Honeywell

Product Catalog 2011

VAPA System VARIODYN D1

Foreword

Dear business partners,

Once again we are sending you a personal issue of our new product group catalogue for voice alarm systems.

This new comprehensive portfolio has been compiled in our usual structured form. The portfolio has undergone many changes compared to our first edition with regards to current standards. This catalog contains detailed information on analog and digital power amplifiers, digital control modules (DOMs), interfaces, various communication units and emergency power supplies in compliance with EN54-4 (A2), which can be used to help you compose a system tailored to your individual needs. System descriptions and diagrams show models for larger objects as well as smaller ones.

Please take the time to see that it is worth considering both fire detection and voice alarm technologies in combination.

This combination is becoming more and more important, and not only because of the new regulations!

Vnukovo Airport, Moskau • Shanghai Maglev Train, China • St. Martins Spa & Lodge, Österreich

Our top priorities are both customer- and market-oriented, focusing on competence and innovation. These priorities form the basis of our product development while still keeping the wishes and needs of our partners – you! – in direct focus.

Take this opportunity to communicate us your thoughts so that we can together continue creating the future in this increasingly more complicated market environment.

We look forward to our continued mutual success!

Your Novar GmbH Team

Symbolds used

= List of contents which the part number includes

= Information, important notice
such as special versions, dependencies etc.

= Packing unit

= Available as from...

Notice regarding the packing unit:

1. The item will only be sold in packing unit.
2. The number of items, which have to be ordered, always refers to the number of packing unit rather than the number of single items.
3. The price stated in the catalogue is always the respective price for the packing unit. It is not the price for the single item.

Example item number 701040 (spare glass pane):
Packing unit: 10 items. An order of 3 items, for instance, would be equivalent to an order of 3 packing units.
This would correspond to 30 items of spare glass pane, which have been ordered.

IP type of protection

The type of protection indicates the suitability of electric operating materials (for example devices, lights and installation material) against solid foreign objects and for various ambient conditions.

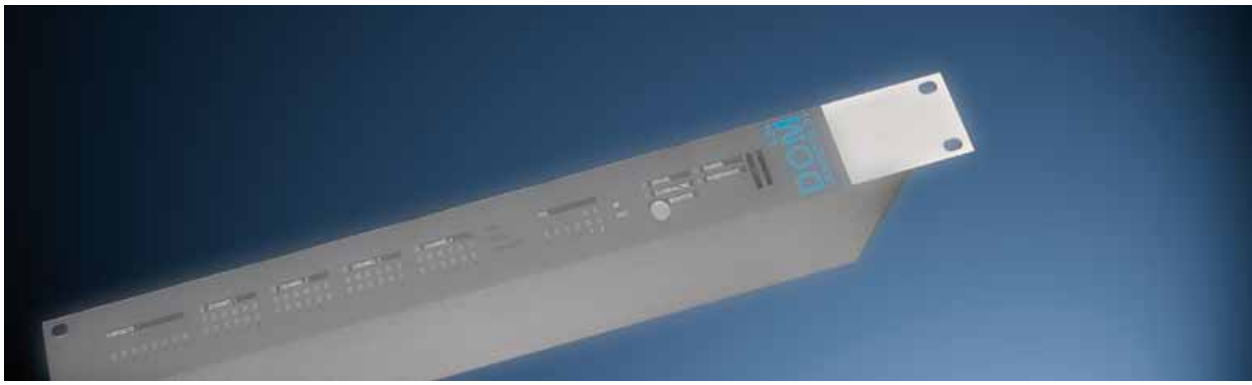
Levels of protection for protection from touch and foreign bodies (1st digit)

Digit	Protection from touch	Protection from foreign bodies
0	No protection	No protection
1	Protection from large-sized body parts (diameter 50 mm)	Large foreign bodies (diameter from 50 mm)
2	Finger protection (diameter 12 mm)	Medium-size foreign bodies (diameter from 12.5 mm))
3	Tools and wires (diameter from 2.5)	Small foreign matter (diameter from 2.5 mm)
4	Tools and wires (diameter from 1 mm)	Grain-shaped foreign matter (diameter from 1 mm)
5 (K)	Wire protection (as IP 4) dust-protected	Dust accumulation
6 (K)	Wire protection (as IP 4) dust-proof	No ingress of dust

Levels of protection for the protection from water (2nd digit)

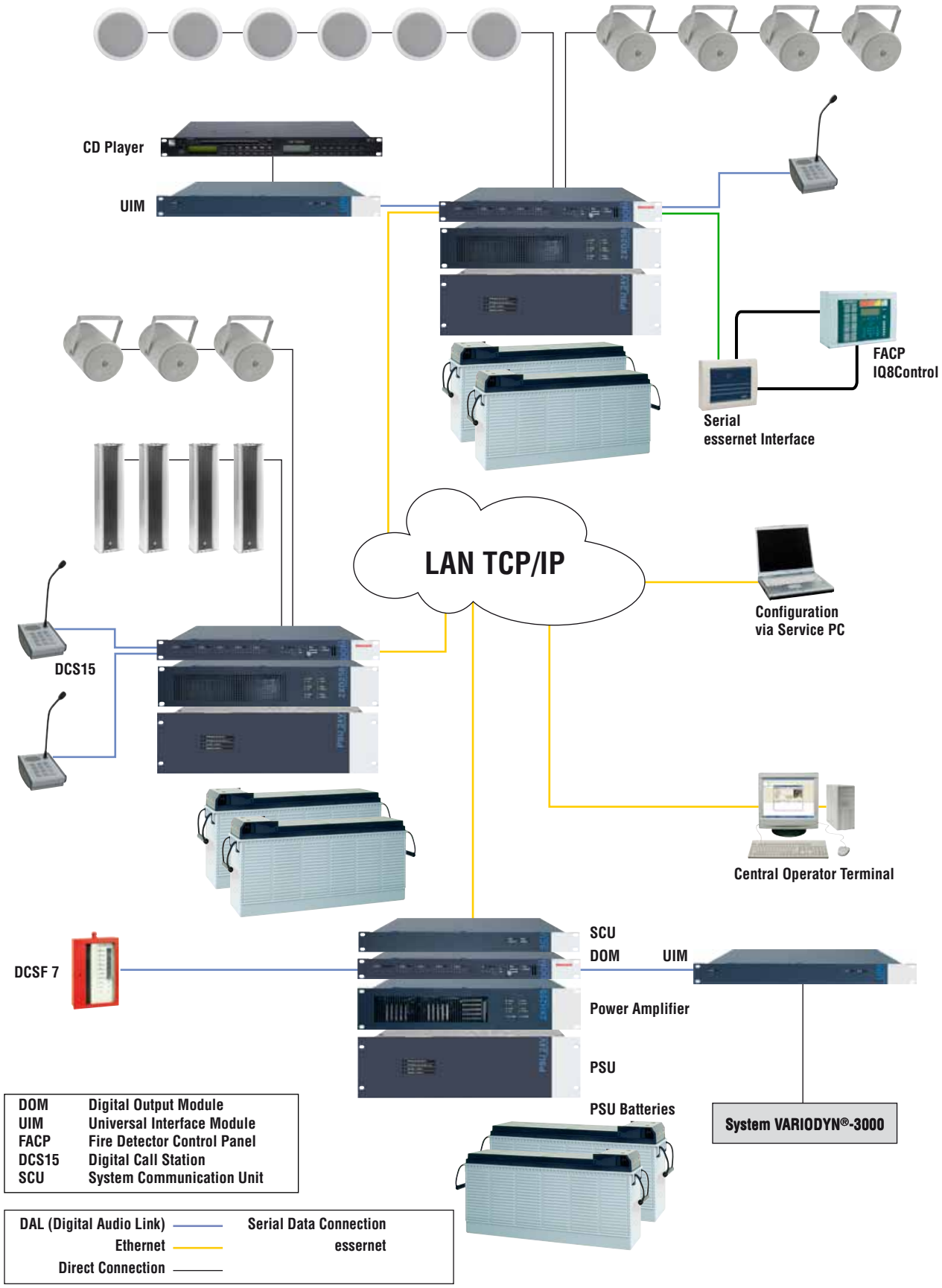
Digit	Protection from water
0	No protection
1	Protection from vertically dripping water
2	Protection from diagonally (15°) falling drip water
3	Protection from falling spray water up to 60°, against the vertical
4	Protected against splashing water
5	Protection from hose water (nozzle) from any angle
6	Protection from strong hose water (flooding)
7	Protection from temporary submersion
8	Protection from permanent submersion

