the No. 1 monitor company worldwide*, we take pride in our unyielding commitment to quality and the utmost in customer satisfaction.

Premium Panel Exchange

Dell Premium Panel Exchange¹⁵ allows a free monitor replacement during the Limited Hardware Warranty¹⁶ period, even if only one bright pixel is found.

Advanced Exchange Service

Your monitor comes with a 3-year Advanced Exchange Service¹⁷ so that if a replacement becomes necessary, it will be shipped to you the next business day during your 3-year Limited Hardware Warranty.¹⁶

ProSupport

Upgrade to 24x7 specialized technical phone support with the Dell ProSupport option.¹⁸

* Dell monitors are #1 Worldwide for 8 consecutive years (2013, Q2 to 2021, Q3)! Source: IDC Worldwide Quarterly PC Monitor Tracker, Q3, 2021.

** Based on Kensington Security Slot™

^ Based on Dell analysis of publicly available data, August 2021.

† Based on Dell analysis of publicly available data, August 2021; applicable only to Dell 4K monitors that feature Display Stream Compression technology.

1 Dell adheres to standard USB-C specifications and protocol. Functionality with non-Dell USB-C systems may vary.

2 Via quick access USB-C port.

3 The power sync feature on this Dell USB-C Monitor enables start up and wake-on-demand on compatible Dell PCs. Please check your Dell PC to ensure support of this feature.

4 MAC Address pass-through functionality is tested to work with most Dell PC systems. Functionality on non-Dell systems may vary.

5 Source: Based on Principled Technologies Report commissioned by Dell, November 2018. Actual results will vary. Full report: https://www.principledtechnologies.com/Dell/P2419H_monitor_productivity_1118.pdf

6 Limited to select OSD functions; applies to daisy-chained monitors via DP. Please refer to the User Guide for the full list.

7 Available for Windows 10 and above, and Mac OS 10.12 and above. Please refer to dell.com/ddm or full compatibility list and OS support

8 Based on internal analysis of external 4K personal conferencing webcams, April 2021.

9 Based on Dell analysis of battery life usage model calculations, Nov. 2020. Results vary depending on use, operating conditions and other factors.

10 By weight of the total weight of plastic parts in product. Excludes printed circuit boards, labels, cables, connectors, electronic components, optical components, ESD components, EMI components adhesives, and coatings.

11 EPEAT registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.

12 The outer box/corrugate cushion packaging and recycled fibers in Dell commercial monitor packaging (excluding D-series) are made from corrugate and virgin cardboard materials. Excludes foam cushioning and plastic bags.

13 Enabled by Dell Display Manager

14 Connect to Speakers. Headphone use is not supported on the audio line-out port.

15 Applicable to Dell UltraSharp, P Series, and C Series desktop monitors.

16 For copy of Ltd Hardware Warranty, write to Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see <https://www.dell.com/warranty>.

17 Advanced Exchange: Dell will send you a replacement monitor the next business day in most cases if deemed necessary after phone/online diagnosis. Shipping times may vary by location and for monitors 55" and above. Fee charged for failure to return defective unit. See dell.com/servicecontracts/global.

18 Availability varies, please visit www.dell.com/support for details. In some countries, hours for in-region support may vary. Support after local business hours may be provided in a language other than the local language.

Technical specifications subject to change without prior notice. Product availability varies by country. Please contact your Dell representative for more information.

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24. FIȘA TEHNICĂ: E-IM - INTERFAȚĂ MULTISTREAM

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Corespondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0		2	3
1.	Parametrii tehnici și funcționali : 1.1.Amplasare • Loc de montaj: Tablou TSMG, cu accesorii de montaj incluse, montaj vertical. • Temperaturi ambiante: în funcționare: 0°C la 60°C; • Umiditatea relativă: 5-95%, • Mediul ambiant: mediu lipsit de praf, fum, gaze inflamabile sau corozive, vapori sau săruri; • gradul de agresivitate al atmosferei: normal; • Clasificare IP: 20 1.2.Parametrii generali • Dimensiune: (Îxlxa)137 x 235 x 322 mm • Tip ecran: color, 7", tactil • Număr maxim de module debitmetre: 4 (nu fac obiectul prezentei achiziții) • Alimentare: 24Vdc. • Putere consumată: 0.4~0,8A 1.3 Conectivitate: • Porturi ethernet RJ45: 2 • Conector alimentare: 1x8 pini • Conectori I/O: 1 x 9-pin D-sub male (RS232) 2 x 9-pin D-sub male (RS485/RS232) 8 x 37-pin D-sub female • Protocoale de comunicație: ○ Modbus RTU / ASCII Master and Slave ○ Modbus TCP Server and Client ○ HART Master Web AP • Web server • Alte accesorii: toate cablurile, conectorii și accesoriiile electrice necesare pentru instalarea în aceste interfețe a 4 convertoare de volum FLOW-X existente • Furnizorul va asigura interconectarea și comunicația cu contoarele ultrasonice tip SICK FLOWSIC 600, cu traductorii de temperatură și presiune existenți prin cablurile existente.	DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA	SICK (Endress)
2.	Specificații de performanță și condiții privind siguranța în exploatare: • Auditare/raportare: AGA 13,API MPMS 12.2, 21.1, 21.2 • Diagnoză debitmetre: BB CoriolisMaster SICK FlowSic 600 SICK FlowSic 600XT		
3.	Condiții privind conformitatea cu standarde relevante: • AGA 5, AGA 8 Part 1 (AGA8:1994), AGA 8 Part 2 (GERG-2008), AGA 10, AGA NX19-Mod ASTM D3588 • AGA3, AGA6, AGA7, AGA9, AGA11 • EN12405-1		

	• IEC 60068-2-1 • IEC 60654-2 • IEC 61000-4-2		
4.	Condiții de garanție și postgaranție: Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. Vor fi anexate: • instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); • instrucțiuni de exploatare; • buletine de încercări, verificări, probe; • declarație de conformitate.		





Flow-X

DIGITAL FLOW SOLUTIONS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
Flow-X	On request

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

Our regional sales organization will help you to select the optimum device configuration.

Other models and accessories → www.sick.com/Flow-X

Product description

The Flow-X flow computer provides gas volume conversion, event logging, parameter logging, and reports using state-of-the-art technology. Identical modules are combined in different housings, offering a multi-stream version Flow-X/P for 1 - 4 measuring distances with a local touch screen, or the version Flow-X/S for smaller installations with one measuring distance. Each module combines high-precision measurement technology, fast digital signal processing, abundant processing power, versatile data communication, and high storage capacity in a fully equipped flow computer. The Flow-X flow computer meets the requirements of even the most demanding applications and is the ideal partner for custody transfer gas metering solutions in installations with FLOWSIC600 ultrasonic gas flow meters.

At a glance

- MID approved configuration for gas metering streams with FLOWSIC600
- Powerful modules for demanding applications
- Each module features CPU, memory and equal in/outputs
- Compelling 7" graphic display with touch operation
- Intuitive user interface for graphics display and web browser
- True remote access via Ethernet
- Station computer for multiple streams

Your benefits

- Reduced planning and installation costs through standard configurations
- Very accurate volume conversion with multiple calculation cycles per second
- High reliability through independent modules with their own volume conversion and storage of measured values, counter readings and events
- Easy extension of installations with modules featuring equal in/outputs and 100% software configuration
- Very simple operation through intuitive user interface featuring identical menus and displays on the device and in the control room
- Reduced service and maintenance costs with tamper-proof remote maintenance
- Cost-efficient and flexible system integration of multiple streams



Fields of application

- Custody gas metering with FLOWSIC600 gas meters
- Demanding natural gas and process gas applications
- Totals at base conditions for gas volume, mass and energy
- For natural gas, special gases and steam
- Gas metering with advanced diagnostics with FLOWSIC600 2plex
- Redundant gas metering with FLOWSIC600 Quatro

Detailed technical data

System

Ambient temperature	–40 °C ... +75 °C For Flow-X/S 0 °C ... +60 °C For Flow-X/C, Flow-X/P, Flow-X/R
Sunlight	Store and operate out of direct sunlight
Storage temperature	–40 °C ... +85 °C For Flow-X/S –20 °C ... +70 °C For Flow-X/C, Flow-X/P, Flow-X/R
Ambient humidity	5 % ... 90 % Relative humidity; non-condensing
Conformities	2014/32/EU Measuring Instruments Directive (MID) Directive 2014/30 / EC relating to electromagnetic compatibility 2012/19/EU WEEE Directive (WEEE 2) 2011/65/EU RoHS OIML R117-1 WELMEC 7.2, 8.3, 8.8 API 21.1 Hazardous area: Applies for Flow-X/M and X/S only Class I, Division 2, Groups A, B, C and D, T4 Class I, Zone 2, Group IIC, T4 IECEx Ex ec IIC Gc ATEX II 3 G Ex ec IIC Gc
Electrical safety	EN12405-1, A2, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-3, IEC 60068-2-31, IEC 60068-2-36, IEC 60654-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-17, IEC 61000-4-29, IEC 61000-6-2, IEC 61000-6-4, IEC 63000
Supported gas chromatographs	Supports all commonly used gas chromatographs (e.g. ABB NGC8200 Series, ABB BTU8100, Danalyser, Yamatake HGC, Encal 3000, Angus GQA, Siemens Maxum and Sitrans)
Components CPU board	CPU and memory: 800 MHz 512 MB RAM, 1,024 MB flash memory Real-time clock, accuracy better than 1 sec/day Double layer capacitor to store data and time Watchdog: Hardware and software watchdog timer Multi-stream capability: supports up to 4 gas or 2 liquid measuring paths per module Calibration protection switch: mechanical calibration protection switch to prevent modification of important parameters
Dimensions (W x H x D)	See dimensional drawings
Weight	Flow-X/P1: ≤ 3.7 kg Flow-X/P2: ≤ 4.5 kg Flow-X/P3: ≤ 5.3 kg Flow-X/P4: ≤ 6.1 kg Flow-X/S: ≤ 2.5 kg Flow-X/C: ≤ 2.7 kg

Electrical connection	Voltage	24 V DC
	Current consumption	(± 10%), with redundant connections Flow-X/P0, Flow-X/M, Flow-X/S: ≤ 0.4 A Nominal; ≤ 0.8 A maximal Flow-X/C: ≤ 0.6 A Nominal; ≤ 1.0 A maximal

I/O per Flow-X/M module or Flow-X/C

Analog outputs	4x Analog output for process outputs and flow / pressure control. Resolution 14 bits, 0.075% FS. Analog outputs share same ground floating in relation to all other electronics.
Analog inputs	6x analog transmitter input, high accuracy ¹⁾ Input types are 4 to 20 mA, 0 to 20 mA, 0 to 5 V, 1 to 5 V Accuracy of mA inputs; 0.002% FS at 21 °C, 0.008% at full ambient temperature range of 0-60 °C, long-term stability 0.01% per year Resolution: 24 bits. Analog inputs have the same earthing relative to all other electronic devices.
Digital outputs	16x Digital outputs, open collector. Rating 100mA @24V ²⁾
Digital inputs	16x Digital status inputs. Resolution 100ns (10MHz) ²⁾
Additional inputs	Density/viscosity ²⁾ : 4x Periodic time input, 100µs to 5000µs. Resolution < 1ns Sphere detector inputs ²⁾ : 4x Supports 1, 2 and 4 detector configurations mode. Resolution 100ns (10MHz) 4-wire PRT inputs: 2x resolution 0.02 °C for 100 Ohm input. Error depends on field of application 0 to 50 °C: Error <0.05 °C or better -220 to +220 °C: error < 0.5 °C or better
Additional outputs	Prover bus outputs ²⁾ : 1x Meter pulse output for remote proving flow computers. Resolution 100ns (1MHz) Frequency outputs ²⁾ : 4x Frequency outputs for emulation of flow meter signals. Maximum frequency 10KHz, accuracy 0.1%
Pulse Inputs	4x Single or dual pulse input. Adjustable trigger level at various voltages. Frequency range up to 10 kHz for single and dual pulse. Compliant with ISO6551, IP252, and API 5.5. True Level A and level B implementation. ²⁾
Pulse Outputs	4x Open collector, 0.01 to 500 Hz ²⁾
Ethernet	✓
Type of fieldbus integration	2x RJ45 Ethernet interface, TCP/IP
Serial	✓, ✓, ✓
Serial	
Serial	
Type of fieldbus integration	2x RS485 / RS232 serial port for ultrasonic meter, printer or generic, 115kb
HART	✓
Type of fieldbus integration	4x independent HART loop inputs in addition to 4 to 20 mA signals ¹⁾ Support includes multi-drop for each transmitter loop, as well as support for redundant FC operation.
Footnote	1) 2)

¹⁾ There are 6 analog inputs per module. Analog inputs 1 through 4 support HART.

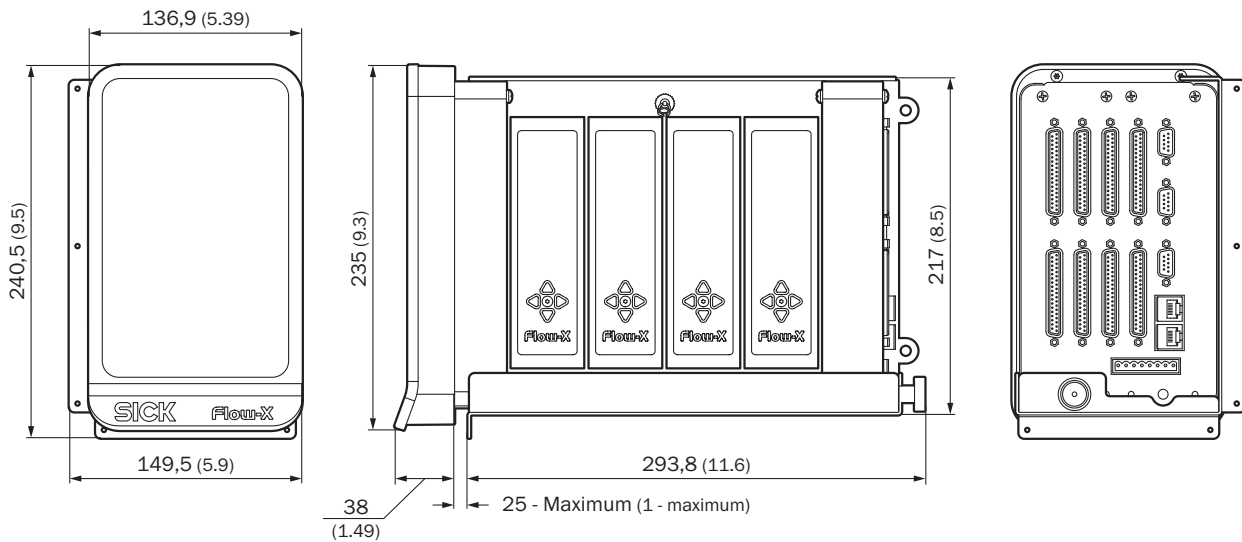
²⁾ Total number of pulse inputs + digital inputs + digital outputs + pulse outputs + density inputs + sphere detector inputs + prover bus outputs + frequency outputs = 16.

Volume correction

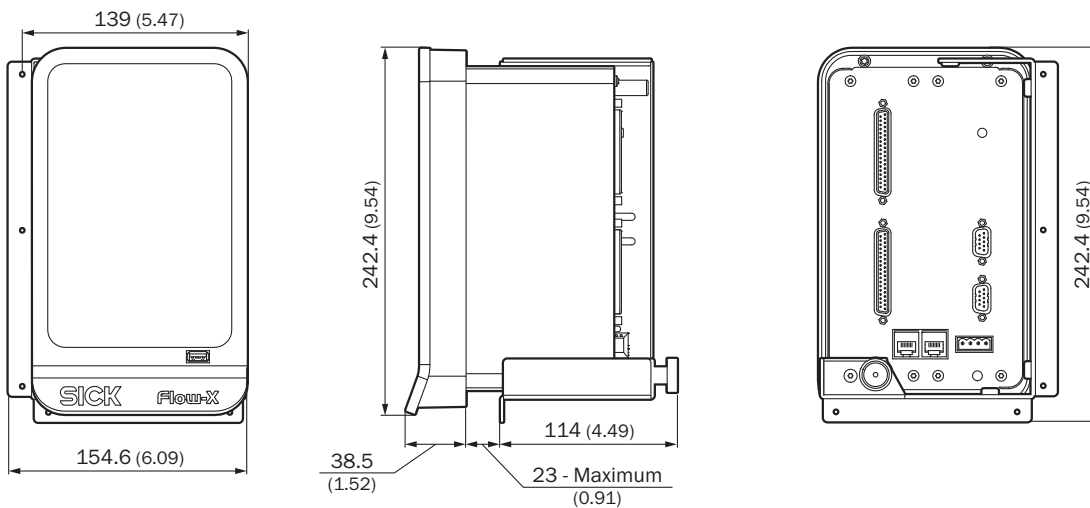
Correction method	PTZ
Compressibility	AGA 5, AGA 8 Part 1, AGA 8 Part 2 (GERG-2008), AGA 10 AGA NX-19 GERG-2008 GERG91mod (GOST 30319.2-1996) GOST 30319.2-2015 GSSSD MR-113 ISO 6976, ISO 12213 Parts 2 and 3 S-GERG
Flow rate calculations	AGA 3, AGA 7, AGA 9, AGA 11

Dimensional drawings (Dimensions in mm (inch))

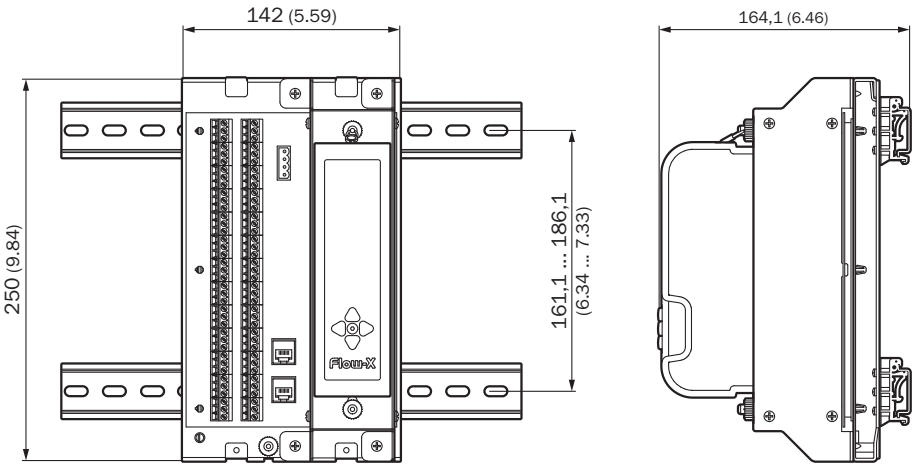
Flow-X/P



Flow-X/C



Flow-X/S



SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com

25. FISA TEHNICĂ: E- GPS – SERVER DE TIMP GPS

[illegible]

PREZENTAREA PRODUSULUI

IMS - module de sincronizare

NTP Time Server

IMS - LANTIME M3000

IMS - LANTIME M1000

IMS - LANTIME M500

LANTIME M900

LANTIME M600

LANTIME M400

LANTIME M300

LANTIME M200

LANTIME M100

SyncFire 1100

LCES

IEEE-1588 Solutions

Ceasuri PC (PCI / USB)

GNSS Sisteme

DCF77 / WWVB / MSF Sisteme

IRIG Timp Cod Sisteme

Industrie Soluții de

semnal de

distribuție

Antene / distribuitori

Afișează și ceasuri de

perete

Meinberg Software

Accesorii

Gama de

produse de

la A la Z

Arhiva produse

LANTIME M200 : Compact Server NTP de timp cu ceas de referință integrat



Obțineți o ofertă!

servele de timp LANTIME M200 poate fi instalat pentru a oferi timp precis pentru rețele de calculatoare mici și mijlocii. Acest server de timp la nivel de intrare sincronizează toate sistemele, fie NTP- sau SNTP compatibile utilizând un built-in MEINBERG ceas de radio ca sursă de timp de referință primar. Un oscilator stabil și precis este capabil să treacă interferențe sau o pierdere temporară de recepție.

Caracteristici cheie

Descriere produs

Caracteristici

Descarca

Mai multe imagini

Caracteristici cheie



Surse selectabile de referință:

- [GPS](#) - receptor satelit pentru Global Positioning System:
- [GNS](#) : GPS Combinat / GLONASS / Galileo / receptor satelit Beidou (banda de frecvență L1), pot fi de asemenea utili aplicații mobile
- [PZF](#) : receptor de corespondență DCF77 pentru Europa de mijloc
- [MSF](#) : receptor val lung pentru Marea Britanie
- [WWVB](#) : receptor val lung pentru semnalul de timp din SUA

Opțional sursă de timp GPS Receiver:

Blocarea frecvenței oscilatorului de master la sistemul GPS permite nostru [receptor GPS](#) pentru a genera frecvențe opțional , programabile standard , cu mare precizie și stabilitate. Diverse opțiuni oscilator permite punerea în aplicare a costurilor diferitelor cerințe în ceea ce privește accuracy a rezultatelor.

Generatorul de impulsuri al receptorului GPS generează impulsuri pe secundă și pe minut. Ca o opțiune ieșiri progr sunt disponibile. Impulsurile sunt sincronizate cu UTC secundă.

Precizia ieșirilor de impulsuri (în funcție de opțiunea de oscilator):

- $\leq \pm 100\text{ns}$ (TCXO, OCXO LQ)
- $\leq \pm 50\text{ns}$ (OCXO MQ, OCXO HQ, OCXO DHQ)

Precizia depinde de oscilator: [opțiuni oscilator](#)

alimentat de la distanță [unitate de antena GPS / convertor](#) , până la 300 m distanța de antenă cu RG58 și până la 70 m cu cablu RG213.

- Sincronizarea de NTP și clienții SNTP compatibile
- Statutul bazat pe Web și interfața de configurare ([Demo](#)) și utilitarul de configurare grafică bazată pe consola
- Protocoale acceptate net: IPv4, IPv6, NTP, (S) NTP, DAYTIME, DHCP, HTTP, HTTPS, FTP, SFTP, SSH, SCP, Syslog, SNMP, TIMI
- Sistemul de alertă-Notificarea schimbării statutului prin e-mail, Winmail, SNMP sau un monitor extern conectat
- v1 completa SNMP, v2, v3 suport cu propriul SNMP-daemon pentru starea și de configurare și mesaje SNMP trap
- Port USB pentru a instala actualizări de firmware, blocare acces meniu și panoul frontal de backup / restaurare de config
fișierele jurnal
- Meinberg [Unitatea Antena GPS / convertor](#) conectat cu până la 300 m de standardul RG58 cablu coaxial

[Vezi toata stirea](#)

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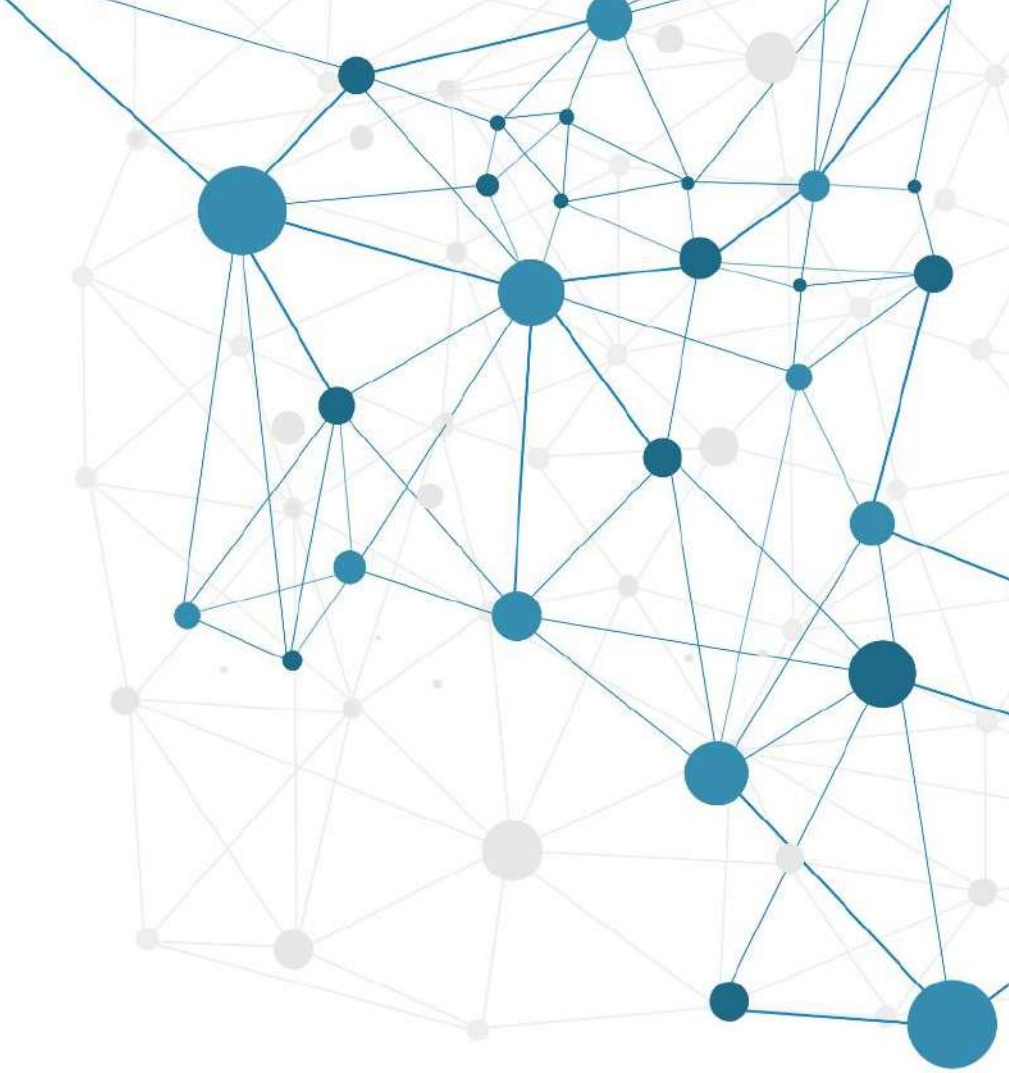
26. FIȘA TEHNICĂ: E-SWRM – SWITCH DE REȚEA CU MANAGEMENT

[illegible]

	Funcționalități monitorizare, troubleshooting si management: Echipamentul va avea capacitatea să exporte detalii despre toate fluxurile de date. În vederea atingerii acurateții necesare în detecția posibilelor amenințări de securitate, este necesar și obligatoriu să se asigure exportarea statisticilor cu includerea informațiilor despre fiecare pachet de date, fără restricții cu privire la sursă sau destinație, fără a se efectua eșantionare. Trebuie să se asigure capabilități de exportare a statisticilor despre traficul tranzitat (cel puțin: adresa IP sursa, adresa IP destinație, port sursa, port destinație, protocol TCP/UDP, TOS, interfața logica de intrare), aplicații. Echipamentul va fi accesibil pentru configurare folosind SSH. Echipamentul va include API-uri deschise pentru configurare folosind netconf, restconf, YANG		
3.	Condiții privind conformitatea cu standarde relevante Sistemul de operare al echipamentului oferit va suporta următoarele standarde: IEEE 802.1s Multiple Spanning Tree Protocol 802.1w Rapid Spanning Tree Protocol; 802.1p Class-of-Service (CoS) Tagging for Ethernet frames; RIP, OSPF – minimum 100 de rute SPAN, RSPAN Policy Based Routing 802.3ad Link aggregation with LACP; 802.1Q VLAN Tagging; Compatibilitate electromagnetică: FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A VCCI Class A CISPR 35 EN 55024, EN300 386*, EN 61000-3-2, EN 61000-3-3 EN 61000-6-1		
4.	Condiții de garanție și postgaranție Termen de garanție minim 2 ani de la data punerii în funcțiune Suport tehnic producător: 3 ani; posibilitatea asigurată beneficiarului de deschidere tichete la nivelul TAC-ului (Technical Assistent Center) producătorului; actualizări de firmware pe toată perioada de subscripție; remediarea defectului conform politicilor de tip NBD (Next Bussines Day) 8x5 - Livrare în următoarea zi lucrătoare, în programul de lucru de 8 ore, 5 zile pe săptămână;		
5.	Alte condiții cu caracter tehnic Se vor oferta 4 echipamente identice pentru asigurarea cerinței de redundanță a rețelei fiecare echipament respectând prezentele specificații tehnice. Vor fi luate în considerație doar ofertele însoțite de: Vor fi luate în considerație doar ofertele însoțite de: instrucțiuni sau manual de utilizare/instalare în limba română sau engleză în format scris sau electronic; declarație de conformitate CE și calitate;		

	certificat de garanție. Documente de licențiere software, după caz, format scris sau electronic.		
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Cisco Catalyst 9200 Switch Datasheet



Router-Switch.com
Leading Network Hardware Supplier

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Contact Us

Tel: +1-626-239-8066 (USA) +852-3050-1066 / +852-3174-6166 /

Fax: +852-3050-1066 (Hong Kong)

Email: cisco@router-switch.com (Sales Inquiries)

ccie-support@router-switch.com (CCIE Technical Support)

OVERVIEW

Cisco® Catalyst® 9200 Series switches extend the power of intent-based networking and Catalyst 9000 hardware and software innovation to a broader set of deployments. With its family pedigree, Catalyst 9200 Series switches offer simplicity without compromise – it is secure, always on, and IT simplified.

As foundational building blocks for the Cisco Digital Network Architecture, Catalyst 9200 Series switches help customers simplify complexity, optimize IT, and reduce operational costs by leveraging intelligence, automation and human expertise that no other vendor can deliver regardless of where you are in the intent-based networking journey.

Catalyst 9200 Series switches provide security features that protect the integrity of the hardware as well as the software and all data that flows through the switch. It provides resiliency that keeps your business up and running seamlessly. Combine that with open APIs of Cisco IOS XE and programmability of the UADP ASIC technology, Catalyst 9200 Series switches give you what you need now with investment protection on future innovations.

With full PoE+ capability, power and fan redundancy, stacking bandwidth up to 160 Gbps, modular uplinks, Layer 3 feature support, and cold patching, Catalyst 9200 Series switches are the industry's unparalleled solution with differentiated resiliency and progressive architecture for cost-effective branch-office access.

APPEARANCE

Figure 1. Cisco Catalyst 9200 Series Switches



PRODUCT HIGHLIGHTS

- Up to 48 ports of full Power over Ethernet Plus (PoE+) capability
- Resiliency with Field-Replaceable Units (FRU) and redundant power supply, fans, and modular uplinks
- Flexible downlink options with data or PoE+
- Operational efficiency with optional backplane stacking, supporting stacking bandwidth up to 160 Gbps
- UADP 2.0 Mini with integrated CPU offers customers optimized scale with better cost structure
- Enhanced security with AES-128 MACsec encryption, policy-based segmentation, and trustworthy systems
- Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access
- Advanced network monitoring using Full Flexible NetFlow
- Cisco Software-Defined Access (SD-Access):
 - Simplified operations and deployment with policy-based automation from edge to cloud managed with Cisco Identity Services Engine (ISE)
 - Network assurance and improved resolution time through Cisco DNA Center™
- Plug and Play (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or updates to an existing network
- Cisco IOS XE: A Common Licensing based operating system for the enterprise Cisco Catalyst 9000 product family with support for model-driven programmability and streaming telemetry
- ASIC with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries

THE PLATFORM

Cisco Catalyst 9200 series includes 9200 models and 9200L models.

Table 1. Cisco Catalyst 9200 series platforms

Models	FRU Power Supply	FRU Fans	Modular Uplinks	Stacking Bandwidth Support	SD-Access Support
Modular uplink models (C9200 SKUs)	✓	✓	✓	160 Gbps	Yes (4 Virtual Networks)
Fixed uplink Models (C9200L SKUs)	✓	✗	✗	80 Gbps	Limited (1 Virtual Network)

Table 2. Cisco Catalyst 9200 Series Switch configurations

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary AC power supply	Fans
Modular uplink models				
C9200-24T	24 ports data	Modular uplink options	PWR-C5-125WAC	FRU redundant
C9200-24P	24 ports full PoE+	Modular uplink options	PWR-C5-600WAC	FRU redundant
C9200-48T	48 ports data	Modular uplink options	PWR-C5-125WAC	FRU redundant
C9200-48P	48 ports full PoE+	Modular uplink options	PWR-C5-1KWAC	FRU redundant
Fixed uplink models				

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary AC power supply	Fans
C9200L-24T-4G	24 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4G	24 ports full PoE+	4x 1G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48T-4G	48 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4G	48 ports full POE+	4x 1G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-24T-4X	24 ports data	4x 10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4X	24 ports full PoE+	4x 10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48T-4X	48 ports data	4x 10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4X	48 ports full PoE+	4x 10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-24PXG- 4X	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	4x 10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48PXG- 4X	48 ports full POE+ (12 mGig ports up to 10G, 36 ports up to 1G)	4x 10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary AC power supply	Fans
C9200L-24PXG- 2Y	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	2x 25G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48PXG- 2Y	48 ports full POE+ (8 mGig ports up to 10G, 40 ports up to 1G)	2x 25G fixed uplinks	PWR-C5-1KWAC	Fixed redundant

NETWORK MODULES

Cisco Catalyst 9200 Series switches come with modular or fixed uplinks as indicated in Table 2. With modular SKUs, the field-replaceable network modules provide infrastructure investment protection by allowing a nondisruptive migration from 1G to 10G and beyond. When you purchase the switch, you can choose from the network modules described in Table 3.

Table 3. Network module part numbers and descriptions

Network module	Description
C9200-NM-4G	4x 1G network module
C9200-NM-4X	4x 1G/10G network module
C9200-NM-BLANK	No network module

THE ACCESSORIES

Power supplies

Cisco Catalyst 9200 Series switches support dual field-replaceable power supplies. Each switch ships with one default power supply, and a second identical power supply can be purchased with the initial order or can be added at a later time. The second power supply can provide redundancy or additional power to PoE+ ports as needed.

Intelligent PoE+

- IEEE 802.3at PoE+ (up to 30W per port) is supported on Cisco Catalyst 9200 Series switches to lower the total cost of ownership for deployments that incorporate Cisco IP phones, Cisco Aironet® wireless access points, or other standards-compliant PoE+ end devices. PoE+ removes the need to supply wall power to PoE-enabled devices and eliminates the cost of adding electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. With Cisco Catalyst 9200 Series switches, PoE+ power allocation is dynamic, and power mapping scales up to a maximum of 1440W of PoE+ power.
- Perpetual PoE is supported on Cisco Catalyst 9200 Series switches, and maintains the PoE+ power during a switch reload. This is important for critical endpoints such as medical devices and for Internet of Things (IoT) endpoints such as PoE-powered lights, so that there is no disruption during a switch reboot.
- Fast PoE: When power is restored to a switch, Fast PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.

Table 4. PoE+ Power with primary and secondary power supplies

Model	Default primary power supply	Available PoE power with single primary power supply only*	Optional secondary power supply	Available PoE power with additional secondary power supply*
C9200-24P	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
C9200-48P	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
C9200L-24P-4G	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-24P-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-48P-4G	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W

C9200L-48P-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
C9200L-24PXG-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-48PXG-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
C9200L-24PXG-2Y	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-48PXG-2Y	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W

* Limited by port number and port rating (for example, 24 PoE+ 30W ports = 720W)

Stacking

Cisco Catalyst 9200 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 384 access ports.

Table 5. Supported stacking options

Model	Stacking support	Stacking bandwidth support	Stacking hardware	Number of members	Supported stack members
Modular models (C9200 SKUs)	StackWise®-160	160 Gbps	C9200-STACK-KIT	8	Other C9200 models with same license level
Fixed models (C9200L SKUs)	StackWise-80	80 Gbps	C9200L-STACK-KIT	8	Other C9200L models with same license level

Mixed stacking is not supported. You cannot stack fixed (C9200L SKUs) with modular (C9200 SKUs) models, or other Catalyst switches, e.g. Cisco Catalyst 2960-X and 2960-XR Series.

The optional StackWise-160 and StackWise-80 kits consist of two adapters and a stacking cable. The default stacking cable is 0.5 m, but options of 1 m and 3 m are also available. Table 5 lists the stacking accessories.

Table 6. Stacking accessories

Model	Description
C9200-STACK-KIT	Stack kit for C9200 SKUs only: Two data stack adapters and one data stack cable
C9200L-STACK-KIT	Stack kit for C9200L SKUs only: Two data stack adapters and one data stack cable
STACK-T4-50CM	Data stack 50 cm cable (default cable with Stack Kit)
STACK-T4-1M	Data stack 1 m cable
STACK T4-3M	Data stack 3 m cable

Fan

Cisco Catalyst 9200 Series switches also come with dual fans and support redundancy. Cisco Catalyst 9200 Series switches support redundancy with dual fans. On the C9200 SKUs, the fan units are field-replaceable, whereas on the fixed C9200L SKUs, the fan units are fixed.