Example:
IP64: Wire protection (as IP 4) completely dust-proof - protected against splashing water - nearly leak-proof.



Content

VARIODYN D1


CD Player
UIM
FACP
IQ8Control
Serial
essernet Interface
LAN TCP/IP
Configuration
via Service PC
DCS15
Central Operator Terminal
DCSF 7
SCU
DOM
UIM
Power Amplifier
PSU
PSU Batteries
System VARIODYN®-3000
DOM Digital Output Module
UIM Universal Interface Module
FACP Fire Detector Control Panel
DCS15 Digital Call Station
SCU System Communication Unit
DAL (Digital Audio Link)
Ethernet
Direct Connection
Serial Data Connection
essernet

Public address systems are used in all crowded public places such as subway stations, train stations, airports, shopping centers, stadiums and schools. In everyday operation, the system is used to provide information to the public, for advertising, and also for musical entertainment or for internal purposes such as communication with staff in extensive building complexes (paging and intercom service).

A system of this type is particularly significant during emergencies, when it is important to alert people audibly in a targeted manner. People can then be evacuated in an orderly fashion.

With VARIODYN D1, public address systems are for the first time connected to Local Area Networks (LAN) and Wide Area Networks (WAN). The systems are installed cost-effectively using standard Ethernet modules and prefabricated cabling. The modern, user-friendly configuration tools in VARIODYN D1 reduce training costs and familiarization times.

Additional requirements for voice alarm systems in accordance with EN54-16

Thanks to EN54-16 approval of our voice alarm system VARIODYN D1, which is required from 04.01.2011 in Europe onwards, the system now includes a number of new components. These components are described below and are listed in this catalog. The description also points out some special features, which are important for an EN54-16 system. First of all, before setting up the voice alarm system, we recommend that you talk to the expert responsible for approving the system, in order to clarify and get written agreement on the general and system-specific requirements for the voice alarm system.

Our VARIODYN D1 voice alarm system has relatively few expansions because the system has complied with the highest technical standards for a considerable period of time.

The first additional component, which must be part of an EN54-16-compliant system as of 01.04.2011 in Europe is the VCM module. The VCM module offers collective displays and operating functions, which were implemented via a digital call station prior to EN54-16 approval. There must be at least one VCM module per system, which is installed directly in the upright cabinet. For more information, please refer to the pages describing the VCM module.

Another new component is the overvoltage protection module for the contact inputs and outputs of the UIM. This module provides additional EMC protection if the connected external contacts are more than 3 m away from the system. For more information, please refer to the pages describing the UIM and the overvoltage protection module for the UIM.

EN54-16 approval requires that the transmission paths of emergency digital call stations for systems with more than one alarm area must be designed redundantly when the digital call station is separated and not contained directly in the upright cabinet. For this reason, our range now includes the dummy plate 583709, which can be used for installing a digital call station DCSF12 or DCSF1 directly in the upright cabinet. If the emergency digital call stations need to be used at a remote site, these can be duplicated and thereby set up fully redundantly.

All the relevant VARIODYN D1 components are contained in the EN54-16 and VdS approval, including accessories, network components and upright cabinets.

583361.22.HO **Digital Output Module DOM4-8**

Approval: VdS, EN54-16

The DOM is the central control element of the VARIODYN D1. It has interfaces to all input/output modules, manages and controls loudspeaker circuits.

Any complex system configuration can be realized by networking several DOMs via Ethernet.

The DOM4-8 control unit is equipped with four independent amplifier channels in order to operate a total of 8 loudspeaker zones.

All power amplifiers are permanently monitored. Any faulty power amplifiers are dynamically replaced with auxiliary amplifiers. The switchover occurs automatically via the DOM.

Loudspeaker management is permanently monitored for short-circuits, ground faults, disruptions as well as impedance deviation. Faulty loudspeaker zones are non-reactively disconnected.

One DOM contains up to 260 seconds of memory for prestored announcements which can be used for alarm texts and signals (evacuation alarm, all-clear signal) and caution signals (tones). The volume of each source and each amplifier channel can be adjusted. Additional filters such as parametric equalizers, high and low-pass filters as well as delays are also available. All faults are identified, displayed and logged within seconds.

Features

- Complies with EN 54-16, IEC 60849
- All functions of an alarm and evacuation system in a 19" module (DOM)
- Networkable via Ethernet
- Permanent monitoring of all function-relevant system hardware
- Automatic and dynamic switchover to redundant auxiliary amplifiers
- Permanent automatic volume regulation (AVR)
- Remote monitoring and configuration via network
- 24 V DC emergency power supply

Technical Data

Audio output:	
Output type	symmetrically
Nominal level	0 dBu
max. Outputlevel	< 6 dBu
Transmission range	20 ... 20000 Hz
Harmonic distortion at nominal level	< 0.03 % @ 1 kHz
Signal/Noise ratio	> 70 dB / 75 dB (A)
Output impedance	> 5 kΩ, < 500 pF
Sensor input (AVC):	
Input type	symmetrically
Nominal level	-51 dBu
Nominal level for emergency telephone station	0 dBu
Transmission range	100 ... 8000 Hz
Harmonic distortion at nominal level	< 0.02 % @ 1 kHz
Signal/Noise ratio	> 60 dB / 65 dB (A)
Load impedance	typ. 200 Ω
Common technical data:	
Rated voltage	90 .. 264 V AC
Rated frequency	47 ... 440 Hz
Emergency power supply	24
Rated current	1.25 A @ 24 V DC
Power consumption	40 / 70 W (@230 V, w/o / with 4 x DAL)
Contact load relay	100 V DC / 1 A
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 % (non condensing)
Weight	approx. 5.7 kg
Dimensions	W: 483 mm H: 44 mm D: 345 mm (1 HE, 19")

Accessories

583451.21	Cable for rear panel of DOM4-8 cabinet
583486	Cat 5 patch cable, 1 m yellow (Ethernet)
583487	Cat 5 patch cable, 2 m yellow (Ethernet)
583488	Cat 5 patch cable, 3 m yellow (Ethernet)
583496	End of Line Module (EOL)
581316	P4 Microphone for AVR
583703	Mounting Kit 1

583362.22.HO **Digital Output-Module DOM4-24**

Approval: VdS, EN54-16

The DOM is the central control element of the VARIODYN D1. It has interfaces to all input/output modules, manages and controls loudspeaker circuits.

Any complex system configuration can be realized by networking several DOMs via Ethernet.