Table 7. Fan modules

Model	Description
C9200-FAN=	Fan module

SPECIFICATION**Table 8. Performance specifications**

Description	C9200-24T, C9200-24P, C9200-48T, C9200-48P	C9200L-24T-4G, C9200L-24P-4G, C9200L-48T-4G, C9200L-48P-4G, C9200L-24T-4X, C9200L-24P-4X C9200L-48T-4X, C9200L-48P-4X, C9200L-24PXG-4X, C9200L-48PXG-4X, C9200L-24PXG-2Y, C9200L-24PXG-4X
Virtual Networks	4	1

Description	C9200-24T, C9200-24P, C9200-48T, C9200-48P	C9200L-24T-4G, C9200L-24P-4G, C9200L-48T-4G, C9200L-48P-4G, C9200L-24T-4X, C9200L-24P-4X C9200L-48T-4X, C9200L-48P-4X, C9200L-24PXG-4X, C9200L-48PXG-4X, C9200L-24PXG-2Y, C9200L-24PXG-4X
Stacking bandwidth	160 Gbps	80 Gbps
Total number of MAC addresses	32,000	16,000
Total number of IPv4 routes (ARP plus learned routes)	14,000 (10,000 direct routes and 4,000 indirect routes)	11,000 (8,000 direct routes and 3,000 indirect routes)
IPv4 routing entries	4,000	3,000
IPv6 routing entries	2,000	1,500
Multicast routing scale	1,000	1,000
QoS scale entries	1,000	1,000
ACL scale entries	1,600	1,500
Packet buffer per SKU	6 MB buffers for 24- or 48-port Gigabit Ethernet models	6 MB buffers for 24- or 48-port Gigabit Ethernet models
Flexible NetFlow (FNF) entries	16,000 flows on 24- and 48-port Gigabit Ethernet models	16,000 flows on 24- and 48-port Gigabit Ethernet models
DRAM	4 GB	2 GB
Flash	4 GB	4 GB

Description	C9200-24T, C9200-24P, C9200-48T, C9200-48P	C9200L-24T-4G, C9200L-24P-4G, C9200L-48T-4G, C9200L-48P-4G, C9200L-24T-4X, C9200L-24P-4X C9200L-48T-4X, C9200L-48P-4X, C9200L-24PXG-4X, C9200L-48PXG-4X, C9200L-24PXG-2Y, C9200L-24PXG-4X
VLAN IDs	4096	1024
Total Switched Virtual Interfaces (SVIs)	1000	512
Jumbo frames	9198 bytes	9198 bytes
Wireless bandwidth per switch	Up to 48 Gbps on 24-port and 48-port Gigabit Ethernet model	N/A

Table 9. Bandwidth specifications

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
C9200-24T	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24P	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-48T	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48P	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200L-24T-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
C9200L-24P-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
C9200L-48T-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps

C9200L-48P-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-24T-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-24P-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-48T-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-48P-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-24PXG-4X	272 Gbps	352 Gbps	214.28 Mpps	262 Mpps
C9200L-24PXG-2Y	292 Gbps	372 Gbps	229.16 Mpps	277 Mpps
C9200L-48PXG-4X	392 Gbps	472 Gbps	291.66 Mpps	351 Mpps
C9200L-48PXG-2Y	340 Gbps	420 Gbps	252.97 Mpps	313 Mpps

*measured with 64 byte packets

Table 10. Physical Specifications

	Chassis Dimensions		Chassis + FEP + Fan Dimensions (HxWxD)	
Model	Inches	Centimeters	Inches	Centimeters
C9200-24T	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-24P	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48T	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1

C9200-48P	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-24T-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24P-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48T-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48P-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24T-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24P-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48T-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48P-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24PXG-4X	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-24PXG-2Y	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-48PXG-4X	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-48PXG-2Y	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
Model	Pounds	Kilograms		
C9200-24T	9.59	5.0		
C9200-24P	9.59	5.5		
C9200-48T	9.59	5.0		
C9200-48P	9.59	5.5		
C9200L-24T-4G	9.59	4.35		

C9200L-24P-4G	9.59	4.35
C9200L-48T-4G	9.59	4.35
C9200L-48P-4G	9.59	4.35
C9200L-24PXG-4X	12	5.44
C9200L-24PXG-2Y	12	5.44
C9200L-48PXG-4X	12.6	5.71
C9200L-48PXG-2Y	12.6	5.71
Mean time between failures (hours)		
C9200-24T	587,800	
C9200-24P	422,310	
C9200-48T	571,440	
C9200-48P	375,570	
C9200L-24T-4G	531,030	
C9200L-24P-4G	392,210	
C9200L-48T-4G	508,700	
C9200L-48P-4G	347,760	
C9200L-24T-4X	525,990	
C9200L-24P-4X	390,310	
C9200L-48T-4X	503,400	

C9200L-48P-4X	346,270
C9200L-24PXG-4X	379,410
C9200L-24PXG-2Y	374,730
C9200L-48PXG-4X	337,360
C9200L-48PXG-2Y	337,260
Environmental ranges	
Acoustic noise Measured per ISO 7779 and declared per ISO 9296 Bystander positions operating to an ambient temperature of 25°C	With AC power supply (with 24 PoE+ ports loaded): • LpA: 42dB typical, 45 dB max • LwA: 5.3B typical, 5.6B max Typical: Noise emission for a typical configuration Maximum: Statistical maximum to account for variation in production

NETWORK LICENSING

Table 11. Network Essentials and Advantage package features

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
Switch fundamentals Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder	✓	✓
Advanced switch capabilities and scale	X	✓

EIGRP, HSRP, IS-IS, BSR, MSDP, IP SLA, OSPF		
Network segmentation VRF, VXLAN, LISP, SGT	X	✓
Automation NETCONF, RESTCONF, YANG, PnP Agent, PnP	✓	✓
Telemetry and visibility Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	✓	✓
Security MACsec-128	✓	✓

ORDERING INFORMATION

Table 12. Ordering information

Switches	
Product number	Product description
C9200-24T-A	Catalyst 9200 24-port Data Switch, Network Advantage
C9200-24T-E	Catalyst 9200 24-port Data Switch, Network Essentials
C9200-24P-A	Catalyst 9200 24-port PoE+ Switch, Network Advantage
C9200-24P-E	Catalyst 9200 24-port PoE+ Switch. Network Essentials
C9200-48T-A	Catalyst 9200 48-port Data Switch, Network Advantage
C9200-48T-E	Catalyst 9200 48-port Data Switch, Network Essentials
C9200-48P-A	Catalyst 9200 48-port PoE+ Switch, Network Advantage

C9200-48P-E	Catalyst 9200 48-port PoE+ Switch, Network Essentials
C9200L-24T-4G-A	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Advantage
C9200L-24T-4G-E	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Essentials
C9200L-24P-4G-A	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Advantage
C9200L-24P-4G-E	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Essentials
C9200L-48T-4G-A	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Advantage
C9200L-48T-4G-E	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Essentials
C9200L-48P-4G-A	Catalyst 9200L48-port PoE+ 4x1G uplink Switch, Network Advantage
C9200L-48P-4G-E	Catalyst 9200L48-port PoE+ 4x1G uplink Switch, Network Essentials
C9200L-24T-4X-A	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Advantage
C9200L-24T-4X-E	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Essentials
C9200L-24P-4X-A	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-24P-4X-E	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48T-4X-A	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Advantage
C9200L-48T-4X-E	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Essentials
C9200L-48P-4X-A	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-48P-4X-E	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48PXG-2Y-A	C9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Advantage
C9200L-48PXG-4X-E	C9200L 48-p 12xmGig, 36x1G, 4x10G PoE+, Network Essentials

C9200L-24PXG-4X-E	C9200L 24-p 8xmGig, 16x1G, 4x10G, PoE+, Network Essentials
C9200L-24PXG-4X-A	C9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Advantage
C9200L-24PXG-2Y-E	C9200L 24-p 8xmGig, 16x1G, 2x25G, PoE+, Network Essentials
C9200L-48PXG-4X-A	C9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Advantage
C9200L-48PXG-2Y-E	C9200L 48-p 8xmGig, 40x1G, 2x25G PoE+, Network Essentials
C9200L-24PXG-2Y-A	C9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Advantage
Network modules	
Product number	Product description
C9200-NM-4G	Catalyst 9200 4 x 1GE Network Module
C9200-NM-4X	Catalyst 9200 4 x 10GE Network Module, spare
C9200-NM-BLANK	Catalyst 9200 BLANK Network Module
StackWise-80 and StackWise-160 Kit and cables	
Product number	Product description
C9200-STACK-KIT=	C9200 Stack Kit Spare
C9200L-STACK-KIT=	C9200L Stack Kit Spare
STACK-T4-50CM	50CM Type 3 Stacking Cable
STACK-T4-1M	1M Type 3 Stacking Cable
STACK-T4-3M	3M Type 3 Stacking Cable
Software licenses	

Product number	Product description
C9200-DNA-P-24	C9200 DNA Premier Term, 24-Port: Includes Term Licenses for DNA Advantage, 25 ISE Base & 25 ISE Plus Endpoints, 25 Stealthwatch Flows (including Virtual Flow Collector & Management Console). Requires separate purchase of ISE appliance/ISE VM and DNA Center appliance
C9200-DNA-P-24-3Y	C9200 DNA Premier, 24-port, 3Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-P-24-5Y	C9200 DNA Premier, 24-port, 5Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-P-24-7Y	C9200 DNA Premier, 24-port, 7Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-P-48	C9200 DNA Premier Term, 48-Port: Includes Term Licenses for DNA Advantage, 25 ISE Base & 25 ISE Plus Endpoints, 25 Stealthwatch Flows (including Virtual Flow Collector & Management Console). Requires separate purchase of ISE appliance/ISE VM and DNA Center appliance
C9200-DNA-P-48-3Y	C9200 DNA Premier, 48-port, 3Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-P-48-5Y	C9200 DNA Premier, 48-port, 5Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-P-48-7Y	C9200 DNA Premier, 48-port, 7Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200-DNA-E-24-3Y	C9200 DNA Essentials, 24-port, 3 Year Term license
C9200-DNA-E-24-5Y	C9200 DNA Essentials, 24-port, 5 Year Term license
C9200-DNA-E-24-7Y	C9200 DNA Essentials, 24-port, 7 Year Term license
C9200-DNA-A-24-3Y=	C9200 DNA Advantage, 24-port, 3 Year Term license
C9200-DNA-A-24-5Y=	C9200 DNA Advantage, 24-port, 5 Year Term license
C9200-DNA-A-24-7Y=	C9200 DNA Advantage, 24-port, 7 Year Term license
C9200-DNA-E-48-3Y	C9200 DNA Essentials, 48-port, 3 Year Term license

C9200-DNA-E-48-5Y	C9200 DNA Essentials, 48-port, 5 Year Term license
C9200-DNA-E-48-7Y	C9200 DNA Essentials, 48-port, 7 Year Term license
C9200-DNA-A-48-3Y=	C9200 DNA Advantage, 48-port, 3 Year Term license
C9200-DNA-A-48-5Y=	C9200 DNA Advantage, 48-port, 5 Year Term license
C9200-DNA-A-48-7Y=	C9200 DNA Advantage, 48-port, 7 Year Term license
C9200L-DNA-P-24	C9200L DNA Premier Term, 24-Port: Includes Term Licenses for DNA Advantage, 25 ISE Base & 25 ISE Plus Endpoints, 25 Stealthwatch Flows (including Virtual Flow Collector & Management Console). Requires separate purchase of ISE appliance/ISE VM and DNA Center appliance
C9200L-DNA-P-24-3Y	C9200L DNA Premier, 24-port, 3Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-P-24-5Y	C9200L DNA Premier, 24-port, 5Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-P-24-7Y	C9200L DNA Premier, 24-port, 7Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-P-48	C9200L DNA Premier Term, 48-Port: Includes Term Licenses for DNA Advantage, 25 ISE Base & 25 ISE Plus Endpoints, 25 Stealthwatch Flows (including Virtual Flow Collector & Management Console). Requires separate purchase of ISE appliance/ISE VM and DNA Center appliance
C9200L-DNA-P-48-3Y	C9200L DNA Premier, 48-port, 3Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-P-48-5Y	C9200L DNA Premier, 48-port, 5Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-P-48-7Y	C9200L DNA Premier, 48-port, 7Y Term – DNA, 25 ISE PLS and ISE BASE, 25 SWATCH
C9200L-DNA-E-24-3Y	C9200L DNA Essentials, 24-port, 3 Year Term license
C9200L-DNA-E-24-5Y	C9200L DNA Essentials, 24-port, 5 Year Term license
C9200L-DNA-E-24-7Y	C9200L DNA Essentials, 24-port, 7 Year Term license

C9200L-DNA-A-24-3Y=	C9200L DNA Advantage, 24-port, 3 Year Term license
C9200L-DNA-A-24-5Y=	C9200L DNA Advantage, 24-port, 5 Year Term license
C9200L-DNA-A-24-7Y=	C9200L DNA Advantage, 24-port, 7 Year Term license
C9200L-DNA-E-48-3Y	C9200L DNA Essentials, 48-port, 3 Year Term license
C9200L-DNA-E-48-5Y	C9200L DNA Essentials, 48-port, 5 Year Term license
C9200L-DNA-E-48-7Y	C9200L DNA Essentials, 48-port, 7 Year Term license
C9200L-DNA-A-48-3Y=	C9200L DNA Advantage, 48-port, 3 Year Term license
C9200L-DNA-A-48-5Y=	C9200L DNA Advantage, 48-port, 5 Year Term license
C9200L-DNA-A-48-7Y=	C9200L DNA Advantage, 48-port, 7 Year Term license
Power supplies	
Product Number	Product Description
PWR-C5-125WAC/2=	125WAC power supply spare
PWR-C5-600WAC/2=	600WAC power supply spare
PWR-C5-1KWAC/2=	1000WAC power supply spare
PWR-C5-BLANK=	Blank Module
Spare power cords	
CAB-TA-NA	AC power cord for Cisco Catalyst (North America)
CAB-TA-AP	AC power cord for Cisco Catalyst (Australia)
CAB-TA-AR	AC power cord for Cisco Catalyst (Argentina)

<u>CAB-TA-SW</u>	AC power cord for Cisco Catalyst (Switzerland)
<u>CAB-TA-UK</u>	AC power cord for Cisco Catalyst (United Kingdom)
<u>CAB-TA-JP</u>	AC power cord for Cisco Catalyst (Japan)
<u>CAB-TA-250VAC-JP=</u>	Japan 250VAC power cord for Cisco Catalyst (Japan)
<u>CAB-TA-EU</u>	AC power cord for Cisco Catalyst (Europe)
<u>CAB-TA-IT</u>	AC power cord for Cisco Catalyst (Italy)
<u>CAB-TA-IN</u>	AC power cord for Cisco Catalyst (India)
<u>CAB-TA-CN=</u>	AC power cord for Cisco Catalyst (China)
<u>CAB-TA-DN</u>	AC power cord for Cisco Catalyst (Denmark)
<u>CAB-TA-IS</u>	AC power cord for Cisco Catalyst (Israel)
<u>CAB-ACBZ-12A=</u>	AC power cord for Cisco Catalyst (Brazil), 12A/125V BR-3-20 plug up to 12A
<u>CAB-ACBZ-10A=</u>	AC power cord for Cisco Catalyst (Brazil), 10A/250V BR-3-10 plug up to 10A
<u>CAB-C15-CBN</u>	Cabinet jumper power cord, 250VAC 13A, C14-C15 connectors

WHERE TO BUY

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SOURCES

<https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-9200-series-switches/nb-06-cat9200-ser-data-sheet-cte-en.html>

27. FIȘA TEHNICĂ: E-PS – PIESE DE SCHIMB

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali : Se vor livra discuri similare cu livrate la instalare pentru: • Calculatoare de supervizare măsurare – câte 2 bucăți discuri din fiecare tip • Sursă de alimentare calculator de supervizare – 1 bucată • Stație operare automatizare - 1 disc	DA DA DA	
2.	Specificații de performanță și condiții privind siguranța în exploatare: Destinate utilizărilor continue 24/7.		
3.	Condiții privind conformitatea cu standarde relevante: Conform producător		
4.	Condiții de garanție și postgaranție Minim 2 ani garanție producător		
5.	Alte condiții cu caracter tehnic Declarație de conformitate CE/calitate, documente de garanție.		



28. FIȘA TEHNICĂ: E- CI - CENTRALĂ DE DETECȚIE, SEMNALIZARE ȘI STINGERE INCENDIU

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: – Centrală alarmă incendiu adresabilă; – Maxim 128 dispozitive adresabile/centrală; – Material carcasă: metalică/polycarbonat – Panou de comandă cu LED-uri (sau, și cu LCD); – Număr zone de intrare pe placă: min. 8; – Memorie evenimente: min. 1000 evenimente; – Posibilitatea de preluare în centrală a semnalelor de la detectorii de gaz metan; – Posibilitate de dezactivare a diferitelor zone; – Funcție de dezactivare a sirenei; – Coduri utilizator: multiple, din care: 1 cod principal (master) 1 cod de mentenanță; – Funcție de autoadresare; – Alimentare principală: 230VaC 50Hz - 15/+10%; – Sursa back-up: acumulatori calculați conform proiect – Umiditate: max 95% fără condensare; – Modul acționare electroventile stingere incendiu	DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Programare soft de la tastatură (panou frontal); – Autotestare și autodiagnosticare: indicare a stării sistemului; – Va comunica starea de alarmă către centrala de efracție sau către un sistem superior; – Centrala va prelua din câmp și containere semnale de alarmă de la toate echipamentele (butoane de incendiu, detectori de gaz și fum etc); – Funcționare tolerantă la întrerupere și scurtcircuit a buclei; – Dispozitive de alarmare alimentate de pe buclă, conforme EN 54-3 cu tonuri integrate de semnalizare conforme DIN 33404; – Posibilitate transmitere semnal de alarmă și defect tip contact către PLC de automatizare		
3.	Condiții privind conformitatea cu standarde relevante: – Conform standardelor EN 54-2 și EN 54-4		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate:		

	▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		
--	--	--	--



Previdia C100L

Centrala detectie incendiu analog adresabila cu o singura bucla neextensibila, max 240 adrese

Specificatii tehnice

- Model de carcasa mare
- Tensiunea de alimentare: 230Vca (+10% / -15% toleranta)
- Consum de curent maxim: 1.1A la 230Vca
- Tensiunea de iesire nominala: 27.6Vcc
- Tensiune de iesire: 19V-27.6Vcc
- Curent maxim de iesire: 4A
- Consumul placii de baza:
 - In stand-by: 150mA
 - Fara tensiune de alimentare: 130mA
- Curent maxim de incarcare a bateriei: 1.2A
- Capacitate baterii: 2x12Vcc, 17Ah
- Tensiunea de oprire a bateriei: 19V
- Siguranta sursa alimentare interna: T3.15A 250V
- Riplul curentului de iesire maxim: 260mV
- Temperatura normala de operare: -5 °C / +40 °C
- Clasa de izolare: I
- Grad de protectie a carcasei (EN 60529): IP30
- Dimensiuni: 497 x 380 x 97 mm
- Greutate: 6.1 Kg
- Culoare carcasa: Disponibilitate culoare pe gri sau pe rosu (rosu optional la comanda)