The DOM4-24 control unit is equipped with four independent amplifier channels in order to operate a total of 24 loudspeaker zones.

All power amplifiers are permanently monitored. Any faulty power amplifiers are dynamically replaced with auxiliary amplifiers. The switchover occurs automatically via the DOM.

Loudspeaker management is permanently monitored for short-circuits, ground faults, disruptions as well as impedance deviation. Faulty loudspeaker zones are non-reactively disconnected.

One DOM contains up to 260 seconds of memory for prestored announcements which can be used for alarm texts and signals (evacuation alarm, all-clear signal) and caution signals (tones). The volume of each source and each amplifier channel can be adjusted. Additional filters such as parametric equalizers, high and low-pass filters as well as delays are also available. All faults are identified, displayed and logged within seconds.

Features

- Complies with EN 54-16, IEC 60849
- All functions of an alarm and evacuation system in a 19" module (DOM)
- Networkable via Ethernet
- Permanent monitoring of all function-relevant system hardware
- Automatic and dynamic switchover to redundant auxiliary amplifiers
- Permanent automatic volume regulation (AVR)
- Remote monitoring and configuration via network
- 24 V DC emergency power supply

Technical Data

Audio output:	
Output type	symmetrically
Nominal level	0 dBu
max. Outputlevel	< 6 dBu
Transmission range	20 ... 20000 Hz
Harmonic distortion at nominal level	< 0.03 % @ 1 kHz
Signal/Noise ratio	> 70 dB / 75 dB (A)
Output impedance	> 5 kΩ, < 500 pF
Sensor input (AVC):	
Input type	symmetrically
Nominal level	-51 dBu
Nominal level for emergency telephone station	0 dBu
Transmission range	100 ... 8000 Hz
Harmonic distortion at nominal level	< 0.02 % @ 1 kHz
Signal/Noise ratio	> 60 dB / 65 dB (A)
Load impedance	typ. 200 Ω
Common technical data:	
Rated voltage	90 .. 264 V AC
Rated frequency	47 ... 440 Hz
Emergency power supply	24
Rated current	1.30 A @ 24 V DC
Power consumption	50 / 80 W (@230 V, w/o / with 4 x DAL)
Contact load relay	100 V DC / 1 A
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 % (non condensing)
Weight	approx. 6.8 kg
Dimensions	W: 483 mm H: 44 mm D: 345 mm (1 HE, 19")

Accessories

583451.21	Cable for rear panel of DOM4-8 cabinet
583486	Cat 5 patch cable, 1 m yellow (Ethernet)
583487	Cat 5 patch cable, 2 m yellow (Ethernet)
583488	Cat 5 patch cable, 3 m yellow (Ethernet)
583496	End of Line Module (EOL)
581316	P4 Microphone for AVR
583703	Mounting Kit 1

580231 **Power Amplifier 2XD250**

Approval: VdS, EN54-16

Features

- Complies with IEC BS EN 60268-3, 55013 and 55020 standards
- Class D double amplifier with high efficiency
- Self-monitoring and self-test via microcontrollers
- Protected against overload and short-circuits
- Protected against overheating
- Cooling via regulated fan
- Monitoring via VARIODYN D1 DOM
- 24 V DC emergency power supply

- General Indicators
- Mains Voltage (green LED)
- CPU Status (green LED)
- Collective Fault (yellow LED)
- 24 V Emergency Power Supply (yellow LED)

- Indicators per Amplifier Channel
- Operation (green LED)
- Amplifier Channel Status (green LED)
- Amplifier Channel Fault (yellow LED)
- Clip indicator (yellow LED)

Usage
The power amplifiers have two independent amplifier channels and are compatible with the VARIODYN D1 system. The power amplifiers are controlled and monitored by VARIODYN D1 DOM 4-8 / DOM 4-24 control units.

LF / Control Input
The two low frequency inputs and the control input are connected by cable (Part No. 583491) to the VARIODYN D1 DOM module.

100 V Outputs
Symmetrical ungrounded 100 V outputs are available on the “OUTPUT 100V” terminal strip. The 100 V outputs of the two double amplifiers are connected via cable (Part No. 583477.21) to the VARIODYN D1 DOM module. Once a cooling element reaches a critical temperature, the load for this channel is disconnected by relays and is once again connected by relays upon reaching a secure temperature.

Power Connection, Battery Connection
An IEC connector for power connection as well as a power fuse can be found on the back of the amplifier. The power cable is supplied. The power amplifier may only be operated via a three-wire AC power cable with a non-fused ground conductor.
The 24 V emergency power supply is connected to a designated 2-pin terminal.

Technical Data

Rated voltage	230 V AC
Rated frequency	50 ... 60 Hz
Rated current	2.8 A
Power output	2 x 250 W (sin, @ 40 Ω)
Technology	Klasse D
Transmission range	50 ... 22000 Hz
Input level	0 dBu
Load impedance	> 20 kΩ (symmetrically)
Harmonic distortion at nominal level	< 0.3 % @ 1 kHz
Efficiency	> 80 % (at max. level)
Ambient temperature	-5 °C ... 55 °C
Storage temperature	-10 °C ... 55 °C
Air Humidity	< 93 % (non-condensing)
Weight	approx. 16.5 kg
Dimensions	W: 482 mm H: 89 mm D: 402 mm (2 HE, 19")

Accessories

583491	DOM-XV cable for amplifier audio inputs and remote connection
583476.21	XV DOM cable for amplifier audio outputs (for 1 amplifier)
583477.21	XV DOM cable for amplifier audio outputs (for 2 amplifiers)
583703	Mounting Kit 1

580232 **Power Amplifier 2XD400**

Features

- Complies with IEC BS EN 60268-3, 55013 and 55020 standards
- Class D double amplifier with high efficiency
- Self-monitoring and self-test via microcontrollers
- Protected against overload and short-circuits
- Protected against overheating
- Cooling via regulated fan
- Monitoring via VARIODYN D1 DOM
- 24 V DC emergency power supply

- General Indicators
- Mains Voltage (green LED)
- CPU Status (green LED)
- Collective Fault (yellow LED)
- 24 V Emergency Power Supply (yellow LED)

- Indicators per Amplifier Channel
- Operation (green LED)
- Amplifier Channel Status (green LED)
- Amplifier Channel Fault (yellow LED)
- Clip indicator (yellow LED)

Approval: VdS, EN54-16

Usage
The power amplifiers have two independent amplifier channels and are compatible with the VARIODYN D1 system. The power amplifiers are controlled and monitored by VARIODYN D1 DOM 4-8 / DOM 4-24 control units.

LF / Control Input
The two low frequency inputs and the control input are connected by cable (Part No. 583491) to the VARIODYN D1 DOM module.

100 V Outputs
Symmetrical ungrounded 100 V outputs are available on the “OUTPUT 100V” terminal strip. The 100 V outputs of the two double amplifiers are connected via cable (Part No. 583477.21) to the VARIODYN D1 DOM module. Once a cooling element reaches a critical temperature, the load for this channel is disconnected by relays and is once again connected by relays upon reaching a secure temperature.

Power Connection, Battery Connection
An IEC connector for power connection as well as a power fuse can be found on the back of the amplifier. The power cable is supplied. The power amplifier may only be operated via a three-wire AC power cable with a non-fused ground conductor.
The 24 V emergency power supply is connected to a designated 2-pin terminal.

Technical Data

Rated voltage	230 V AC
Rated frequency	50 ... 60 Hz
Rated current	4.5 A
Power output	2 x 400 W (sin, @ 25 Ω)
Technology	Klasse D
Transmission range	50 ... 22000 Hz
Input level	0 dBu
Load impedance	> 20 kΩ (symmetrically)
Harmonic distortion at nominal level	< 0.3 % @ 1 kHz
Efficiency	> 80 % (at max. level)
Ambient temperature	-5 °C ... 55 °C
Storage temperature	-10 °C ... 55 °C
Air Humidity	< 93 % (non-condensing)
Weight	approx. 19 kg
Dimensions	W: 482 mm H: 89 mm D: 402 mm (2 HE, 19")

Accessories

583491	DOM-XV cable for amplifier audio inputs and remote connection
583476.21	XV DOM cable for amplifier audio outputs (for 1 amplifier)
583477.21	XV DOM cable for amplifier audio outputs (for 2 amplifiers)
583703	Mounting Kit 1

580222.41 **Power Amplifier 2XH500**

Features

- Power amplifier, 2-channel, class H, 100 V outputs
- 24 V DC emergency power supply
- Control and monitoring via DOM
- Integrated electronic protection against thermal overloading and short-circuit at the output
- Temperature controlled fans

- Connections
- Combined LF /Control input
- Two-channel 100 V output
- Power supply connection
- 24 V DC emergency power input

- Indicators
- POWER
- SIGNAL
- CLIP
- ERROR
- AC POWERDC POWER

Usage
The power amplifiers have two independent amplifier channels and are compatible with the VARIODYN D1 system. The power amplifiers are controlled and monitored by VARIODYN D1 DOM 4-8 / DOM 4-24 control units.

LF /Control Input
The two low frequency inputs and the control input are connected by cable (Part No. 583491) to the VARIODYN D1 DOM module.

100 V Outputs
Symmetrical ungrounded 100 V outputs are available on the “OUTPUT 100V” terminal strip. The 100 V outputs of the two double amplifiers are connected via cable (Part No. 583477.21) to the VARIODYN D1 DOM module. Once a cooling element reaches a critical temperature, the load for this channel is disconnected by relays and is once again connected by relays upon reaching a secure temperature.

Power Connection, Battery Connection
An IEC connector for power connection as well as a power fuse can be found on the back of the amplifier. The power cable is supplied. The power amplifier may only be operated via a three-wire AC power cable with a non-fused ground conductor.
The 24 V emergency power supply is connected to a designated 2-pin terminal.

Technical Data

Rated voltage	230 V AC
Rated frequency	50 ... 60 Hz (+10% / -5%)
Rated current	9.9 A
Power consumption standby	ca. 0 VA (power disconnected)
Power output	2 x 500 W (sin)
Emergency power supply	24
Technology	Klasse H
Transmission range	20 ... 22000 Hz
Load impedance	> 10 kΩ (symmetrically)
Channel separation	> 75 dB
Harmonic distortion at nominal level	< 0.05 % @ 1 kHz
Ambient temperature	-5 °C ... 55 °C
Storage temperature	-10 °C ... 55 °C
Air humidity	40 ... 90 %
Color	grey, similar to RAL 7016
Weight	approx. 17 kg
Dimensions	W: 484 mm H: 88 mm D: 382 mm (2 HE, 19")

Delivery time on request.

Accessories

583491	DOM-XV cable for amplifier audio inputs and remote connection
583476.21	XV DOM cable for amplifier audio outputs (for 1 amplifier)
583477.21	XV DOM cable for amplifier audio outputs (for 2 amplifiers)
583703	Mounting Kit 1

VARIODYN D1 Digital Call Stations

583301.21 **Digital Call Station DCS15**

Approval: VdS, EN54-16

The Digital Call Station DCS15 is used selecting loudspeaker circuits as well as for the issuing of voice announcements and of various tones and/or alarms. It is equipped with 12 freely configurable keys, 13 LEDs and a swan neck microphone. The communication unit can be connected to a free DOM (Digital Output Module) DAL bus (Digital Audio Link) via a standard Cat 5 cable. All audio signals as well as all control signals are transferred digitally. Up to four digital call stations can be connected to one DOM. Every digital call station can simultaneously produce and receive different voice signal through-connections and control signals within the system. One digital call station can be relocated by up to 300 m via a Cat 5 cable (expansion up to 2,000 m possible using fiber optic cabling) and can be expanded with up to six DKM18 digital key modules; this increases the total number of available keys and LEDs to 120 per communication unit. The function of the microphone in the digital call station is permanently monitored acoustically. The DCS15 furthermore provides an external audio input and output which can be used to connect audio devices such as CD players or tape decks.

Features

- Cost-saving Cat 5 cabling
- Elektret swan-neck microphone with cardioid characteristic
- Permanent monitoring of microphone and the line to the connected interface module
- Broadband loudspeaker for microphone monitoring, monitoring of announcements and for intercom operation
- 24-bit AD/DA transformer
- Additional audio input/output (DCS15) e.g. for audio devices such as CD players
- Intercom function with other communication units possible via built-in loudspeaker
- 12 freely configurable keys

Technical Data

Audio output:	
Nominal level	0 dBu
max. Outputlevel	< 6 dBu
Transmission range	20 ... 22000 Hz
Harmonic distortion at nominal level	< 0.1 % @ 1 kHz
Signal/Noise ratio	> 85 dB
Output impedance	180 Ω
Audio input:	
Nominal level	0 dBu
Transmission range	20 ... 22000 Hz
Harmonic distortion at nominal level	< 0.1 %
Signal/Noise ratio	> 95 dB
Common technical data:	
Microphone	Elektret, cardoid characteristic
Swan-neck	300 mm
Transmission range	100 ... 15000 Hz
Loudspeaker	1 W
Sample rate	48 kHz
AD/DA converter	24 Bit
Current consumption	< 70 mA
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 % (non-condensing)
Color	black, similar to RAL 9005 (side frames) grey, similar to RAL 7037 (middle body)
Weight	approx. 1.6 kg
Dimensions	W: 123 mm H: 71 mm D: 180 mm

The digital call stations can be flush mounted onto the surface of a table. A table mounting kit is required for this.

A transparent keyboard cover is available in order to provide protection against unintentional keystrokes. This way, pressing keys is only possible with the cover open. Each cover can protect three horizontally arranged keys.

A 3 m long Cat 5 cable for connection of the digital call station to a wall jack is included with delivery.

Accessories

583306.21 Digital Key Module DKM18
583311 Keyboard Cover for VARIODYN D1 DCS Communication Unit
583316.21 Fiber Optic Converter Switchboard
583317.21 Fiber Optic Converter Communication Unit
583315.02 Power Supply for Fiber Optic Converter
583307 Wall Jack AB
583300.HO Adhesive Label for DCS "Honeywell"
583318 Replacement Keycaps (packages of 12 pieces)

583302.21 Digital call station DCS2

Approval: VdS, EN54-16

Same as 583301.21 but with one freely configurable key, two LEDs, one microphone and a loudspeaker.

Features

- EN 54-16 certified

583306.21 Digital Key Module DKM18

Approval: VdS, EN54-16

Digital Key Module DKM18 with 18 freely configurable keys and 18 LEDs.
Up to 6 of these DKM18 key modules can be connected to one DCS15 and/or DCS2. Thus communication units with up to 120 keys and 120 LEDs are possible.