Caracteristici principale

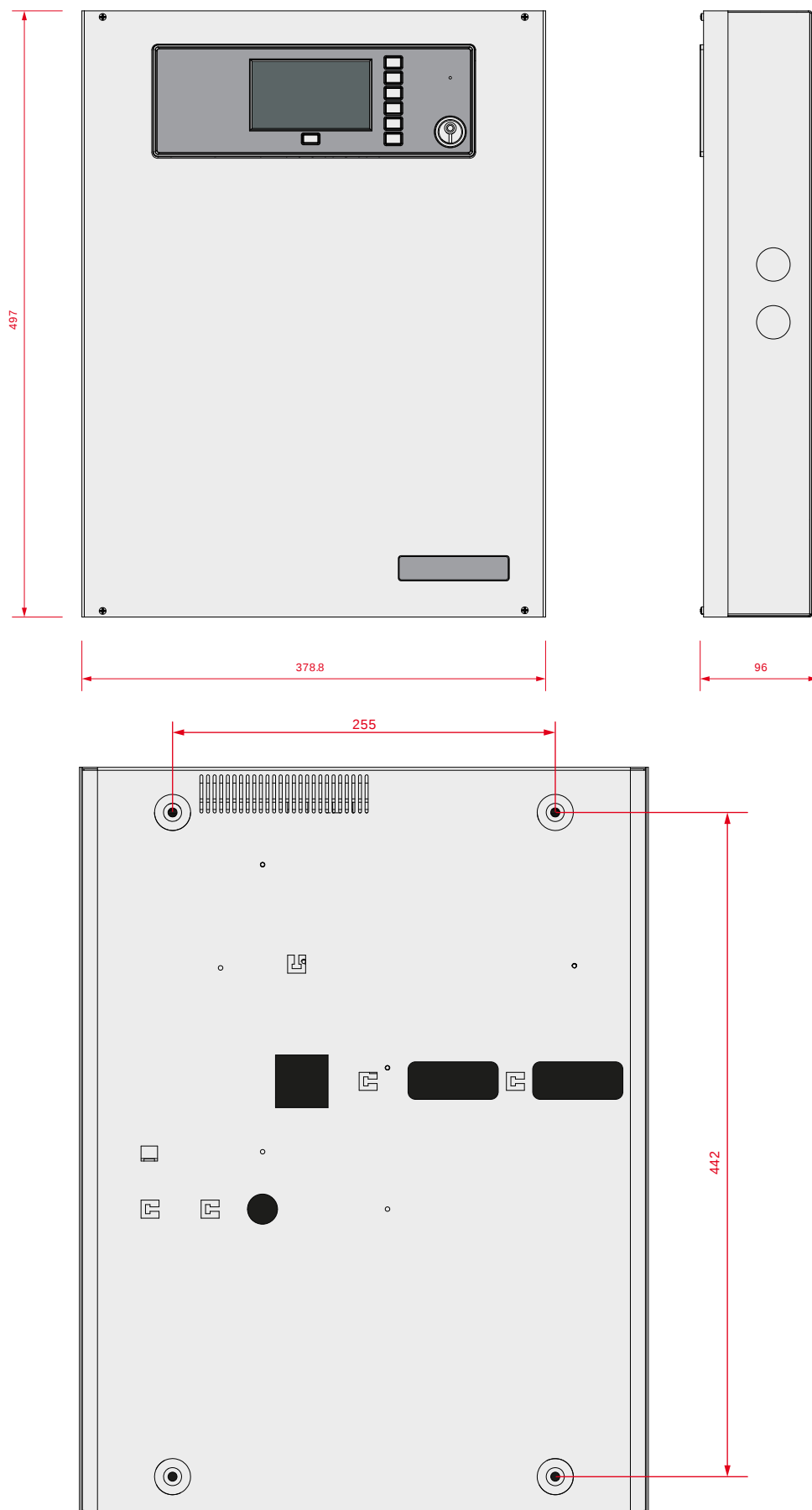
- Panou de control adresabil compact analog pentru detectia incendiilor
- O bucla, neextensibila
- Pana la 240 de dispozitive pe bucla
- Bucla multi protocol (dispozitive Inim, Apollo si Argus acceptate)
- Ecran tactil 4.3", color, 65000 de culori
- 4 canale de intrari/iesiri (I/O) de alimentare supravegheate disponibile
- Un releu incorporat pe placa de baza
- Port Ethernet cu o conexiune TCP-IP pe PCB
- Port USB pentru configurare
- Card MicroSD pentru salvarea/incarcarea datelor de configurare
- Modul de apelare optional cu comunicator vocal si digital PTSN/3G/GSM, facilitate SMS, conexiune de date

- Certificate CPR EN54-2, EN54-4 si EN54-13
- Certificare CPR EN54-21 pe toate canalele (IP/3G/GSM/PTSN)
- Retea Token Ring de pana la 48 de panouri, partajare completa de date si partajarea activarilor, bazata pe RS485
- Retea prin TCP-IP, pana la 20 de clustere de panouri
- Verificare video de pe orice camera IP Onvif

Caracteristici software

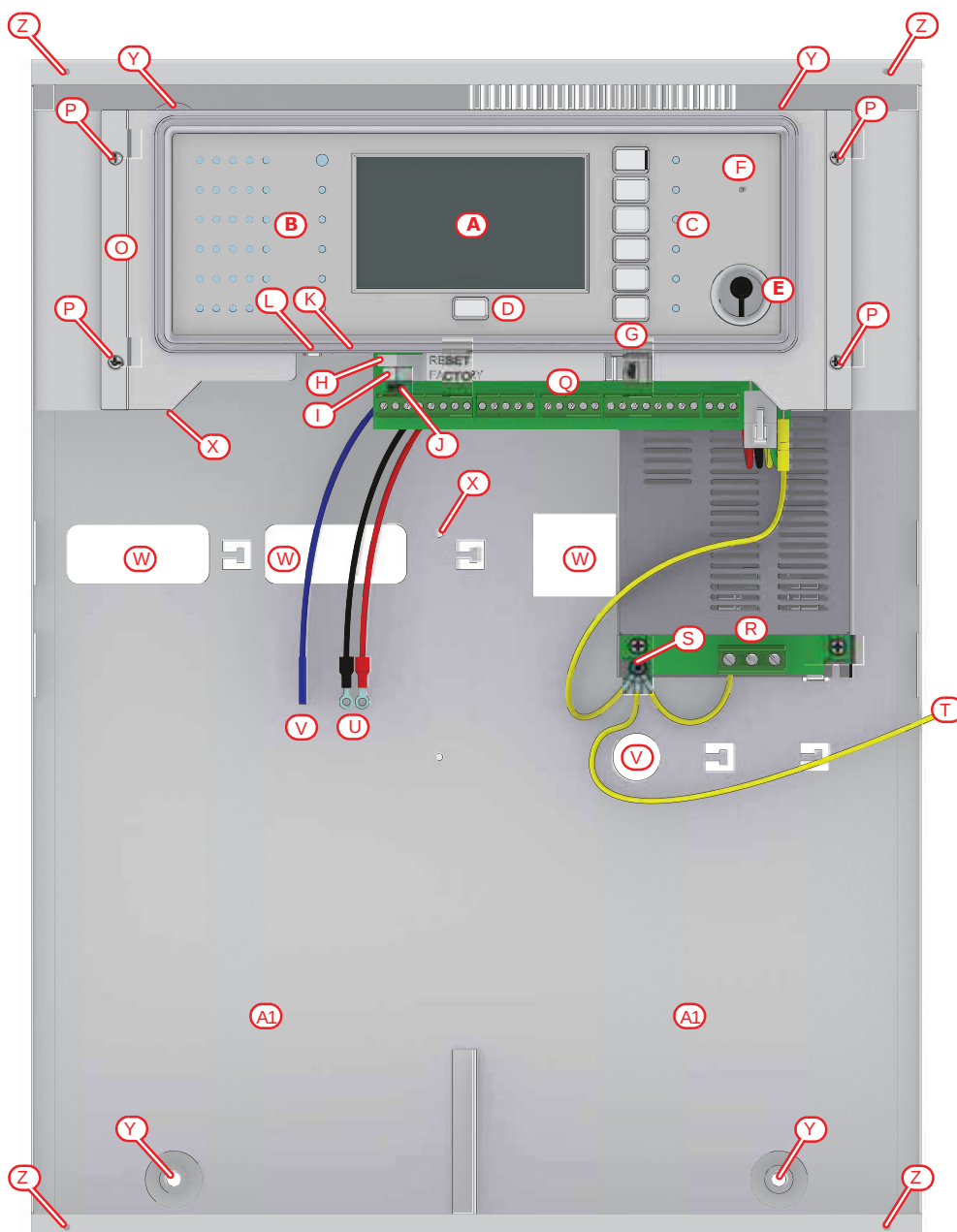
- Tehnologie OpenLoop
- Tehnologie LoopMap
- Tehnologia Versa++
- Configurarea harti grafice
- Gestioneaza protocolul Modbus TCP
- Verificare video a camerelor IP a alarmelor
- Protocol SIA-IP pentru comunicatie cu dispecerate
- Posibilitatea de a trimite mesaje SMS cu generare automata de text (cu modul de apelare)
- Posibilitatea de a trimite pana la 100 de mesaje vocale pentru maximum 8 minute (cu modul de apelare)
- Ecuatii de control pentru activari cu operatori logici (AND, OR, NOT, XOR, etc.)
- 1000 de zone software pentru fiecare panou de control
- 1000 de grupuri logice pentru fiecare panou de control
- 500 de declansari active pe fiecare panou de control
- 100 de actiuni
- 240 de grupuri logice care pot fi partajate in retea Hornet+ sau in cluster
- Functie Walk-test
- Memorie de 2000 de evenimente
- Inregistrarea automata a dispozitivelor pe bucla
- Adresarea automata a dispozitivelor pe bucla
- Administrare a 4 nivele de acces in conformitate cu EN54-2
- 4 nivele de parola
- 100 de coduri de utilizator
- Software programare PREVIDIA-STUDIO pe platforma Windows

Dimensiuni



Vedere carcasa interior

[A]	Display touchscreen
[B]	LED status
[C]	Buton pentru LED si functie
[D]	Buton pentru LED si alarma multipla
[E]	Slot cheie acces
[F]	Buzzer
[G]	Suport card MicroSD
[H]	Buton reset
[I]	Buton pentru resetare setari mod implicit (resetare fabrica)
[J]	Conector jumper de programare
[K]	Port Ethernet
[L]	Mini port USB
[M]	Conector pentru placa PREVIDIA-C-DIAL
[N]	Conector pentru placa PREVIDIA-C-COM
[O]	Suport pentru placa de baza
[P]	Suport surub ancorare
[Q]	Placa terminal
[R]	Terminale de alimentare
[S]	Impamantare
[T]	Fir de impamantare a placii frontale
[U]	Cabluri baterie
[V]	Sonda termica pentru baterii
[W]	Intrarea cablului
[X]	Locatii pentru suruburile de montare a placii optionale
[Y]	Amplasarea suruburilor de montare
[Z]	Locatii pentru suruburile de montare a placii frontale
[A1]	Carcasa bateriei



V1.0 / 23.11.2020

29. FISA TEHNICĂ: E- ISAI - INSTALATIE DE STINGERE AUTOMATĂ A INCENDIULUI

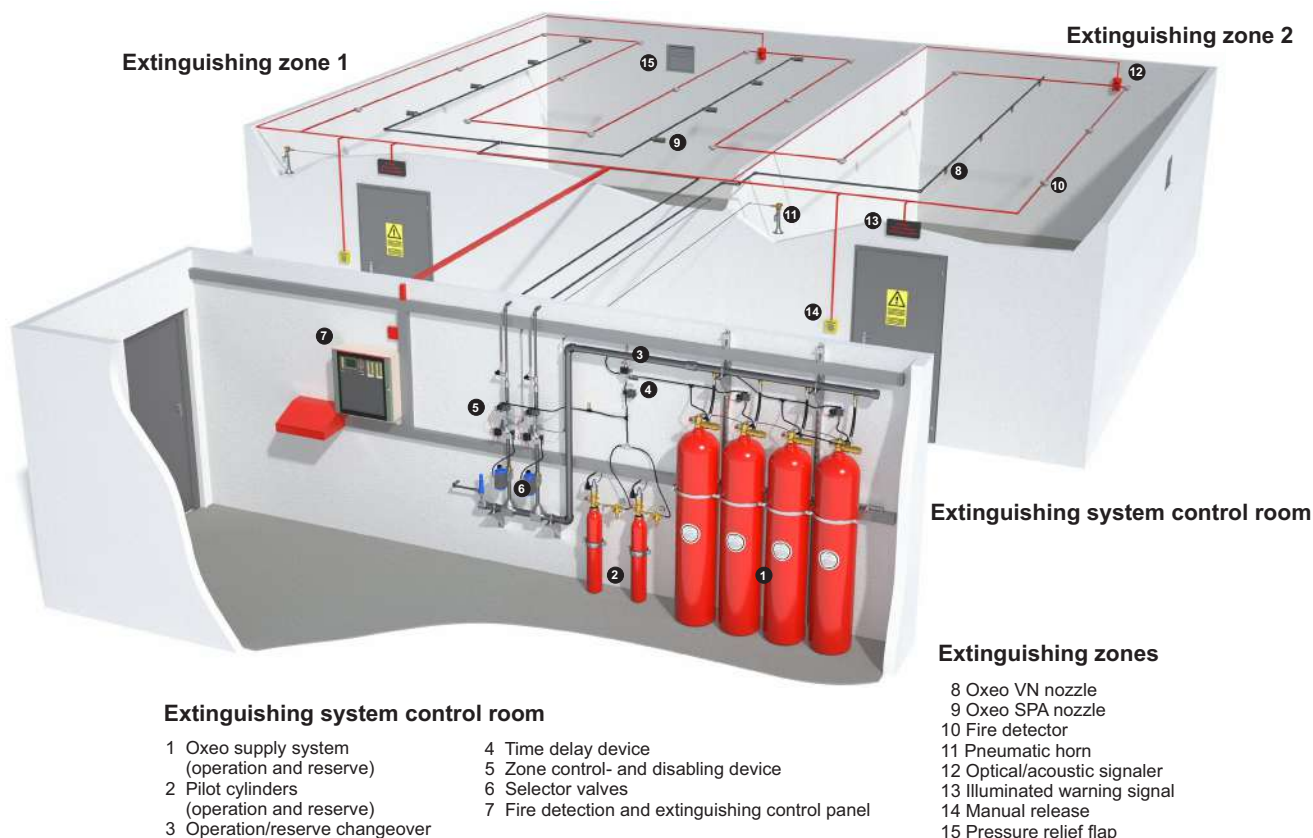
Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Corespondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: - Montaj în container metalic camera operare - Sistem automat cu inundare totală; - Presiune maximă 20 MPa; - Timp de stingere maxim 60 s; - Conținut gaz : 52% azot, 40% argon,8% CO2 - Posibilitate de stingere prin acționare electrică la 24 V, - Posibilitate de stingere prin acționare mecanică locală; - Sistem de stingere INERGEN . - Funcționare minimă 10 ani fără intervenții; - Indice NOAEL (nici un efect advers observabil) - 43% - Indice LOAEL (ce mai mic efect advers observabil) - 52%; - Indice ODP – 0 - Conținut minim sistem: - Butelii de gaz, - Racord flexibil; - Manifold; - Dispozitiv de acționare electric și pneumatic; - Duze refulare. —	DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA DA	DEFLAMMO
2.	Specificații de performanță și condiții privind siguranța în exploatare: — Conform caiet de sarcini		
3.	Condiții privind conformitatea cu standarde relevante: — Conform standardelor EN 54, EN 15004		
4.	Condiții de garanție și postgaranție: — Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. — Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: — Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. — Vor fi anexate: - instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); - instrucțiuni de exploatare; - buletine de încercări, verificări, probe; - declarație de conformitate.		





Inert gas extinguishing technology

Oxeo extinguishing systems



Extinguishing agent

Oxeo fire extinguishing systems by Minimax use argon and nitrogen to extinguish fires. These natural inert gases are particularly effective as extinguishing agents – especially in high risk fire areas. These systems are especially suitable for the protection of areas containing valuable and sensitive equipment as they are electrically non-conductive and leave no residues.

Oxeo extinguishing systems have a three-dimensional effect in the entire extinguishing zone: The released inert gases disperse homogeneously in the event of a fire and displace the oxygen at the source of the fire. Even hidden fire sources are, as a rule, extinguished instantaneously, not even spray obstructions present a problem. Oxeo extinguishing systems are therefore perfectly suited to providing fire protection for specific hazard areas with flammable liquids and other hazardous substances, as well as high risk fire areas.

Personal safety

Argon and nitrogen are not toxic in the concentrations required to extinguish fires – however, when released, the oxygen concentration is always significantly lower compared to the ambient atmosphere. For this reason, Oxeo extinguishing systems provide warnings to anyone present in the extinguishing zone through acoustic and optical alarms to evacuate the zone before the extinguishing process starts. These systems can also be used in areas that are accessed by people.

Argon (IG-01)

Argon is a noble gas obtained from the ambient air and present at 0.93% in the natural atmosphere by volume. Its density compared to air is 1.38 : 1. As argon is considerably heavier than air it is particularly suitable for spaces, such as false floors, that are less well insulated in their upper part. Due to its high degree of inertia ("true" inert gas), argon is also especially suitable for metal fires.

Nitrogen (IG-100)

The natural atmosphere contains 78.1% Nitrogen by volume, with a density of 0.967 : 1 compared to air. Nitrogen thus has a similar density to air, which permits nitrogen to disperse optimally throughout the extinguishing zone and to maintain an extinguishable inert gas concentration over a particularly long period. This qualifies nitrogen as a universal extinguishing agent for a broad range of applications.

Mixed gases (IG-55 / IG-541)

Mixed gases – containing both argon and nitrogen, and optionally small amounts of carbon dioxide – may also be used in Oxeo extinguishing systems. Typical mixed gases for the use in inert gas extinguishing systems are IG 55, consisting of 50% argon and 50% nitrogen, as well as IG 541, consisting of 52% nitrogen, 40% argon and 8% carbon dioxide.



Inert gas extinguishing technology

Oxeo extinguishing systems

Supply of extinguishing agent

The extinguishing agent is stored in high-pressure gas cylinders, which are then used in combination, enabling both the optimization of available space and extendibility of the Oxeo storage system. The filling pressure of every single cylinder is constantly monitored for leakage with pressure gauges and the results are displayed. Any error messages are transmitted to the fire detection and extinguishing control panel. This means that the quantity of available gas is constantly under control. The required quantity of extinguishing gas to be stocked depends on the fire hazard and the size and nature of the protected facility. The modular structure of the Oxeo storage system permits perfect adaptation to the customer's individual needs and local conditions and offers maximum flexibility, especially for system modification or extension.

Oxeo ConstantFlow Technology

Oxeo ConstantFlow Technology operates with high-performance pressure regulators mounted directly on the gas cylinder valves. At the start of the extinguishing procedure the operating pressure is thus already reduced to a maximum of 60 bar at the output of the gas cylinders. In addition a constant stream of extinguishing agent is created without a pressure spike. In conventional inert gas extinguishing systems on the other hand the gas escapes from the cylinders into the pipe network at the beginning of the extinguishing process with a charging pressure of up to 300 bar. This creates a pressure spike at the beginning of an extinguishing process as well as a heavy stream of extinguishing agent which rapidly decreases with the duration of the flooding. When using Oxeo ConstantFlow Technology the connected conduits and system components need only to be designed for the low pressure level of 60 bar maximum.