Technical Data

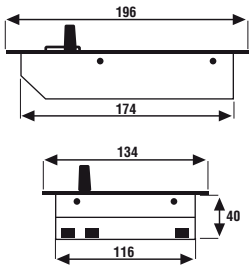
Dimensions	W: 123 mm H: 71 mm D: 180 mm

Features

- EN 54-16 certified

VARIODYN D1 Fire Control PA Panel

583303.21 Digital Fire Control PA Panel DCSF12



Approval: VdS, EN54-16

The Digital Fire Control PA Panel DCSF12 allows for the selection of loudspeaker circuits, transmission of voice announcements as well as of various tones and alarms. The communication unit is connected to a free DAL-bus (Digital Audio Link) on the DOMs (Digital Output Modules) via a standard CAT 5 cable. All control signals as well as all audio signals are transmitted digitally. The communication unit has 12 freely configurable keys, 13 LEDs and a manual microphone with a built-in loudspeaker. Up to four digital communication units can be connected to one DOM. Every digital communication unit can simultaneously produce and receive different voice signal through-connections and control signals within the system. A digital communication unit can be relocated by up to 300 m via a Cat 5 cable (expansion up to 2,000 m possible using fiber optic cabling) and can be expanded with up to six DKM18 digital key modules; this increases the total number of available keys and LEDs to 120 per communication unit.

The inaudible monitoring frequencies sent by the loudspeaker are continuously picked up by the microphone. Any interruption will lead to an error message.

Features

- Manual microphone with built-in loudspeaker and acoustic microphone monitoring
- Permanent monitoring of the line to the following interface module
- 24-bit AD/DA converter
- 12 freely configurable keys

Technical Data

Microphone	Elektret, cardoid characteristic
Transmission range	200 ... 12500 Hz
Loudspeaker	1 W
Sample rate	48 kHz
AD/DA converter	24 Bit
Current consumption	< 150 mA
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Color	black, similar to RAL 9005 (side frames) grey, similar to RAL 7037 (middle body)
Weight	approx. 1.6 kg
Dimensions	W: 134 mm H: 40 mm D: 196 mm

A transparent keyboard cover is available in order to provide protection against unintentional keystrokes. This way, pressing keys is only possible with the cover open. Each cover can protect three horizontally arranged keys.

A 3 m long Cat 5 cable for connection of the digital communication unit to a wall jack is included with delivery.

Accessories

583306.21 Digital Key Module DKM18
583311 Keyboard Cover for VARIODYN D1 DCS Communication Unit
583312 Installation Kit for Communication Unit DCS onto table VARIODYN D1, 19 inch
583316.21 Fiber Optics Conversion for OIM Control Unit VARIODYN D1
583317.21 Fiber Optics for Digital Communication Units DCS VARIODYN D1
583315.02 Power Supply for Fiber Optics Converter DCS O VARIODYN D1
583307 Wall Jack for VARIODYN D1 DCS Communication Unit
583300.HO Adhesive Label for DCS "Honeywell"
583318 Replacement Keycaps (package of 12 pieces)
584961 Housing for one FW - Callstation DCSF
584962 Housing for two FW - Callstations DCSF

583304.21 Digital Fire Control PA Panel DCSF1

Approval: VdS, EN54-16

Same as 583303.21 but with one freely configurable key, two LEDs and a manual microphone with built-in loudspeaker.

Accessories

583709 Dummy plate

Features

- EN 54-16 certified

583305.21 **Fire Control PA Panel DCSF 7**

Approval: VdS, EN54-16

The fully digital DCSF7 Communication Unit is used for the selection of preprogrammed alarm speech messages and for the issuing of live voice announcements in the case of an alarm. The DCSF7 contains a manual microphone and a built-in loudspeaker for listening purposes as well as for intercom operation. The communication unit is connected to a free DAL bus of the DOMs via a standard Cat 5 cable. Both all audio signals and as well as the control signals are transmitted digitally, the communication unit is supplied via the DAL bus.

Any number of DCSF7 Digital Communication Units can be operated with the VARIODYND1 system. Every digital communication unit in the system can simultaneously produce and receive different voice signal through-connections together with the VARIODYND1 system. This will ensure an optimized clearing of the building in the case of an evacuation. These through-connections are subject to the priorities required in the OENORM F 3033 and TRVB S 158 as well as mutual locking, which can be realized together with the VARIODYND1 system and a specific sequence control system. A digital communication unit can be relocated by up to 300 m via a Cat 5 cable (expansion up to 2,000 m possible using fiber optic cabling). The acoustic function of the microphone is permanently monitored.

Features

- Five freely programmable keys for alarms
- One freely configurable key for the all-clear function
- One key for reset/acoustics
- Three integrated LED indicators (operation, fault, busy)
- Manual microphone with cardioid characteristic and PTT talk button
- Optional fiber optic connection for distances up to 2000 m
- Window and lock in accordance with EN 54-11
- Corresponds to OENORM F 3033
- Optimally adjusted to fire department requirements
- Lockable metal case

Technical Data

Microphone	Manual microphone, cardoid characteristic
Transmission range	200 ... 12500 Hz
Loudspeaker	1 W
Sample rate	48 kHz
AD/DA converter	24 Bit
Current consumption	< 150 mA
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Color	red, similar to RAL 3000 (housing) white, similar to RAL 9002 (key pad)
Weight	approx. 2 kg
Dimensions	W: 200 mm H: 300 mm D: 55 mm

A 3 m long Cat 5 cable for connection of the digital communication unit to a wall jack is included with delivery.

Accessories

583316.21	Fiber Optic Converter Switchboard
583317.21	Fiber Optic Converter Communication Unit
583300.HO	Adhesive Label for DCS "Honeywell"
583318	Replacement Keycaps (package of 12 pieces)

Digital call station for non-safety-relevant applications

586102 **Table call station with DIGIM1 pregong system**

NEW

Table call station with DIGI M1 pregong system in an attractive housing. One labelable button with LED indicator for button monitoring and occupied/operating/gong display. Processor control with programming via diodes. Integrated limiter and special circuit for elimination of switch-on noise. Integral +6 dB AF amplifier with volume control. Distinctive, short pregong with controls for volume and pitch. Parallel connection of up to 40 digital call stations via line JY(ST)Y6(4)x2x0.8(0.6). 3-meter connection cable with 9-pin D-Sub connector. Cardioid gooseneck microphone in electret capacitor technology.

Technical Data

Operating voltage	24 V DC
Current consumption @ 24 V DC	approx. 24 mA
Housing	ABS light gray
Color	black
Dimensions	L: 250 mm W: 125 mm H: 30 mm D: 150 mm

586103 **Table call station with DIGIM4 pregong system**

NEW

Table call station with DIGI M4 pregong system in an attractive housing. Four labelable buttons with LED indicator for button monitoring and occupied/operating/gong display. Processor control with programming via diodes. Integrated limiter and special circuit for elimination of switch-on noise. Integral +6 dB AF amplifier with volume control. Distinctive, short pregong with controls for volume and pitch.
Parallel connection of up to 40 digital call stations via line JY(ST)Y6(4)x2x0.8(0.6). 3-meter connection cable with 9-pin D-Sub connector. Cardioid gooseneck microphone in electret capacitor technology.

Technical Data

Operating voltage	24 V DC
Current consumption @ 24 V DC	approx. 30 mA
Housing	ABS light gray
Color	black
Dimensions	L: 250 mm W: 125 mm H: 30 mm D: 150 mm

586104 **Flush-mounted box for DIGI system table call station DIGIST09**

NEW

Flush-mounted box for DIGI system table call stations with lockable 9-pin D-Sub socket including EMI/RFI filter. Quick connection via screw terminals. The socket outlet is optionally available as vertical or inclined at 30°. Complete with single frame suitable for GIRA System 55 switch range, pure white. On-wall mounting also possible using surface–mounted housing (Part No.: 581329).

Accessories for Call Stations

583316.21 **Fiber Optic Conversion for Control Unit**

Approval: VdS, EN54-16

Is connected in the control unit per Communication Unit DCS and/or UIM (only VARIODYN D1) via Cat 5 cable (max. 10 m length). This facilitates a range of up to 2,000 m. A range of up to 300 m is possible using Cat 5. The converter is supplied with power via the DAL Bus.

Technical Data

Dimensions	W: 115 mm H: 55 mm D: 25 mm

Features

- EN 54-16 certified

583317.21 Fiber Optic Conversion for Digital Communication Units DCS

Approval: VdS, EN54-16

Is connected to the Digital Communication Unit DCS and/or UIM via Cat 5 cable (max. 10 m length). This facilitates a range of up to 2,000 m. A range of up to 300 m is possible using Cat 5. For security-relevant installations, the voltage supply has to occur via the voice alarm system's 24 V DC emergency power supply.

Technical Data

Operating voltage	24 V DC
Current consumption @ 24 V DC	approx. 500 mA
Dimensions	W: 115 mm H: 55 mm D: 25 mm

Features

- EN 54-16 certified

Accessories

583315.02 Power Supply for Fiber Optics Converter

583315.02 Power Supply for Fiber Optics Converter

Power supply for Fiber Optics converters 583316.21 or 583317.21.

583307 Wall Jack for Communication Unit DCS

Wall jack for connection of a DCS or DCSF series communication unit.

583300.HO Adhesive Label for DCS "Honeywell"

10 pieces

583311 **Keyboard Cover for VARIODYN D1 DCS Communication Unit**

A transparent keyboard cover is available in order to provide protection against unintentional keystrokes. This way, pressing keys is only possible with the cover open. Each cover can protect three horizontally arranged keys of a digital communication unit or a digital key module.

583312 **Installation Kit for Communication Unit DCS onto table VARIODYN D1, 19 inch**

Installation kit for DCS15, DCS2 or DKM18.

Technical Data

Dimensions	W: 134 mm H: 40 mm D: 196 mm

Accessories

583709 Dummy plate 4 HE

583318 **Key Cap**

Transparent keyboard covers for DCS and DCSF call stations.

12 pieces

583371.21 Mains Switching Unit (MSU)

Approval: VdS, EN54-16

The Mains Switching Unit MSU serves to protect the power supply of all VARIODYN D1 components which are built into a switchboard. It also provides a plug to connect a service PC for local and network-wide servicing purposes.

Each of the up to three phases can be loaded with max. 18 A. The excess current switch automatically releases the excess current but can also be used to manually switch the voltage supply.

The operating conditions are indicated by green operating lights. The switch setting can be evaluated via auxiliary contacts.A frontal 230 V low power socket and an RJ45 socket are available for service PC connection.

Features

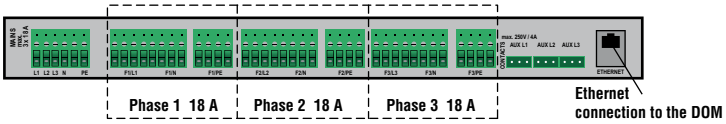
- Three 18 A excess current switches with control contacts and control indicator light
- Low power connection and Ethernet connection to connect a service PC for maintenance purposes
- Three connections for auxiliary changeover contact per excess current switch
- Up to four devices can be connected to each excess current switch

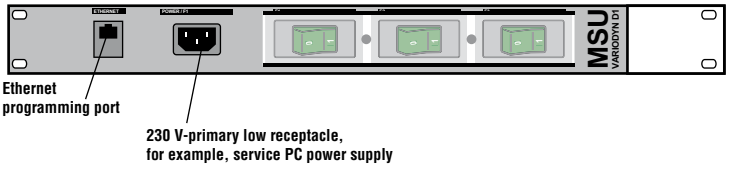
Technical Data

Thermal protection:	
Rated current	18 A
Operating life	10.000 cycles
Shutdown	1-pole
Auxiliary contacts:	
Type	Changeover contact
Contact load AC	250 V, max. 4 A
Contact load DC	24 V, max 4 A
Common technical data:	
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Weight	approx. 4.2 kg
Dimensions	W: 483 mm H: 44 mm D: 345 mm (1 HE, 19")

Accessories

583703 Mounting Kit 1





MSU rear view and front view

583351 VCM Module

NEW

Approval: VdS, EN54-16

The VCM module (View Control Module) was added to the VARIODYN D1 system in accordance with the requirements for EN54-16 approval. It enables the standardized display of collective messages and has a 5-button operator control panel. At least one VCM is required for EN54-16 systems. If only one upright cabinet is used, all 3 DOMs can be managed by one VCM module.

If several upright cabinets are set up directly side-by-side in a room and form a single system, one VCM module per room is sufficient. Remotely positioned cabinets require a separate VCM module each. The VCM module is connected directly to a UIM and 24 V DC.

The max. 3 DOMs in the cabinet in which the VCM module is located are also connected to three separate VCM module inputs. All other DOMs are linked via Ethernet. The VCM module can be programmed easily and conveniently using a macro in the “Designer” programming software.

583381.22 **System Communication Unit (SCU)**

Features

- Digital audio memory for VARIODYN D1 alarm and evacuation system
- Networkable via Ethernet (CAT 5 or fiber optics)
- Audio memory in compliance with all alarm and evacuation standards
- Can be used to log and record announcements Automatic temporary storage and playback of interrupted messages
- 24 V DC emergency power supply

Approval: VdS, EN54-16

The System Communication Unit SCU serves as digital audio memory for the VARIODYN D1 public address system. It is possible to record and playback multiple audio data streams simultaneously.

Connected to other VARIODYN D1 modules via Ethernet and is constantly monitored.Audio memory (the availability of which is critical) for alarms and evacuation announcements occurs according to IEC EN 60849 on non-volatile flash-memory. Memory capacity is approx. two hours.

Other audio files such as announcements, signals or advertisements are pre-stored on a hard drive. The memory capacity is approx. 150 hours.

The SCU can also be used to log and record announcements. These are also saved on the hard drive and are backed up with date, time and activation details. The automatic temporary storage allows previously undeliverable announcements to be played once the desired target is free.

Connections
- Ethernet connection 100 Mbit/s
- Power connection
- 24 V DC emergency power input

Indicators
- POWER LED, HARD DISK LED
- ERROR LED, STAND-ALONE LED

Technical Data

Emergency power supply:	
Current consumption	1.33 A
Rated voltage	24 V DC
Power consumption	32 W
Common technical data:	
Rated voltage	90 ... 265 V AC
Rated frequency	47 ... 63 Hz
Rated current	0.5 A @ 230 V AC
Flash memory	approx. 2 h
Hard drive capacity	approx. 1000 h
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Color	grey, similar to RAL 7016
Weight	approx. 3 kg
Dimensions	W: 483 mm H: 44 mm D: 360 mm (1 HE, 19")

Accessories

583486 Cat 5 Patch Cable, 1 m yellow (ETH)
583487 Cat 5 Patch Cable, 2 m yellow (ETH)
583488 Cat 5 Patch Cable, 3 m yellow (ETH)
583703 Mounting Kit 1

583331.21 Universal Interface Module (UIM)

Approval: VdS, EN54-16

The Universal Interface Module UIM serves as an interface module of the VARIODYN D1 public address systems, connecting two analog audio inputs, two analog audio outputs as well as 48 control contacts. Monitoring for short circuiting and interruptions can be activated for eight control contacts.
The UIM can be connected to the VARIODYN D1 DOM module via the DAL databus.