Typical areas of application

- Control stations, operation and control rooms
- Data Center, Server rooms and server racks
- Technical rooms
- Painting and powder coating systems
- Storage facilities for hazardous substances and flammable liquids
- Paternoster storage
- Machine tools
- Museums, archives

30. FIȘA TEHNICĂ: E-DG - DETECTOR DE GAZ METAN

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: – Material carcasă: ABS plastic UV stabilizat; – Sistem adresabil; – Umiditate relativă: 20-90%(fără condens); – Conexiune electrică: terminale cu șurub; – Valoare minimă de detecție: minim 5% L.E.L.; – Interval de alarmare 20%-50% L.E.L; – Detectează gazele pe principiul analizei aerului; – Algoritmi avansați de detecție și discriminare; – Instalare și întreținere ușoară; – LED dual, pentru vizibilitate 360 grade; – N/C (normal/închis)-N/O (normal/deschis) - ieșire selectabilă de releu; – Compatibil cu centrala de incendiu;	DA DA DA DA DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Conform caiet de sarcini		
3.	Condiții privind conformitatea cu standarde relevante: – SR EN 60529 grade de protecție		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate: ▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		





Gas detector series Installation Manual



These instructions shall be used by qualified service personnel only, who have been duly trained to install and maintain Gas detection systems.



WARNINGS

Valid for all variants of IP and ATEX Gas detectors

- Do not install and connect the gas detector without carefully reading these instructions. All operations must be executed by skilled personnel who are aware of the regulations and has attended a technical training course on products included in this manual.
- The housing must be earthed (grounded).
- Keep the sensor away from gas substances or solvents such as silicone and derivatives, acetone, all types of paints, alcohol & derivatives, cleaning solvents, turpentine, bleach, etc. These agents could damage the sensitive part of the sensor or permanently change the original setting. Strictly avoid to test the sensors with lighters or generic spray cans.
- When the sensor is outdoor installed, it's necessary to put an adequate cover over the sensor to avoid being directly wet by rain or snow.
- Do not install the sensor closed to vents, high speed air or vortexes.
- During the installation or maintenance of ATEX gas detectors, before opening the housing, make sure that the power is OFF (either 24Vdc or current loop) and that the application area is safe. Otherwise it's forbidden to open the sensor and execute connections.
- Do not disconnect any connectors or plug-in cards when the sensor is powered up.
- When the installation is completed, it's necessary to execute the electrical tests on the sensors by using the proper software, working with the simulation functions, generating pre-alarm, alarm and fault conditions and checking the exact match in the control panel or in any other device connected to the sensors
- For ATEX gas detectors it's mandatory to read carefully the safety instructions contained in the package.
- The Gas detector must be installed vertically with its nose facing down (see pictures).
- Do not unplug the connector of the sensitive element when it's powered and do not power the sensor when the head is not available



- The installation height is determined by the type of gas to be detected. Here below there are some examples; in case the type of gas is not included in this list, please check the specific gravity to avoid installation errors.
- **Examples:**
- Heavy gases: about 30 cm from the ground (eg. Propane, gasoline vapors etc.)
- Light gases: about 30 cm from the ceiling (eg. Methane, Hydrogen, etc)
- The Oxygen and Carbon Monoxide gas detectors have to be installed mainly at ca. 1,60 cm from the ground.

NOTES NOT SUBJECT TO REVIEW

This image shows a full page of a document template designed for handwriting practice. It features a series of evenly spaced, horizontal dashed lines across the entire width of the page. The background is plain white, providing a clear guide for letter height and placement. There are no margins, text, or other markings present.

Gas detector Moon series - Overview

The new generation of gas detectors Industrial series is available with 5 different sensing elements, in order to provide a very large range of Gas detection applications.

The sensor can be combined with 6 different Communication Interfaces that can be selected according to the installation needs. Details and diagrams in the next pages.

The detector has been designed to give to the installer the possibility to check the sensor parameters, set and change the sensor element, provide maintenance service directly on-site, through a dedicated software application (Level 1 and Level 2).

Level 1

Access without password: it is possible verify the set parameters and make tests as alarm, prealarm and fault simulations.

Only visualization

- Prealarm and alarm threshold
- Prealarm and alarm filters
- 4-20mA working range
- Initialization delay
- Sensor life (working hours)
- Alarms number (only real alarms occurred during sensor life are counted, not software simulation).

Level 2

Password protected: it is possible set the sensor, with the support of calibrated gas cylinders, without any electronic adjustment trough trimmers or jumper, but easily trough the software interface. Moreover it is possible finalize the sensor element (head) substitution, even by software. This function is conform to the international technical norms in order to protect the detector from external sabotage or setting modification by not authorized personal.

The head substitution can be done only with a new one (same item). A different head will generate a failure into the detector.

L2 Parameters editing

- Prealarm and alarm threshold
- Prealarm and alarm filters
- 4-20mA working range
- Initialization delay
- Sensor element (head) substitution
- Calibration

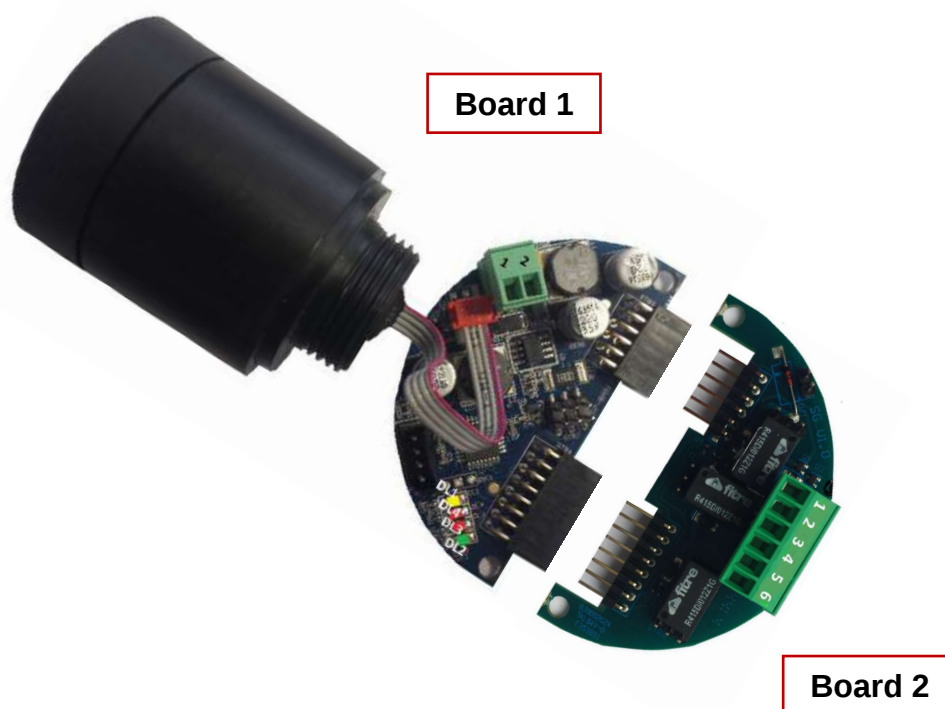
Gas detector Moon series - G7(AP) E7(AD) product range

Description

Industrial gas detectors, available with IP55 metal housing or **ATEX II 2G Ex-d IIC T6-Gb** housing. The detector is combined with two boards: the first card controls the sensing element, and depends to the detected Gas type; the second one controls the communication to the control device (see the table below) and it is available either for connection to specific panels or for connection to normal electrical cabinets and PLC.

Sensors for automatic gas detection are generally suitable for explosion risks, Hydrocarbons (L.I.E. detection), toxicity Ammonia, Carbon Monoxide (ppm detection) and Oxygen control (% detection).

Code	Description	Page
G7-LV	Loop Panels with Vega protocol	09
G7-RL	3 relays connection	10
G7-AS	Conventional and Addressed Modules	11
G7-42	4-20mA connection	12
G7-LE	Loop Panels with Enea protocol	13
G7-OC	Open-Collector connection	14



Gas detector Moon series - Technical Features

General Features

Power Supply:	12/24Vdc
Semiconductor sensors:	Max 50/80 mA (StBy/Alarm)
Catalytic sensors:	Max 70/100 mA (StBy/Alarm)
Elettrochemical cell sensors:	Max 30/60 mA (StBy/Alarm)
Operating temperature:	0 to 40 °C with compensation measurement
Humidity	Up to 90% relative, non-condensing
Max air speed	10 m/sec

Standard Thresholds

L.I.E.:	15% prealarm and 30% alarm
P.P.M.:	100ppm prealarm and 200ppm alarm
Oxygen (defect):	18% prealarm and 15% alarm
Oxygen (excess):	24% prealarm and 27% alarm

Mechanical Features

G7 metal housing	IP55 ADFT Dim. (HxWxD) 141x100x60mm Weight 370gr
------------------	--

E7 explosion proof housing	ATEX II 2G Ex-d IIC T6 Dim. (HxWxD) 170x90x78,50 Weight 1Kg
----------------------------	---

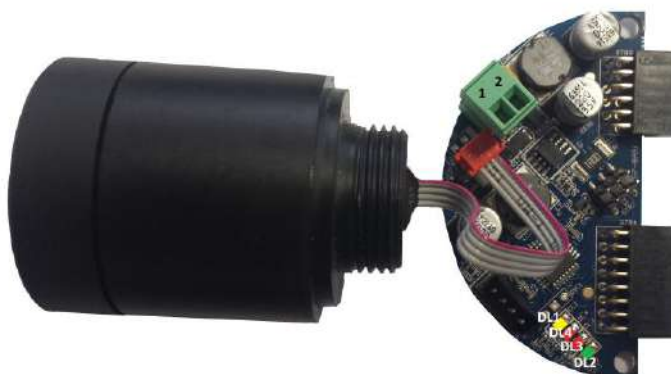
Electronic Base Board

LEDs Description

LD1 red color, prealarm, Gas presence equal or higher to the prealarm threshold.
LD2 red color, alarm, Gas presence equal or higher to the alarm threshold.
LD3 yellow color, failure.
LD4 green color, power supply presence.

J1 Terminal board

- | | |
|---|--------------------|
| 1 | Negative |
| 2 | Positive 12/24 Vdc |



LIFE OF THE SENSORS

The average life of the sensors:

- Catalytic: in a clean environment the life can be of 3/4 years. In presence of pollution, the average life is reduced and as well the sensitivity.
- Electrochemical cell: in a clean environment, the life can be of 2/3 years. In presence of pollution, the average life of the sensor rapidly decreases.
- Semiconductor: in a clean environment the life can be of 3/4 years. In presence of pollution, the average life rapidly decreases and the values reading is altered.

MAINTENANCE

- The Gas detectors maintenance is mandatory and it ensures the proper functioning of the sensor.
- The maintenance has to be planned according to the installation site and to the deterioration experienced by the sensors in the various environments.
- All operations must be executed in compliance with the relevant regulations in force.

Description

The 3 relays interface provide a free of voltage relay for each single event: alarm, prealarm and detector fault.

It is possible to set each single relay contact as NO or NC, trough the jumpers on board.

Power supply can be set to 12Vdc or 24Vdc opening or closing the dedicate jumper.

Additional Technical Features

Relay contacts current max 1A @ 30Vdc

Electronic Board type G7-RL

J1 Terminal board

- | | |
|---|-----------------|
| 1 | Alarm output |
| 2 | Alarm output |
| 3 | Prealarm output |
| 4 | Prealarm output |
| 5 | Failure output |
| 6 | Failure output |

Settings

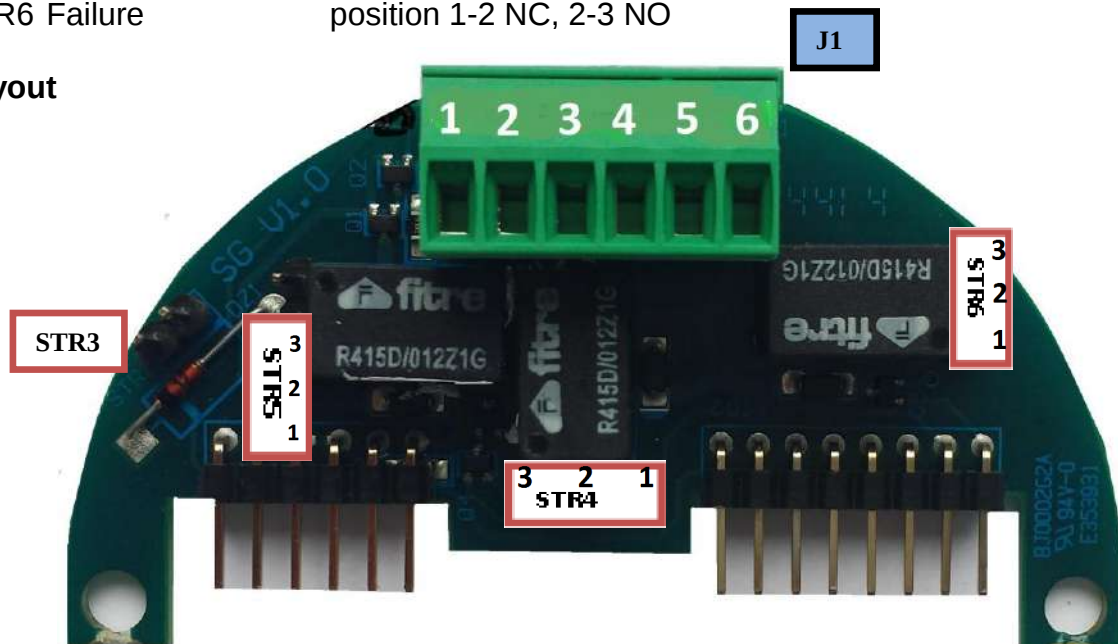
STR3 Opened **24Vdc** - Closed **12Vdc**

STR4 Prealarm position 1-2 NC, 2-3 NO

STR5 Alarm position 1-2 NC, 2-3 NO

STR6 Failure position 1-2 NC, 2-3 NO

Layout



G7-AS Conventional Interface

Description

The interface is developed to keep simple.

The connection to input modules, or to conventional panels, requires this interface has to be ordered with the specific resistors, for the specific panel/modules.

The resistors have to be pre-configured in manufacturer laboratories.

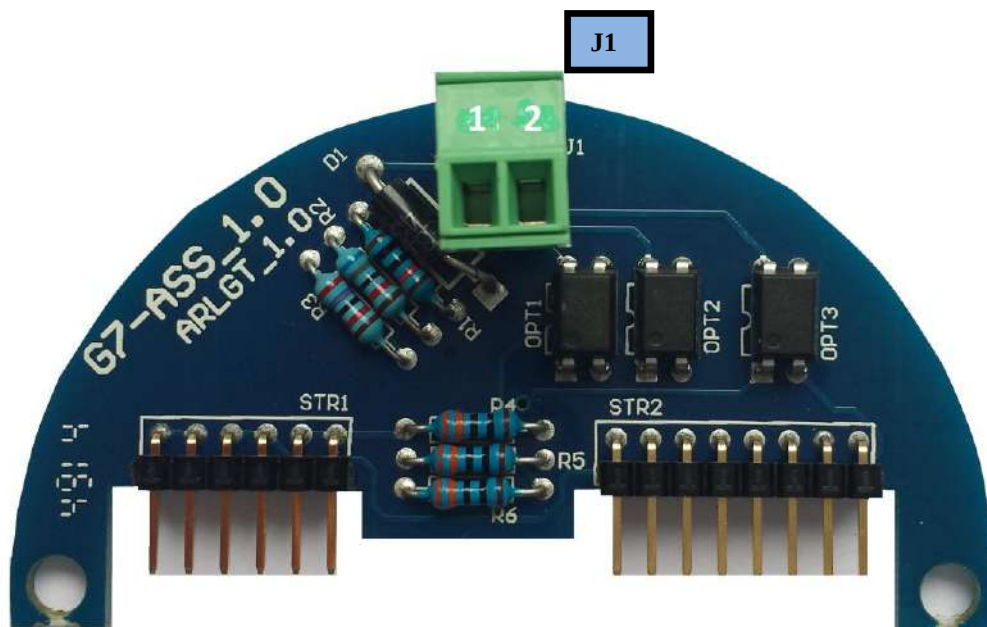
The interface allows a 2 wires connection without any balancing resistor.

Electronic Board type G7-AS

J1 Terminal board

- 1 Zone positive
- 2 Zone negative

Layout



Note

Before connecting the interface to the module or to the panel, verify that the balancing resistors are correct for the module/panel it self.

Description

The G7-42 interface manages a 4-20mA output in the following way:

1. Active output with positive signal (Default)
2. Active output with negative signal
3. Passive output with positive signal
4. Passive output with negative signal

Electronic Board type G7-42

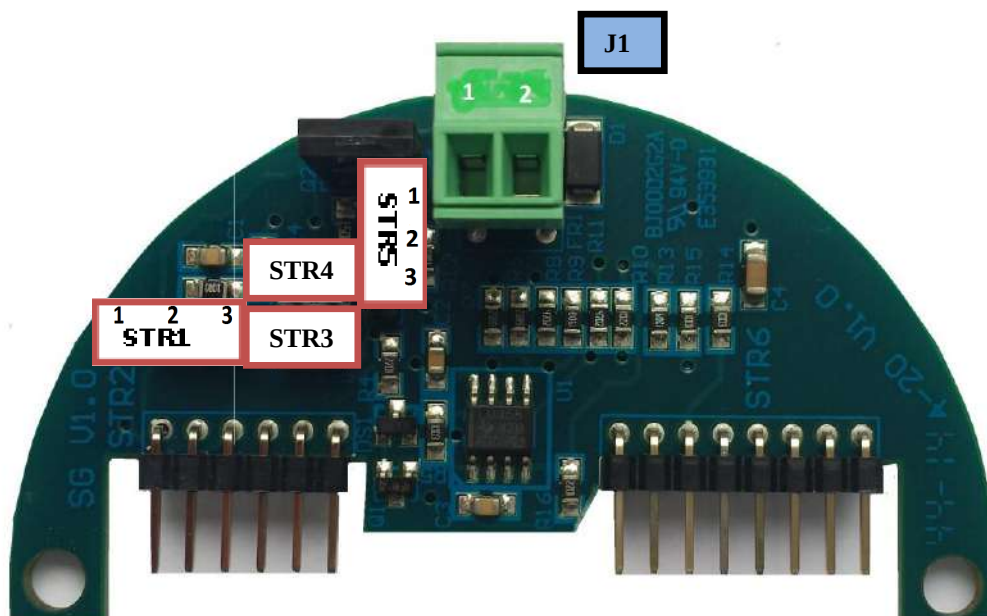
Settings

Type	Board G7-42				Base Board 1
	Str1	Str3	Str4	Str5	Str5
1	Close 2-3	Open	Close	Close 2-3	Open
2	Close 1-2	Close	Open	Close 1-2	Open
3	Open	Open	Close	Close 2-3	Close
4	Open	Close	Open	Close 1-2	Close

J1 Terminal board

Terminal	Type 1	Type 2	Type 3	Type 4
1	Positive	Negative	Positive	Negative
2	Negative	Positive	Negative	Positive

Layout



Note

Jumpers can be only moved with the board is switched off (without power supply).
Verify very well the right output type required, before power on.
A wrong setting may damage the interface.