The UIM digitalizes two analog audio inputs, from for example a CD player, security system, etc., and transfers the digitalized audio data to the VARIODYN D1 DOM module via the DAL databus. Two outputs are available as analog audio sources in order for example to forward all played messages to an external device. The 48 contacts can be configured as either contact inputs or outputs. Thus the public address system can be controlled externally and information regarding the status of the public address system can be made available.

Features

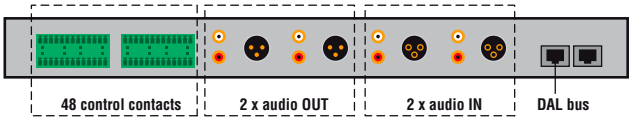
- Conforms to IEC 60849/VDE 0828
- Two analog floating audio inputs/outputs
- 48 contacts as inputs and/or outputs, freely programmable
- Digital Audio Link (DAL) to DOM
- Implementation as 19” mountable unit
- Connection of diverse disciplines possible via UIM

Technical Data

Audio output:	
Nominal level	0 dBu
Transmission range	20 ... 22000 Hz
Harmonic distortion at nominal level	< 0.05 %
Output impedance	200 Ω / 200 Ω (XLR / Cinch, potential free)
Audio input:	
Nominal level	0 dBu
Transmission range	20 ... 22000 Hz
Harmonic distortion at nominal level	< 0.05 %
Load impedance	100 kΩ / 1 kΩ (XLR / Cinch, potentialfrei)
Common technical data:	
Current consumption @ 24 V DC	< 150 mA
Inputs	max. 36 V DC
Outputs	36 V DC / 50 mA
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Weight	approx. 3.6 kg
Dimensions	W: 483 mm H: 44 mm D: 345 mm (1 HE, 19")

Accessories

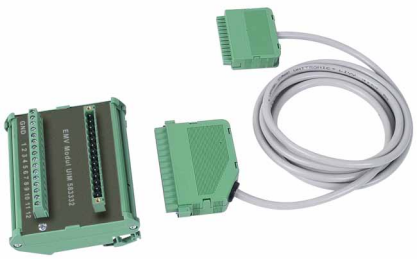
583481 Patch Cables Cat 5, 1 m blue (DAL)
583482 Patch Cables Cat 5, 2 m blue (DAL)
583483 Patch Cables Cat 5, 3 m blue (DAL)
583703 Mounting Kit 1



UIM rear view and front view

583332 Overvoltage protection module for UIM contacts

NEW



The UIM has 48 contact inputs and outputs. These inputs and outputs are divided into 4 blocks with 12 inputs/outputs on each block.
On EN54-16-compliant systems, the overvoltage protection module 583332 must be used for connecting wires going to external contacts that are longer than 3 m. The overvoltage protection module provides protection for 12 inputs and outputs (i.e. 1 block). It is used instead of signal cable 12 (Part No. 583401.21). It is supplied with its own connection cable.

583341.21 Contact Interface Module (CIM)

Approval: VdS, EN54-16

The Contact Interface Module (CIM) is used as a VARIODYN D1 system interface for the connection of 8 control contacts. These 8 control contacts can be configured either as inputs or outputs. When used as inputs, four of the eight contacts can be programmed to monitor lines. A 3 m long Cat 5 cable for connecting CIM to the TWI-input of the DOM is included with delivery.

Technical Data

Inputs	max. 36 V
Outputs	36 V DC / 50 mA
Ambient temperature	-5 °C ... 55 °C
Air humidity	15 % ... 90 %
Weight	approx. 310 g
Dimensions	W: 105 mm H: 40 mm D: 105 mm

Features

- Input and output contacts freely programmable / 4 can be monitored
- Cat 5 cabling to DOM
- Mounting via DIN rails possible
- Connection of different disciplines via CIM possible

581237 Tuner / CD / MP3 Player MP02

NEW

The tuner / CD / MP3 Player combination MP02 also includes a Flashdisk reading device. The player can also be operated using the supplied remote control. The 2 audio outputs facilitate the simultaneous playback of both sources.

Technical Data

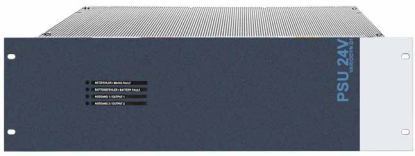
Tuner:	
Frequency range	87.5 ... 108 MHz
Signal-to-noise ratio	> 60 dB
Harmonic distortion at the nominal level	< 0.8 %
Channel separation	> 30 dB
Transmission range	100 ... 10000 Hz
CD:	
Output voltage	1.2 V DC ± 2 dB
Transmission range	20 ... 20000 Hz
Harmonic distortion at nominal level	< 0.1 %
Common technical data:	
Rated voltage	230 V AC
Power consumption	50 W
Inputs	FM 75 Ω, USB-Port, SD-Port
Outputs	1 x Cinch
Weight	approx. 3.5 kg
Dimensions	W: 482 mm H: 44 mm D: 250 mm (1 HE)

We have updated our system design and emergency power supplies to the current state of standardization in this new edition of our “Voice Alarm Systems” catalog. The following emergency power supply is certified in compliance with the EN54-4 (A2) standard which is stipulated as of August 2009 for voice alarm system emergency power supplies. Battery capacities and the number devices for the operation of a voice alarm system depend on the required delay time, the required performance, and the alarm time, among other things. To help you both easily and efficiently guarantee optimal distribution of the emergency power supply, our “VARIODYND1 emergency power supply calculation tool” is ready for you to download in the service area of our website.

581720.VD

Emergency Power Supply 24 V / 100 A

NEW



Features

- Permanent monitoring of fuses
- Monitoring of the battery charging current
- Monitoring of the battery charge status
- LED indicators for power supply, battery, output
- Temperature sensor
- Floating contacts for power supply, battery, output

Approval: EN 54-4/A2

Emergency power manager for emergency power supply of ENS (Electro-acoustic Emergency Warning Systems) / VAS (Voice Alarm Systems) / VA (Voice Alarm) applications in compliance with the TRVB 158 S and/or VDE 0833-4 and EN 60849. This emergency power manager is approved according to EN 54-4/A2. (VARIODYN D1 Design)

Technical Data

Rated voltage	230 V AC
Output voltage	24 V DC
Output current	max.100 A
Weight	approx. 10 kg
CE certificate	0333-CPD-075243
Dimensions	W: 483 mm H: 133 mm D: 395 mm (3 HE, 19")

2 accumulators of the same type are required per emergency power supply

Available for delivery end Q3/2011

Accessories

581730 Battery for Emergency Power Supply 12 V / 105 Ah
581730 Battery for Emergency Power Supply 12 V / 150 Ah

805683 External Power Supply DCU 2403

Approval: VdS, EN54-4

External power supply in a compact metal housing for up to two 12 V/ 24 Ah batteries. This power supply facilitates an uninterruptable supply of power. Integration into the esserbus/ esserbus-PLus optional via optional adapter card (Part No. 805684) and esserbus Transponder (Part No. 808613.10).

Four floating relay outputs are available for the transmission of disturbances (power failure, ground fault, battery failure and collective fault). External LED display for operation and collective fault on the lockable front door, internal LEDs for detailed recognition of emergency power operation, individual monitoring of battery failure and ground fault.