Description

The interface has been developed in order to be connected directly to control panels with ENEA (INIM) protocol Loop lines. The communication support the different sensor types (Methane, Hydrogen, Propane, etc) and the real time analog value with three types of measurement units: **L.E.L, P.P.M, %**

Sensor addressing

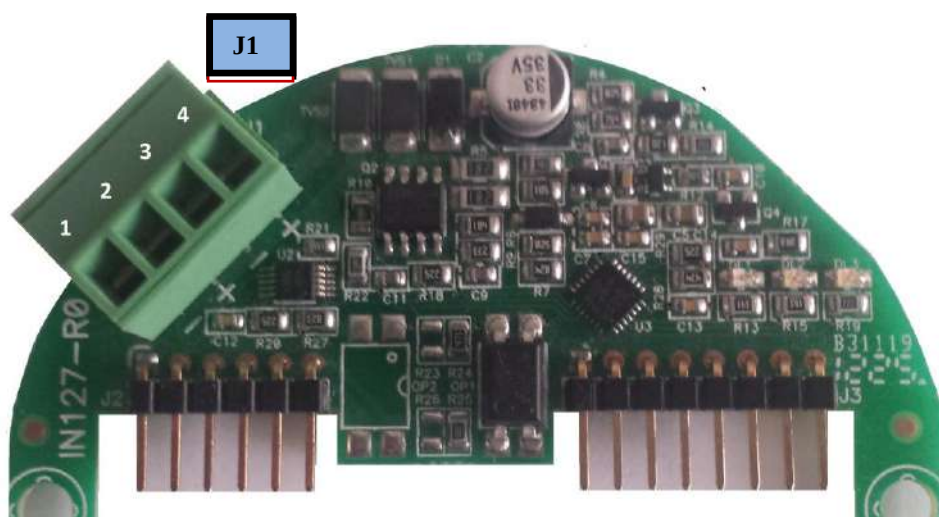
As other ENEA devices, G7-LE interface has a serial-number address on board.
To assign to the control panel, refer to ENEA manuals and documentation.

Electronic Board type G7-LE

J1 Terminal board

- 1 - Loop IN
- 2 + Loop IN
- 3 - Loop OUT
- 4 + Loop OUT

Layout





INIM Electronics S.r.l.
Via Fosso Antico
Loc. Centobuchi
63033 Montepandone (AP)
www.inim.biz

31. FIȘA TEHNICĂ: E- DFT - DETECTOR MULTICRITERIAL FUM ȘI TEMPERATURĂ

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: – Material carcasă ABS plastic UV stabilizat – Grad de protecție minim IP 21; – Sistem adresabil – Temperatura de lucru: 0...+40 grade Celsius; – Umiditate relativă: 20-90%(fără condens); – Curent absorbit stand-by: maxim 5mA; – Curent absorbit alarmă: maxim 100 mA – Conexiune electrică: terminale cu șurub; – Contact releu : NO/NC – Compatibil cu centrala de incendiu;	DA DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Detectează fumul vizibil produs de materiale care ard încet sau mocnit (exemplu mobilier, plastic, fum produs de PVC supraîncălzit dar neurs);		
3.	Condiții privind conformitatea cu standarde relevante: – Conform standarde în vigoare EN 54 ,SR EN 60529		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate: ▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		



ID300

ED300 Smoke and heat detector



IRIS series detectors maintain the ease-of-use of conventional detectors, yet are capable of providing a series of technical solutions that until today were provided by only the most sophisticated addressable analogue systems.

IRIS series detectors, as a result of advanced technologies based on new-generation microprocessors, represent the most advanced technology that fire detection equipment can offer today. They provide a vast spectrum of options and flexible functions, all configurable through the EDRV1000 Driver (Versa++ technology). A sophisticated set of algorithms, custom created by Inim's R&D professionals, provide these detectors with unequalled reliability and the highest immunity to false alarms.

Each device is identified by a unique factory-assigned serial number. Therefore, these devices do not require the use of an address programmer. The serial number is located on the device label and on two stickers which can be positioned on the system layout and on the mounting base.

VERSA ++ technology allows these detectors to be configured in accordance with the required detection method. This allows the detectors to adapt perfectly to external conditions and provide prompt, effective detection of events.



The EDRV1000 driver will allow you to work on the following parameters made available by **VERSA++** technology:

- Operating mode selection (flashing on LED, flashing on remote indicator).
- Heat and smoke threshold selection.
- Manual activation of the LED.
- Fault report enquiry.
- Complete diagnostics.

Main features

- Newly designed optical chamber.
- Sealed upper-section.
- 500 μm hole-diameter mesh insect screen.
- Tricolour LED: red for alarm; green flash (optional) for identification after manual activation from the control panel; yellow for trouble (fault or high level of contamination in the optical smoke chamber).
- Versa++ technology.
- 5 different operating modes (configurable via the EDRV1000 driver);
 - "PLUS" mode: the detector will trigger an alarm when the sensed values exceed the programmed smoke or temperature threshold. In the event of a rapid rise in temperature, the smoke detection sensitivity will be increased to its maximum value. This operating mode, characterized by high sensitivity, allows detection of fast-burning blazing fires (for example, inflammable liquids such as alcohol).
 - "OR" mode: the detector will trigger an alarm when the sensed values exceed the programmed smoke and temperature thresholds. This operating mode, characterized by discrete sensitivity analysis, allows the detector to sense fires with a high emission of smoke and low heat output (for example, smoldering fires) and also fires with low emission of smoke and high heat output (for example, burning chemicals).
 - "AND" mode: the detector will trigger an alarm only when the sensed values exceed the set smoke and temperature thresholds at the same time. This operating mode lowers the false alarm rate. However, given the reduced response, it is necessary to evaluate the risk factor before selecting this mode.
 - "SMOKE" mode: the detector will trigger an alarm when the sensed value exceeds the set smoke threshold (0.08 – 0.10 – 0.12 – 0.15 dB/m).
 - "HEAT" mode: the detector will trigger an alarm when the sensed value exceeds the set temperature threshold (A2S – A1R – B – BR).
- Complete Diagnostics: contamination level reading and values measured in real-time (by means of EDRV1000).
- Non-resettable alarm counter.
- Memory of the smoke and temperature levels measured in the five-minute period prior to the last alarm.
- Vast range of options (configurable by means of EDRV1000 driver).

Technical specifications

- Certifications: LPCB CPD EN54/pt5-pt7.
- Detection principle: heat and light scattering mass (Tyndall effect).
- Alarm transmission type: polling independent.
- Identification of contaminated/faulty detector.
- Sampling: depends on the selected operating mode.
- Power voltage: 19-30Vdc.
- Current draw during standby: 90 μA .
- Current draw during alarm: Max40mA.
- Sensitivity:
 - Thermistor: A2S (fixed threshold at 58°C), A1R (fixed threshold at 58°C and rate-of-rise), B (fixed threshold at 72°C), BR (fixed threshold at 72°C and rate-of-rise).
 - Optical smoke chamber: 0.08 – 0.10 – 0.12 – 0.15 dB/m.
- Operating modes: AND / OR / PLUS / HEAT / OPTICAL SMOKE.
- Base fitting: bayonet coupling.
- Protection rating: IP43.
- Height with EB00X0 base: 54 mm.
- Diameter: 109 mm.
- Weight (including base): 160 g.



ORDER CODES

ID300: Conventional heat and smoke detector.

EB0010: Mounting base for ENEA and IRIS detectors.

EB0020: Relay base for ENEA and IRIS detectors.

BDTB: EB00X0 adaptor base for PG16 surface-mounted raceways.

FI100: Remote indicator.

ITK100: ToolKit for device maintenance and configuration.

REFER TO

ITD002: Iris Detectors Wiring Diagram.

ITI004: Enea and Iris Detectors Installation.

32. FIȘA TEHNICĂ: E-DM - DECLANȘATOR MANUAL

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: – Material carcasă PC/ABS plastic, culoare roșu similar RAL 3020; – Grad de protecție IP 66/67; – Temperatura de funcționare : -40° C ...+ 70° C; – Umiditate relativă: 0-95%(fără condens); – Conexiune electrică: terminale cu șurub max. 1,5mm² (AWG 30-14) ; – Reset cu cheie; – Indicator alarmă: LED roșu; – Cablare pe 2 fire, instalare simplă; – Impedanța în alarma : 680 Ohm - jumper tăiat – 2 microcontacte NO, NC - 30V/1A – Compatibil cu centrala de incendiu	DA DA DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Conform standard EN54-11:2001/A1:2005, tip A – Utilizabil la sistemele convenționale de antiincendiu		
3.	Condiții privind conformitatea cu standarde relevante: – conform standarde în vigoare EN 54-11, type A, – EN 50130-4; – ISO 384;		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate: ▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		



ANALOG ADDRESSABLE RESETTABLE MANUAL CALLPOINT



Each callpoint from the ENEA series is identified by a unique factory-assigned serial number. Therefore, these devices do not require the use of an address programmer. The serial number is located on the device label and on two stickers which can be positioned on the system layout and on the mounting base.

Once the loop wiring is complete, the EDRV1000 driver or control panel via the LoopMap application, enrolls all the connected devices automatically and reconstructs a map indicating the wiring order of the connected devices, "T" junctions and all the physical characteristics of the Loop.

LoopMap technology allows you reconstruct the exact installation layout and thus create an easy-to-use, interactive loop map which greatly simplifies and speeds up searches relating to system faults and maintenance work.

The serial self-addressing function, developed by Inim's R&D professionals, allows you to add new devices to an existing system without reprogramming it. In this way, the LoopMap specifications remain unchanged and the new devices are assigned available logical addresses (in order) and correctly positioned on the interactive map. The self-addressing function also eliminates many of the problems connected with the manual addressing procedure, such as time-consuming operations on rotary/DIP switches and errors caused by duplicated or wrong addresses and similar problems. LoopMap technology not only makes the self-addressing process more reliable, it also speeds up fault searches, facilitates system expansion, simplifies changes and assures greater flexibility and lower costs.

Fixed manual callpoint systems are used to integrate the automatic signalling capacities of fire detection systems, as described in the regulations in force. Each zone must include a certain number of manual callpoints. At least one of these callpoints must be located in a place which can be easily reached from all parts of the zone, at a distance of not more than 30m in low to average risk environments and 15m in average to high risk environments.

Alarm signalling is activated by pressing the transparent plastic frontplate (no broken glass) and reset by means of the plastic key. The operating status analysis is implemented by the callpoint which transmits the completed reports to the control panel.

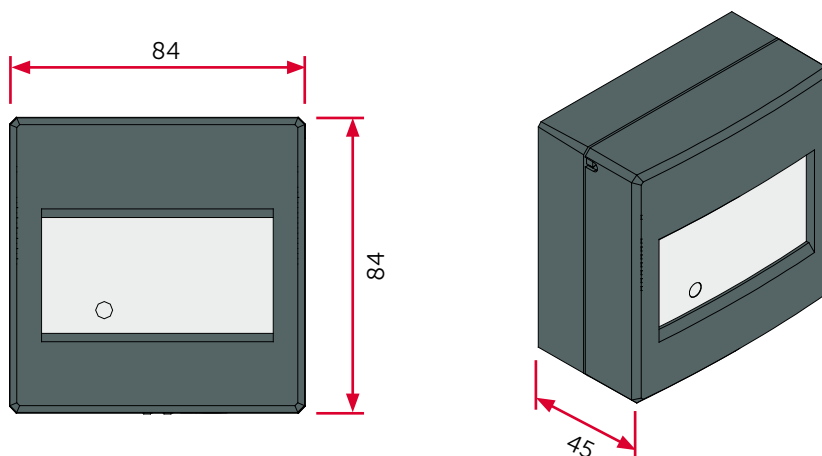
The device is equipped with a line isolator which is capable of isolating eventual short-circuits on the loop.



TECHNICAL SPECIFICATIONS

- Certification: LPCB CPR EN54pt11/pt17
- Serial self-addressing (each device is identified by a factory-assigned serial number)
- Built-in short-circuit isolator
- 240 addresses
- Cable: 2x1mm – 2x2mm
- LED: multicolor for device status signalling
- Operating voltage: from 10 to 30V
- Current draw during standby: 80µA
- Current draw during alarm: 5mA
- Alarm signals by colored LED and colored flag
- Operating temperature: -5°C .. +40°C
- Dimensions (HxWxD) 84X84X45 mm
- Weight: 126 g

DIMENSIONS



IN THE PACKAGE

- Package dimensions: 110 x 97 x 57 mm
- Weight with packaging: 170g

ORDER CODES

EC0020: analog addressable manual callpoint with resettable element

WCP0020: transparent plastic screen against accidental activation for EC0020/IC0020 callpoint

FCP0020: plastic bracket for flush mounting for EC0020/IC0020 callpoint

DBCP0020: deep box for external pipe fitting for EC0020/IC0020 callpoint

KCP0020: key for resettable element for EC0020/IC0020 callpoint

33. FIȘA TEHNICĂ: E-SI - MODUL INDUSTRIAL DE AVERTIZARE CU FLASH PENTRU INCENDIU

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametri tehnici și funcționali : – Material protecție polycarbonat; – Material carcasă ABS plastic UV stabilizat – Tensiune nominală : funcție de sistemul ales; – Culoare: rosu; – Temperatura de lucru: -20...+50°C; – Putere acustică: minim 90 dB la 1m; – Semnal luminos: flash rosu; – Lampa Flash High Bright LED; – Compatibil cu centrala de incendiu adresabilă.	DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Autoprotecție contra tăierii firelor și a sabotajului;		
3.	Condiții privind conformitatea cu standarde relevante: – SR EN 54		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate: ▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		



ANALOGUE ADDRESSABLE VISUAL/AUDIBLE ALARM INDICATORS, WALL MOUNT



ES20x0RE



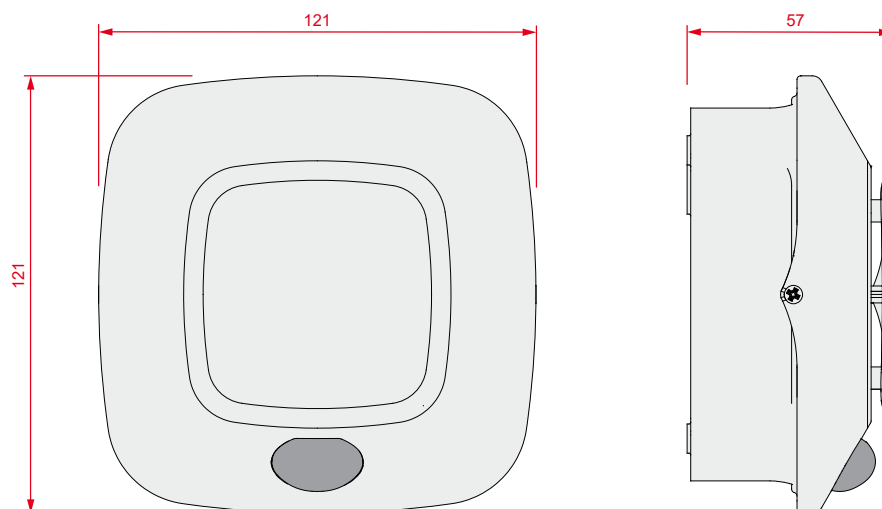
ES20x0WE

Addressable visual/audible-alarm indicators for wall mounting, IP65 protection rated.

Volume, flash intensity and sound sequences can be selected via the control panel from the 14 tones on-board the device (and 16 voice messages available in 8 different languages, only for versions with the voice function). For models with the voice function, it is also possible to customize tones/voice messages by means of the EITK2000.

The device is powered via the loop but is equipped with terminals for an optional separate power input.

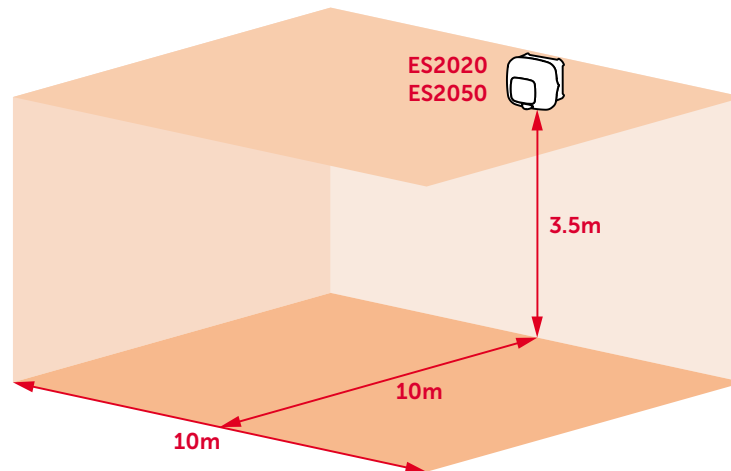
Available in red or white casing.



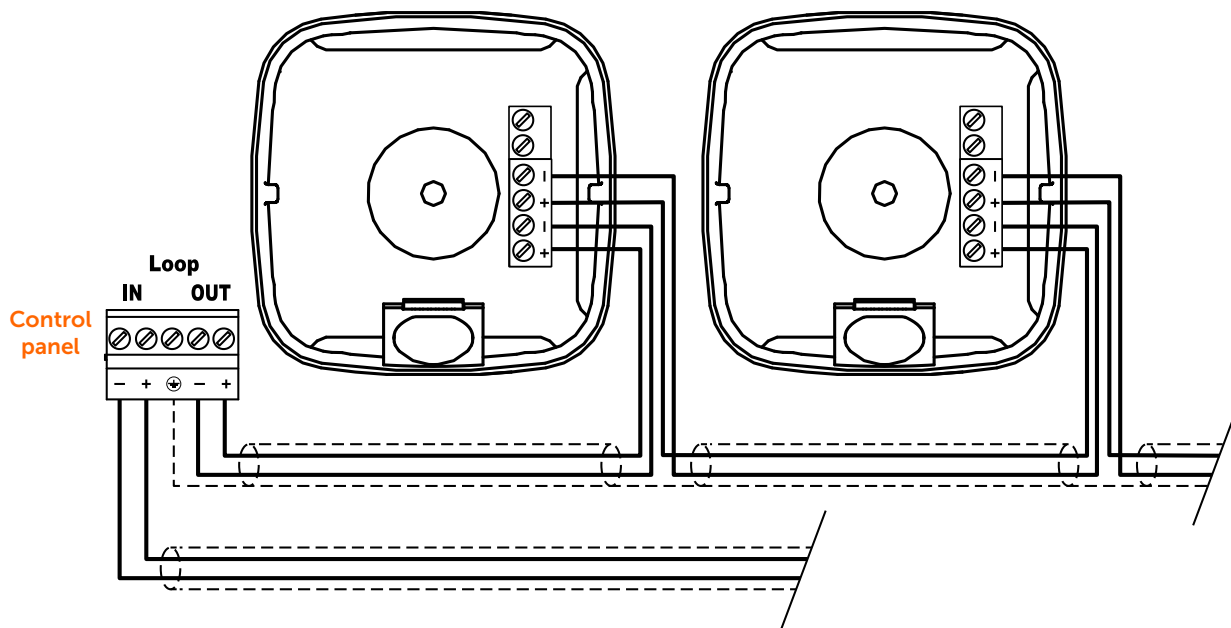
Main features

Main features	ES2010	ES2020	ES2030	ES2050
Operating voltage	from 18 to 30VDC			
Stand-by current draw	200µA			
Maximum current draw	25mA	40mA	25mA	40mA
Installation method	Wall mount			
Maximum installation height	-	3.5m	-	3.5m
Light coverage according to EN54-23	-	W 3,5-10	-	W 3,5-10
Flash frequency	-	0.5Hz	-	0.5Hz
Flash color	-	White	-	White
Number of selectable tones	14		104	
Sound pressure at 1mt	98dB			
IP Protection grade	IP65 (IP21 EN54-3 certified)			
Operating temperature	from -10 to 55°C			
Synchronization	Yes			
Multicolor indicating LED	Yes			
Built-in short-circuit isolator (EN54-17)	Yes			
Dimensions	121 x 121 x 57mm			
Weight	150g			

FLASH COVERAGE VOLUME



CONFIGURATION DIAGRAM



ORDER CODES

ES2010RE	Audible alarm indicator, addressable, in red casing
ES2010WE	Audible alarm indicator, addressable, in white casing
ES2020RE	Visual/Audible alarm indicator, addressable, in red casing
ES2020WE	Visual/Audible alarm indicator, addressable, in white casing
ES2030RE	Audible alarm indicator with voice alert, addressable, in red casing
ES2030WE	Audible alarm indicator with voice alert, addressable, in white casing
ES2050RE	Visual/Audible alarm indicator with voice alert, addressable, in red casing
ES2050WE	Visual/Audible alarm indicator with voice alert, addressable, in white casing

34. FIȘA TEHNICĂ: E- TA - TRANSPONDER ADRESABIL

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici și funcționali: – Material carcasă: polycarbonat; – Tensiune alimentare : 12-40 Vdc; – Număr intrări : minim 4 buc.; – Număr ieșiri : minim 2 buc. (contact releu); – Contact releu: 30Vcc/1A; – Umiditate: max 95% fără condensare; – Temperatura de lucru: -10...+50°C; – Grad de protecție: minim IP 30; – Sistem adresabil; – Compatibil cu centrala de detecție incendiu/centrala de efracție; – Conexiune electrică: terminale cu șurub;	DA DA DA DA DA DA DA DA DA DA DA DA	INIM
2.	Specificații de performanță și condiții privind siguranța în exploatare: – Utilizat pentru preluarea în centrala de detecție incendiu, declanșatoarelor manuale convenționale – Toate transponderele se vor monta într-o cutie metalică cu grad de protecție minim IP54.		
3.	Condiții privind conformitatea cu standarde relevante: – Conform standardelor EN54-17 și EN54-18		
4.	Condiții de garanție și postgaranție: – Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. – Produsul va corespunde normelor tehnice și standardelor europene.		
5.	Condiții cu caracter tehnic: – Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. – Vor fi anexate: ▪ instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); ▪ instrucțiuni de exploatare; ▪ buletine de încercări, verificări, probe; ▪ declarație de conformitate.		



EM3xx

MULTI INPUT/OUTPUT MODULE AND CONVENTIONAL LINE INTERFACE



991g/03
991g/04
991g/05
991g/06
991g/07



EN 54-17
EN 54-18

0832
0832-CPR-F0444
0832-CPR-F0445
0832-CPR-F0446
0832-CPR-F0447
0832-CPR-F0448



VERSA⁺



The EM3xx multi input/output module from **ENEA** series, provide up to 4 input and/or 4 output according to model. Each input/output is independent and fully programmable and can be associated to any control panel or network event.

Each device from the ENEA series is identified by a unique factory-assigned serial number. Therefore, these devices do not require the use of an address programmer. The serial number is located on the device label and on two stickers which can be positioned on the system layout and on the mounting base.

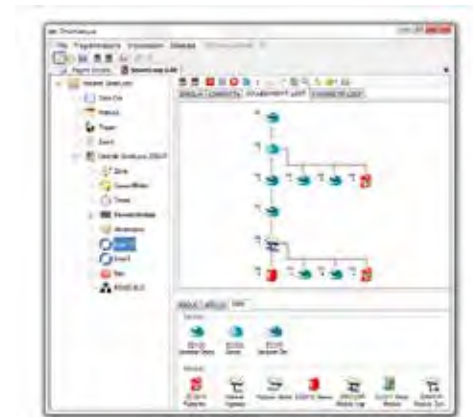
Once the loop wiring is complete, a manual programmer or a control panel via the **LoopMap** application, enrolls all the connected devices automatically and reconstructs a map indicating the wiring order of the connected devices, "T" junctions and all the physical characteristics of the Loop. LoopMap technology allows you reconstruct the exact installation layout and thus create an easy-to-use, interactive loop map which greatly simplifies and speeds up searches relating to system faults and maintenance work.

The serial self-addressing function, developed by Inim's R&D professionals, allows you to add new devices to an existing system without reprogramming it. In this way, the **LoopMap** specifications remain unchanged and the new devices are assigned available logical addresses (in order) and correctly positioned on the interactive map. The self-addressing function also eliminates many of the problems connected with the manual addressing procedure, such as time-consuming operations on rotary/DIP switches and errors caused by duplicated or wrong addresses and similar problems.

The inputs of EM34xx module are supervised at default (alarm, early-warning and fault). They can be used for the connection to the control panel and the addressing of detectors with relay output, gas detectors, beam detectors, thermosensitive cables, etc. During the installation, 2 inputs can be configured as conventional zones, powered from the loop or from a local power supply, or as 4-20mA gas inputs. The 4 outputs, according to model, can be supervised for sounder control or voltage free contacts.

The EM3xx, as all ENEA series devices, is equipped with an isolator module and it occupies 4 loop addresses.

The EM312SR module connects to the same line as the detectors.

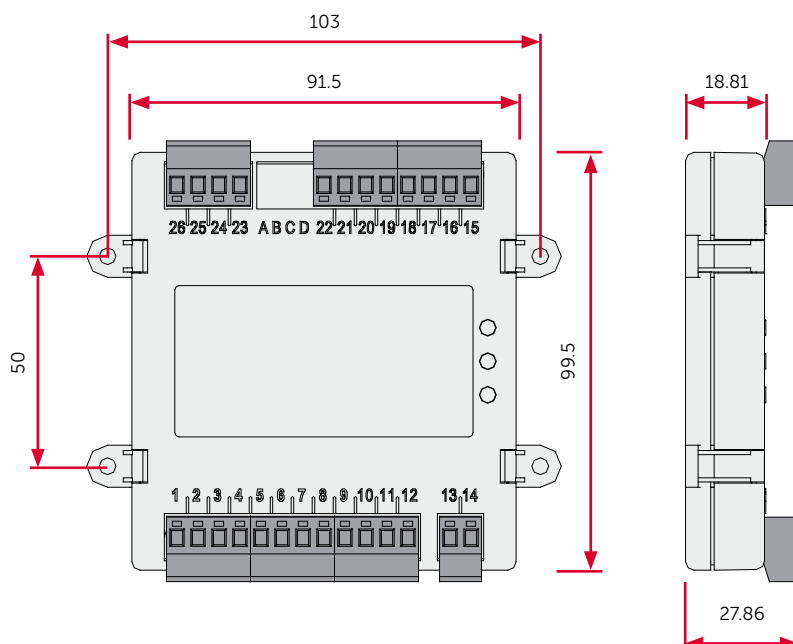


Model	Inputs		Outputs	
	number	selectable as conventional zone	number	type
EM344S	4	2	4	supervised
EM344R	4	2	4	dry contacts
EM340	4	2	/	/
EM304S	/	/	4	supervised
EM304R	/	/	4	dry contacts

TECHNICAL SPECIFICATIONS

- Certification: LPCB CPR EN54/pt18 -pt17
- Self-addressing (each device is identified by a factory-assigned serial number)
- LoopMap Technology
- Versa++ Technology
- 240 addresses
- 4 supervised inputs (according to the model)
- 2 inputs configurable as conventional line interface or as 4-20mA gas detector interface (according to the model)
- 4 supervised outputs (according to the model)
- 4 voltage free contact 1A@30Vdc outputs (according to the model)
- 1 supervised input for the activation of the devices connected to the output
- DIP switch for the assignment of the input functions
- Built-in short-circuit isolator
- Programmable warning threshold
- Power supply voltage: 19 - 30Vdc
- Current draw during stand-by max 80µA @ 24V
- Current draw during alarm max 20mA @ 27,6V
- Tri-colour LED for input/output/isolator status signalling
- Operating temperature: from -5°C to +40°C
- Dimensions (WxHxD) 113X106X29 mm

DIMENSIONS



IN THE PACKAGE

- Package dimensions: 110 x 97 x 57 mm
- Weight with packaging: 170g

ORDER CODES

- EM340** Analog addressable module with 4 supervised inputs, 2 of them configurable as conventional line interface or as 4-20mA gas detector interface
- EM304S** Analog addressable module with 4 supervised outputs
- EM344S** Analog addressable module with 4 supervised inputs, 2 of them configurable as conventional line interface or as 4-20mA gas detector interface, and with 4 supervised outputs
- EM304R** Analog addressable module with 4 voltage free outputs
- EM344R** Analog addressable module with 4 supervised inputs, 2 of them configurable as conventional line interface or as 4-20mA gas detector interface, and with 4 voltage free outputs
- EM110** Input module
- EM312SR** Input/output module
- EM411R** Conventional line input module
- EU311** Input/output micromodule
- EU311C** Micromodule for loop connection of conventional callpoints

35. FIȘA TEHNICĂ: E-CMCA – CONTAINER METALIC CAMERĂ AUTOMATIZARE

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici: SE VA LIVRA UN SISTEM DE 2 CONTAINERE ALIPITE, FĂRĂ PEREȚI INTERIORI PE LATURA COMUNĂ, CONECTATE MECANIC ȘI CU PROTECȚIE ASIGURATĂ LA INTEMPERII ȘI PĂTRUNDEREA APEI. 1. Condiții de amplasare: - Temperatură exterioară: - 29° C ... +55° C; - mediu lipsit de praf, fum, gaze inflamabile sau corozive, vapori sau săruri; - gradul de agresivitate al atmosferei: normal; - condiții seismicitate: ag=0,15- 0,3; Tc=0,7-1,6 sec.; 2. Execuție container: • Dimensiuni exterioare Lxlxh 6000x4800x3000 [mm]; • Culoare exterioară RAL 5010; • Temperatură interioară în container va fi menținută prin sistemul de climatizare industrial +18° C ... +25° C; • Echipamentele montate în interior vor avea temperatura de lucru între + 5° C ... +55° C; • Echipamentele montate pe exteriorul containerului vor avea temperatura de lucru între -25° C ... +55° C; • Accesul cablurilor electrice în interiorul containerului se va face prin sisteme etanșe. Se pot folosi și alte sisteme etanșe pentru introducerea cablurilor cum ar fi presetupe pentru cabluri: Ø7...11mm, Ø13...17mm, Ø17...22mm, în funcție de cablurile alese și numărul acestora din jurnalul de cabluri; 2.1. Planșeul și pereții sunt formate din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501; - grosimea tablei exterioare de 0,60mm, zincată la cald pe fața exterioară (minim 137 g/mp de zinc) și 50-60μm semi-acoperire lucioasă din poliuretan; - grosimea tablei interioare de 0,50mm, zincată la cald pe fața interioară; - nucleu de izolare-fibră minerală cu o densitate ridicată (>=100kg/mc) adecvată pentru aplicații care necesită o rezistență mare la foc; 2.2. Pereții exteriori sunt formați din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu); - 1 ușă acces metalică termoizolantă dotată cu sistem de securizare cu cheie cu dimensiuni Lxh 900x2000 mm cu deschidere la 180°. Ușa va fi dotată cu bară antipanică. Ușa va avea deschidere spre exterior pe partea dreaptă. 2.3. Podeaua este formată în ordinea straturilor din: - grinzi pentru podea cu profile U de minim 3mm;	CORESPUNDE	ENERGOBIT SA EUROMODUL



- panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu); - podea casetată/tehnologică cu dimensiuni (Lxlxh) 600x600x200 mm din material compozit cu grosime de minim 30 mm; - portanță minimă 150 kg/m²; - impermeabilă; - antialunecare - etanșare cu garnitură elastică; 2.4. Birou Lxlxh: 900x600x750 mm - birou pentru uz industrial; - pal grosime 18 mm; - cant abs 2 mm pentru părțile cu uzură mare (blat, fețe sertar); - cant abs 0,4 mm pentru părțile interioare; - accesorii și feronerie pentru uz industrial; - corp cu 2 sertare h=300 mm și l=500 mm, sertare cu glisieră și revenire lentă la închidere; 2.5. Scaun rotativ - material spătar - mesh; - material șezut - mesh cu șezut din lemn stratificat, buretat și tapițat; - înălțime șezut maximă 56 cm reglabilă pe înălțime; - înălțime scaun maximă 107 cm; - lățime șezut 50 cm; - spătar ergonomic; - mânere plastic polipropilenă; - material roți polipropilenă. 2.6. Dotări instalație electrică: - minim 12 prize duble cu alimentare cu protecție cu pământare IP54, - întrerupător iluminat dublu – 1buc; - corp iluminat montaj aparent cu 4 tuburi cu LED dulie G13, 60cm putere min.8W / tub – minim 6 buc.; - corp de iluminat de siguranță tip EXIT, 230V, prevăzuți cu acumulatori Ni-Cd etanși 3,6V/600mAh, autonomie de funcționare în regim de siguranță; - tablou electric TEC echipat, conform CS și planurilor din proiect: • Întreruptor automat general trifazat prevăzut cu contact auxiliar ON/OFF; • Distribuitor cu 4 poli 3P+N; • Releu monitorizare rețea electrică trifazată prevăzut cu contact auxiliar ON/OFF; • Întreruptor automat cu protecție diferențială 2P (contact auxiliar ON/OFF doar pe circuitul de climatizare - 1 buc); • Întreruptor automat cu protecție diferențială 3P+N (priza trifazată); • Întreruptor automat cu protecție diferențială 3P+N (rezervă); • Întreruptor automat cu protecție diferențială 1P+N (EXIT, Priza 1, Prize 2, Rezerve – 2buc) - monitorizarea întreruptoarele automate care sunt prevăzute cu contacte de monitorizare a poziției și a declanșării protecției se va face prin PLC în cadrul programului software implementat.	
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Montarea echipamentelor poate fi executată fie pe un perete lateral fie pe planșeu. Se va ține cont de configurația echipamentelor și a tablourilor electrice din interiorul containerului; - corpuri de iluminat cu lămpi de tip LED ce asigură în interior 300lux la o înălțime de 1m față de nivelul podelei; 2.6.1 Instalație de climatizare - instalație climatizare monofazată de tip industrial utilizată pentru menținerea temperaturii în interior în intervalul setabil +18° C ... +25° C, indiferent de temperatura exterioară, la o umiditate de maxim 40% - Instalația de climatizare va avea o construcție compactă, toate componentele fiind dispuse într-o singură carcasă ce se va monta, încastrat, în peretele container-ului. Se vor livra două instalații de climatizare. Poziționarea și montajul acestora va fi executat conform planului de montare echipamente în container anexat Caietului de Sarcini. - Tensiune de alimentare: 230V, 50Hz - Putere consumată: 1120W/4,8A - Curent absorbit la pornire: 34A - Capacitate de răcire pentru o unitate: minim 2100W - Temperatura internă de operare: +25 / +45 °C - Temperatură externă de operare: -20 / +55 °C - Gradul de protecție: IP54 - Zgomot la exterior: 67dB - Greutate: maxim 49kg - Dimensiuni (ÎxlxA) mm: 1010x415x265 ±5mm 2.7. Echipament antirozătoare - Suprafață de acțiune minim 400 mp; - Minim 2 difuzoare; - Putere sonoră 2x130dB; - Setare frecvență ultrasunete 20-60 kHz și posibilitate modificare frecvență automată; - Indicare funcționare prin LED; - Fără efect asupra oamenilor; - Buton de testare funcționare; - Greutate maxim 300 g; - Alimentare 230 V; - Declarație de conformitate CE; - Garanție minim 2 ani. 3. Marcare container - Containerul se va marca pe exterior, sub plăcuța de identificare a executantului, cu înscrisul "VESTMOLDTRANSGAZ", sub care se va marca numărul de telefon de serviciu de intervenție (.....). Marcarea se va face prin suflare cu vopsea galbenă cod RAL 1021, mărimea fontului trebuie să permită citirea înscrisurilor de la o distanță de cel puțin 5m. - Plăcuța de identificare a executantului de pe container trebuie să fie scrisă în limba română în mod clar și concis și va conține următoarele date: • firma producătoare; • anul de fabricație; • container stație de robinete - Plăcuțele descriptive vor fi vopsite în culoarea RAL 1021 și trebuie să fie din materiale care să nu provoace ștergerea literelor. Plăcuțele trebuie executate din materiale metalice		
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	necorozive și se vor fixa pe ușa de acces cu șuruburi din oțel zincate sau nituri. - Dimensiunea plăcuțelor descriptive va fi de 300x220 mm cu mărimea fontului de 1,5 cm, culoare neagră și cu litere de tipar. 4. Alte dotări: - Instalație de stingere automată a incendiului - Priză și fișă trifazată pentru conexiune electrică între 2 containere, montate la partea superioară a acestuia pe colturile opuse a laturii unde există ușa de acces – 1 set - Sisteme de prindere pentru manipulare cu macara; - Mod de protecție a suprafețelor metalice: toate suprafețele și subansamblele sunt sablate mecanic cu pulbere de cuarț, grunduite și vopsite cu vopsea specială multi component cu rezistență la intemperii; - Izolație: pereții compartimentelor și ușile containerului vor fi izolate cu vată minerală rezistentă la foc 30'-60'-120' și căptușită cu tablă de inox sau tablă zincată.		
2.	Specificații de performanță și condiții privind siguranța în exploatare - Conform caiete de sarcini	CORESPUNDE	
3.	Condiții privind conformitatea cu standarde relevante - Construcție conform normelor și standardelor în vigoare - ISO 9001:2015;	CORESPUNDE	
4.	Condiții de garanție și postgaranție - Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. - Produsul va corespunde normelor tehnice și standardelor europene.	CORESPUNDE	
5.	Condiții cu caracter tehnic: - Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. - Vor fi anexate: • instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); • instrucțiuni de exploatare; • buletine de încercări, verificări, probe; • declarație de conformitate.	CORESPUNDE	

36. FIȘA TEHNICĂ; E-CMCO – CONTAINER METALIC CAMERĂ OPERARE

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Corespondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici: 1. Condiții de amplasare: - Temperatură exterioară: - 29° C ... +55° C; - mediu lipsit de praf, fum, gaze inflamabile sau corozive, vapori sau săruri; - gradul de agresivitate al atmosferei: normal; - condiții seismicitate: $ag=0,15-0,3$; $T_c=0,7-1,6$ sec.; 2. Execuție container: • Dimensiuni exterioare Lxlxh 6000x2400x3000 [mm]; • Culoare exterioară RAL 5010; • Temperatură interioară în container va fi menținută prin sistemul de climatizare industrial +18° C ... +25° C; • Echipamentele montate în interior vor avea temperatura de lucru între + 5° C ... +55° C; • Echipamentele montate pe exteriorul containerului vor avea temperatura de lucru între -25° C ... +55° C; • Accesul cablurilor electrice în interiorul containerului se va face prin sisteme etanșe. Se pot folosi și alte sisteme etanșe pentru introducerea cablurilor cum ar fi presetupe pentru cabluri: $\Phi 7...11$mm, $\Phi 13...17$mm, $\Phi 17...22$mm, în funcție de cablurile alese și numărul acestora din jurnalul de cabluri; 2.1. Planșeul și pereții sunt formate din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501; - grosimea tablei exterioare de 0,60mm, zincată la cald pe fața exterioară (minim 137 g/mp de zinc) și 50-60μm semi-acoperire lucioasă din poliuretan; - grosimea tablei interioare de 0,50mm, zincată la cald pe fața interioară; - nucleu de izolare-fibră minerală cu o densitate ridicată (≥ 100kg/mc) adecvată pentru aplicații care necesită o rezistență mare la foc; 2.2. Pereții exteriori sunt formați din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu); - 1 ușă acces metalică termoizolantă dotată cu sistem de securizare cu cheie cu dimensiuni Lxh 900x2000 mm cu deschidere la 180°. Ușa va fi dotată cu bară antipanică. Ușa va avea deschidere spre exterior pe partea dreaptă. 2.3. Podeaua este formată în ordinea straturilor din: - grinzi pentru podea cu profile U de minim 3mm; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu);	CORESPUNDE	ENERGOBIT SA EUR OMODUL



- podea casetată/tehnologică cu dimensiuni (Lxlxh) 600x600x200 mm din material compozit cu grosime de minim 30 mm; - portanță minimă 150 kg/m²; - impermeabilă; - antialunecare - etanșare cu garnitură elastică; 2.6. Dotări instalație electrică: - minim 6 prize duble cu alimentare cu protecție cu pământare IP54, - întrerupător iluminat; - corp iluminat montaj aparent cu 4 tuburi cu LED dulie G13, 60cm putere min.8W / tub – minim 6 buc.; - corp de iluminat de siguranță tip EXIT, 230V, prevăzuți cu acumulatori Ni-Cd etanși 3,6V/600mAh, autonomie de funcționare în regim de siguranță; - tablou electric TEC echipat, conform CS și planurilor din proiect: • Întreruptor automat general trifazat prevăzut cu contact auxiliar ON/OFF; • Distribuitor cu 4 poli 3P+N; • Releu monitorizare rețea electrică trifazată prevăzut cu contact auxiliar ON/OFF; • Întreruptor automat cu protecție diferențială 2P (contact auxiliar ON/OFF doar pe circuitul de climatizare - 1 buc); • Întreruptor automat cu protecție diferențială 3P+N (priza trifazată); • Întreruptor automat cu protecție diferențială 3P+N (rezervă); • Întreruptor automat cu protecție diferențială 1P+N (EXIT, Priza 1, Prize 2, Rezerve – 2buc) - monitorizarea întreruptoarele automate care sunt prevăzute cu contacte de monitorizare a poziției și a declanșării protecției se va face prin PLC în cadrul programului software implementat. - instalație climatizare monofazată de tip industrial de menținere a temperaturii în interior în intervalul setabil +18° C ... +25° C, indiferent de temperatura exterioară, la o umiditate de maxim 40% . Montarea echipamentelor poate fi executată fie pe un perete lateral fie pe planșeu. Se va ține cont de configurația echipamentelor și a tablourilor electrice din interiorul containerului; - corpuri de iluminat cu lămpi de tip LED ce asigură în interior 300lux la o înălțime de 1m față de nivelul podelei; 2.7. Echipament antirozătoare - Suprafață de acțiune minim 400 mp; - Minim 2 difuzoare; - Putere sonoră 2x130dB; - Setare frecvență ultrasunete 20-60 kHz și posibilitate modificare frecvență automată; - Indicare funcționare prin LED; - Fără efect asupra oamenilor; - Buton de testare funcționare; - Greutate maxim 300 g; - Alimentare 230 V; - Declarație de conformitate CE; - Garanție minim 2 ani. 3. Marcare container	
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	- Containerul se va marca pe exterior, sub plăcuța de identificare a executantului, cu înscrisul "VESTMOLDTRANSGAZ", sub care se va marca numărul de telefon de serviciu de intervenție (.....). Marcarea se va face prin suflare cu vopsea galbenă cod RAL 1021, mărimea fontului trebuie să permită citirea înscrisurilor de la o distanță de cel puțin 5m. - Plăcuța de identificare a executantului de pe container trebuie să fie scrisă în limba română în mod clar și concis și va conține următoarele date: • firma producătoare; • anul de fabricație; • container stație de robinete - Plăcuțele descriptive vor fi vopsite în culoarea RAL 1021 și trebuie să fie din materiale care să nu provoace ștergerea literelor. Plăcuțele trebuie executate din materiale metalice necorozive și se vor fixa pe ușa de acces cu șuruburi din oțel zincate sau nituri. - Dimensiunea plăcuțelor descriptive va fi de 300x220 mm cu mărimea fontului de 1,5 cm, culoare neagră și cu litere de tipar. 4. Alte dotări: - Priză și fișă trifazată pentru conexiune electrică între 2 containere, montate la partea superioară a acestuia pe colturile opuse a laturii unde există ușa de acces – 1 set - Sisteme de prindere pentru manipulare cu macara; - Mod de protecție a suprafețelor metalice: toate suprafețele și subsansamblele sunt sablate mecanic cu pulbere de cuarț, grunduite și vopsite cu vopsea specială multi component cu rezistență la intemperii; - Izolație: pereții compartimentelor și ușile containerului vor fi izolate cu vată minerală rezistentă la foc 30'-60'-120' și căptușită cu tablă de inox sau tablă zincată.		
2.	Specificații de performanță și condiții privind siguranța în exploatare - Conform caiete de sarcini	CORESPUNDE	
3.	Condiții privind conformitatea cu standarde relevante - Construcție conform normelor și standardelor în vigoare - ISO 9001:2015;	CORESPUNDE	
4.	Condiții de garanție și postgaranție - Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. - Produsul va corespunde normelor tehnice și standardelor europene.	CORESPUNDE	
5.	Condiții cu caracter tehnic: - Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. - Vor fi anexate: • instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); • instrucțiuni de exploatare; • buletine de încercări, verificări, probe; • declarație de conformitate.	CORESPUNDE	



37. FIȘA TEHNICĂ: E-CMCV – CONTAINER METALIC CAMERĂ VESTIAR

Nr. crt.	Specificațiile tehnice impuse prin Caietul de sarcini	Correspondența propunerii tehnice cu specificațiile tehnice impuse prin Caietul de sarcini	Producător
0	1	2	3
1.	Parametrii tehnici: SE VA LIVRA UN SISTEM DE 2 CONTAINERE ALIPITE, FĂRĂ PEREȚI INTERIORI PE LATURA COMUNĂ, CONECTATE MECANIC ȘI CU PROTECȚIE ASIGURATĂ LA INTEMPERII ȘI PĂTRUNDEREA APEI. SISTEMUL DE CONTAINERE SE VA COMPARTIMENTA ȘI DOTA CORESPUNZĂTOR PENTRU SPAȚIU TOALETE, DUȘ, ȘI DULAPURI VESTIARE 1. Condiții de amplasare: - Temperatură exterioară: - 29° C ... +55° C; - mediu lipsit de praf, fum, gaze inflamabile sau corozive, vapori sau săruri; - gradul de agresivitate al atmosferei: normal; - condiții seismicitate: ag=0,15- 0,3; Tc=0,7-1,6 sec.; 2. Execuție container: • Dimensiuni exterioare Lxlxh 6000x4800x3000 [mm]; • Culoare exterioară RAL 5010; • Temperatură interioară în container va fi menținută prin sistemul de climatizare industrial +18° C ... +25° C; • Echipamentele montate în interior vor avea temperatura de lucru între + 5° C ... +55° C; • Echipamentele montate pe exteriorul containerului vor avea temperatura de lucru între -25° C ... +55° C; • Accesul cablurilor electrice în interiorul containerului se va face prin sisteme etanșe. Se pot folosi și alte sisteme etanșe pentru introducerea cablurilor cum ar fi presetupe pentru cabluri: Ø7...11mm, Ø13...17mm, Ø17...22mm, în funcție de cablurile alese și numărul acestora din jurnalul de cabluri; 2.1. Planșeul și pereții sunt formate din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501; - grosimea tablei exterioare de 0,60mm, zincată la cald pe fața exterioară (minim 137 g/mp de zinc) și 50-60μm semi-acoperire lucioasă din poliuretan; - grosimea tablei interioare de 0,50mm, zincată la cald pe fața interioară; - nucleu de izolare-fibră minerală cu o densitate ridicată (>=100kg/mc) adecvată pentru aplicații care necesită o rezistență mare la foc; 2.2. Pereții exteriori sunt formați din: - structura metalică profilată la rece; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu); - 1 ușă acces metalică termoizolantă dotată cu sistem de securizare cu cheie cu dimensiuni Lxh 900x2000 mm cu	CORESPUNDE	ENERGOBIT SA EUROMODUL



deschidere la 180°. Ușa va fi dotată cu bară antipanică. Ușa va avea deschidere spre exterior pe partea dreaptă. 2.3. Podeaua este formată în ordinea straturilor din: - grinzi pentru podea cu profile U de minim 3mm; - panouri sandwich de 10 cm grosime cu vată minerală clasificate A2-S1, d₀ (clasă de combustibilitate) conform 13501 (aceleași caracteristici ca la planșeu); - portanță minimă 150 kg/m²; - impermeabilă; - antialunecare - etanșare cu garnitură elastică; 2.4. Dotări tip vestiar: Sistemul de containere se va compartimenta și echipa pentru amenajarea de: - Spațiu toaletă - Spațiu dușuri - Spațiu dulapuri 2.5. Dotări instalație electrică: - minim 6 prize duble cu alimentare cu protecție cu pământare IP54, - întrerupător iluminat; - corp iluminat montaj aparent cu 4 tuburi cu LED dulie G13, 60cm putere min.8W / tub – minim 6 buc.; - corp de iluminat de siguranță tip EXIT, 230V, prevăzuți cu acumulatori Ni-Cd etanși 3,6V/600mAh, autonomie de funcționare în regim de siguranță; - tablou electric TEC echipat, conform CS și planurilor din proiect: • Întreruptor automat general trifazat prevăzut cu contact auxiliar ON/OFF; • Distribuitor cu 4 poli 3P+N; • Releu monitorizare rețea electrică trifazată prevăzut cu contact auxiliar ON/OFF; • Întreruptor automat cu protecție diferențială 2P (contact auxiliar ON/OFF doar pe circuitul de climatizare - 1 buc); • Întreruptor automat cu protecție diferențială 3P+N (priza trifazată); • Întreruptor automat cu protecție diferențială 3P+N (rezervă); • Întreruptor automat cu protecție diferențială 1P+N (EXIT, Priza 1, Prize 2, Boiler, Rezerve – 2buc) - monitorizarea întreruptoarele automate care sunt prevăzute cu contacte de monitorizare a poziției și a declanșării protecției se va face prin PLC în cadrul programului software implementat. - instalație climatizare monofazată de tip industrial de menținere a temperaturii în interior în intervalul setabil +18° C ... +25° C, indiferent de temperatura exterioară, la o umiditate de maxim 40% . Montarea echipamentelor poate fi executată fie pe un perete lateral fie pe planșeu. Se va ține cont de configurația echipamentelor și a tablourilor electrice din interiorul containerului; - corpuri de iluminat cu lămpi de tip LED ce asigură în interior 300lux la o înălțime de 1m față de nivelul podelei; 2.6. Echipament antirozătoare - Suprafață de acțiune minim 400 mp; - Minim 2 difuzoare;		
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	- Putere sonoră 2x130dB; - Setare frecvență ultrasunete 20-60 kHz și posibilitate modificare frecvență automată; - Indicare funcționare prin LED; - Fără efect asupra oamenilor; - Buton de testare funcționare; - Greutate maxim 300 g; - Alimentare 230 V; - Declarație de conformitate CE; - Garanție minim 2 ani. 3. Marcare container - Containerul se va marca pe exterior, sub plăcuța de identificare a executantului, cu înscrisul "VESTMOLDTRANSGAZ", sub care se va marca numărul de telefon de serviciu de intervenție (.....). Marcarea se va face prin suflare cu vopsea galbenă cod RAL 1021, mărimea fontului trebuie să permită citirea înscrisurilor de la o distanță de cel puțin 5m. - Plăcuța de identificare a executantului de pe container trebuie să fie scrisă în limba română în mod clar și concis și va conține următoarele date: • firma producătoare; • anul de fabricație; • container stație de robinete - Plăcuțele descriptive vor fi vopsite în culoarea RAL 1021 și trebuie să fie din materiale care să nu provoace ștergerea literelor. Plăcuțele trebuie executate din materiale metalice necorozive și se vor fixa pe ușa de acces cu șuruburi din oțel zincate sau nituri. - Dimensiunea plăcuțelor descriptive va fi de 300x220 mm cu mărimea fontului de 1,5 cm, culoare neagră și cu litere de tipar. 4. Alte dotări: - Priză și fișă trifazată pentru conexiune electrică între 2 containere, montate la partea superioară a acestuia pe colturile opuse a laturii unde există ușa de acces – 1 set - Sisteme de prindere pentru manipulare cu macara; - Mod de protecție a suprafețelor metalice: toate suprafețele și subansamblele sunt sablate mecanic cu pulbere de cuarț, grunduite și vopsite cu vopsea specială multi component cu rezistență la intemperii; - Izolație: pereții compartimentelor și ușile containerului vor fi izolate cu vată minerală rezistentă la foc 30'-60'-120' și căptușită cu tablă de inox sau tablă zincată.		
.	Specificații de performanță și condiții privind siguranța în exploatare - Conform caiete de sarcini	CORESPUNDE	
3.	Condiții privind conformitatea cu standarde relevante - Construcție conform normelor și standardelor în vigoare - ISO 9001:2015;	CORESPUNDE	
4.	Condiții de garanție și postgaranție - Producătorul va garanta calitatea și buna funcționare a produsului timp de 24 luni de la punerea în funcțiune sau de 36 luni de la data livrării. - Produsul va corespunde normelor tehnice și standardelor europene.	CORESPUNDE	
5.	Condiții cu caracter tehnic:	CORESPUNDE	

	- Nu vor fi luate în considerație decât ofertele însoțite de documentație completă pentru selecție și montaj în limba română. - Vor fi anexate: • instrucțiuni de montaj (scheme de conectare, broșuri, cataloage); • instrucțiuni de exploatare; • buletine de încercări, verificări, probe; • declarație de conformitate.		
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**Container realizat in conformitate cu normativele EXC1, conform standardului
European SR EN 1090-1 + A1:2012**

DESCRIEREA TEHNICA

Container DIMENSIUNILE SE VOR STABILI SI DEFINITIVA DUPA ATRIBUIREA CONTRACTULUI
ACESTE MODULE VOR RESPECTA INTOCMAI CERINTELE DIN FISETE TEHNICE
ATASATE

VOPSEAUUA:

- Latura externa, grosime minimum 100 micron:
 - o un strat in grund epoxid anti-rugina (grosime 50-60 micron)
 - o doua straturi in smalt acrylic bicomponent culoare RAL5010 (grosime 50-60 micron)
- Latura interna:
 - o 1 strat in epoxid antirugina (grosime 50-60 micron)

STRUCTURA

- Structura acoperisului realizata din profile prelucrate pe presa cu grosimea de 3mm S235J2+AR decapata
- Stalpii verticali realizati in profile prelucrate pe presa cu grosimea 3mm S235J0+AR decapata
- Bazamentul:
Structura perimetrala in profile UNP 180
Traverse in profile tip IPE 100
Nr. 4 blocuri de ridicare sudate pe structura de sustinere.
Nr. 6 picioare reglabile fixate sub structura de baza, cu baza in poliamida intarita si orificiu pentru fixarea pe platforma. Diametrul tijei M20.

PERETII

- Latura externa realizata din tabla zincata, calitate S280GD+Z grosime 12/10, grecata
- Panourile sandwich in vata minerala cu grosime de 80mm sunt constituite din 2 suporti tabla zincata prevopsita la foc, microdogata, si miez izolat in vata minerala cu densitate ridicata 100kg/mc.
- Clasa de reactie la foc: A2-s1,d0 iar Rezistenta la foc EI 60'.
- Panoul este montat la o distanta de 1cm de la tabla grecata.

ACOPERISUL

- Latura externa realizata din tabla zincata sudata in continuu, calitate S280GD+Z grosime 12/10 (1,2 mm) grecata + grile de ventilatie
- Umplerea spatiului intre grecatura peretelui extern cu vata minerala de sticla.
- Panourile sandwich in vata minerala bazaltica cu grosime de 100mm sunt constituite din 2 suporti, tabla zincata prevopsita la foc cu grosimea de 0,5mm, microdogata, si miez izolat in vata minerala cu densitate ridicata 100kg/mc.
- Clasa de reactie la foc: A2-s1,d0 iar Rezistenta la foc EI 120'.

PARDOSEALA

- latura externa realizata din tabla zincata, S280GD+Z grosime 12/10 - (1,2mm), lisa
- Izolatie pardoseala: grosime totala 100mm dispusa dupa cum urmeaza:
izolatie in continuu cu panouri de vata minerala grosime 50mm cu suportii externi in tabla zincata microdogata si miez izolat in vata minerala cu densitate ridicata 100kg/mc.

izolatie intre traverse cu panouri sandwich in vata minerala grosime 50mm, cu suport externi in tabla zincata microdogata si miez izolat in vata minerala cu densitate ridicata 100kg/mc.

Clasa de reactie la foc: A2-s1,d0 iar Rezistenta la foc EI 30'.

- Podea tehnologica in panouri cu dim. 60x60x3cm. Suprafata externa superioara in laminat plastic, model walkprint 576. Mijlocul din material inert cu densitate $\geq 1500 \text{ kg / m}^3$, realizat cu un amestec de sulfat de calciu și fibre organice. Muchia in material plastic. Traverse in otel zincat. Picioare de sprijin, reglabile, in otel galvanizat.

- Incarcarea distribuita a pardoselei este de 1500kg/mp.

- Rame complete de trecere a cablurilor Roxtec, formate fiecare din:

Nr. 1 x buc. rama cu dim. 410 x 253mm cu rame de tip GH 8x1 (montare prin aplicare la structura de metal la nivelul pardoselei) impreuna cu rama GE 8x1 (montata pe partea opusa ramei principale GH). Modulele de etansare sunt protective atat la apa cat si la foc.

DOTARI:

- 1 x usa plina, metalica, EI60'cu dim. utila 90 x 200cm cu bara antipanica si sistem de inchidere cu cheie.

- 2 x placuta de identificare din aluminiu cu dim. 300 x 220mm, in culoare RAL1021 cu marimea fontului 1,5 cm, gravate cu laser in material si fixate cu nituri.

- 1 x scara metalica cu nr. 2 trepte fara balustrada. Structura metalica in profile tubulare zincate si vopsite, suprafata externa din aluminiu striat.