Features

- Reversible output voltage 12 V DC or 24 V DC
- Output current 6 A at 12 V DC or 3 A 24 V DC
- Simple integration into esserbus/ esserbus-PLus
- Internal service LED displays
- Four floating relay outputs
- Monitoring of mains voltage with selectable delay time
- Individual battery monitoring for emergency power operation
- Disengagable ground fault monitoring
- Front door with cover contact

Technical Data

Rated voltage	230 V AC
Rated frequency	50 ... 60 Hz
Output voltage	12 V DC oder 24 V DC; ± 1 % (temperature controlled)
Output current	6 A @ 12 V DC / 3 A @ 24 V DC
Battery capacity	max. 48 Ah @ 12 V DC / max. 24 Ah @ 24 V DC
Contact load relay	max. 125 V / 1,5 A / 60 VA
Ambient temperature	-5 °C ... 40 °C
Storage temperature	-20 °C ... 45 °C
Type of protection	IP 30
Housing	sheet steel
Color	grey, similar to RAL 7035
Weight	approx. 23 kg incl. batteries each 12 V DC / 24 Ah
CE certificate	0786-CPD-20935
Dimensions	W: 310 mm H: 410 mm D: 211 mm

Batteries used in the power supply must be tested and VdS approved. Batteries of the same age from the same manufacturer coming from the same production batch must be used when connecting batteries in parallel. Furthermore, regulations as per DIN VDE 0833-1 have to be adhered to.

Ready-made cables for connecting 12 V/ 24 Ah SB batteries
Housing lock with key
Accessory pack (contains: dummy cover, insert jumper for device fuses, jumper for adjusting output voltage)

Accessories

808613.10 esserbus transponder 4 IN / 2 OUT

581730 Battery for Emergency Power Supply 12 V / 105 Ah

Emergency battery (Blei Vlies) for usage in emergency power supply of ENS/VAS/VA applications.

Technical Data

Weight	approx. 32.5 kg
Dimensions	W: 502 mm H: 111 mm D: 236 mm

Features

- Optimized for usage in 19" cabinets
- Front terminal

581731 Battery for Emergency Power Supply 12 V / 150 Ah

Emergency battery (Blei Vlies) for usage in emergency power supply of ENS/VAS/VA applications.

Technical Data

Weight	approx. 49.5 kg
Dimensions	W: 552 mm H: 110 mm D: 288 mm

Features

- Optimized for usage in 19" cabinets
- Front terminal

018006 Battery 12 V DC / 24 Ah capacity

2 x Fast-On Adapters from M6 to 6.3 mm each 2 x M5 hexagon head cap screws, washers and snap rings.

581316 Microphone P4, for AVR

Microphone for usage of the AVR (Automatic Volume Regulation) functionality of the DOM. The microphone is installed in the area concerned and connected to the corresponding DOM input via the XLR terminal box (Part No. 581320).

Technical Data

Transmission range	20 ... 16000 Hz
Sensitivity	2.5 mV
Sound level	max. 157 dB
Impedance	2000 Ω
Weight	approx. 400 g

581320 Flush-Mounted XLR Panel Jack

Flush-mounted box with 3-pin / GIRA System 55 XLR panel jack.

Technical Data

Color	pure white / silk-mat

Accessories

581329 Surface-Mounted Box

581329 Surface-Mounted Box

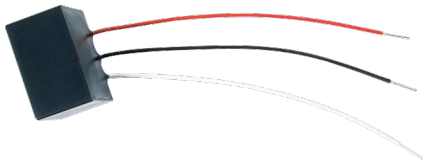
Surface-mounted box for Part Nos. 581320 to 581323 / GIRA System 55

Technical Data

Color	pure white / silk-mat

Delivery time on request

583496 End of Line Module (EOL)



Approval: VdS, EN54-16

End of line module for terminating VARIODYN D1 voice alarm system loudspeaker lines for standardized monitoring if more than 20 loudspeakers are connected per line. The module is connected at the line end, following the last loudspeaker.

Independent of number and performance of connected loudspeakers.

Features

- Standardized monitoring
- Terminating device for 100 V loudspeaker line using 2-wire technology
- Different connection options for optimal line adaptation (3 connections)
- The module is sealed and thus has optimal moisture protection

583386.21 TWI - RS 232 Adapter

Approval: VdS, EN54-16

The TWI-RS232 Adapter is used for the conversion of the TWI buses to RS232. Used for specific maintenance purposes and connection of an external system (e.g. Esser IQ8Control / see also page 34).
The TWI-RS232 Adapter is connected either directly to the DOM or via the supplied Cat 5 cable (depending on the hardware).

Features

- EN 54-16 certified

583387.21 Time Control Module GPS VARIODYN D1

Approval: VdS, EN54-16

This module is meant for the time synchronization of a VARIODYN D1 alarm/evacuation system via GPS (Global Positioning System). The exact time is then transmitted to all other networked DOMs via one DOM which is time-synchronized with the TCM-GPS (Time Control Module GPS). This facilitates precisely timed, automated announcements (e.g. the recess bell in schools) timed volume adjustment (e.g. night-mode in railway stations) or simply just precisely-timed documentation of announcements or trouble alarms.

Connection
The module is either connected directly to the I2C interface via a standard CAT5 cable (max. 10m) or connected to the 9pin Sub-D jack of a DOM with the included adapter cable.

Monitoring
Both disconnection of the module as well as of the satellite reception is recorded.

Features

- Module for time synchronization of the entire VARIODYN D1 system
- Connection to an arbitrary DOM in the system is possible
- Time synchronization via GPS signal
- Connection to the system via prefabricated cable (included)

Technical Data

Dimensions	W: 55 mm H: 25 mm D: 115 mm

Prefabricated cable included.

583390 Master Clock SC 98.47 pro

Master clock for timer control in the VARIODYN D1 system. The master clock is connected to the VARIODYN System via a UIM (Part No. 583331.21). A DCF77 time synchronization of the master clock can be carried out using the Wireless Receiver (Part No. 583391).

Switching Control / Signal Clock
- 4 switching and/or signal circuits
- Day, week and year settings
- 300 units of memory
- Switching functions, ON, OFF, or Pulse
- Shortest switching distance of 1 minute (and/or 1 sec. with pulse)
- Switching capacity of 10 A per channel
- Manual switching override
- Adjustable switching times
- Block formation of weekdays and switching functions
- Programmable without mains connection (via keyboard or with data key)
- PC programmable option

Features

- For approx. 40 slave clocks (24 V DC, 300 mA, pole changing)
- Slave clock line protected against short-circuiting
- Automatic setting of slave clocks
- Slave clock line follow-up device with voltage recovery (automatic setting of slave clock time)
- Fully automatic daylight saving time change with 60 additional pulses and/or pulse suppression
- Monitoring of slave clock line and error indication in display
- PIN encryption security
- Illuminated display
- “Data key” function “DCF” function

583391 Wireless Receiver FU 20.00 pro

DCF77 Wireless Receiver for connection to the Master Clock (Part No. 583390). Up to 10 master clocks can be connected in parallel.

The DCF77 signal is sent from Mainflingen (near Frankfurt on the Main). Under normal conditions, the signal range of the FU 20.00 pro receiver is approx. 1500 kilometers.

Features

- Reception of the DCF77 telegram
- Time and date are automatically fed into the timer switches
- Daylight savings time adaptation via the DCF telegram
- Control light flashes when receiving
- Easy mounting, case is rotatable in the mounting bracket
- Feed line: 2-wire, no shielding, selectable cross-section
- Max. line length of 200 m between FU 20.00 pro and SC 98.47 pro

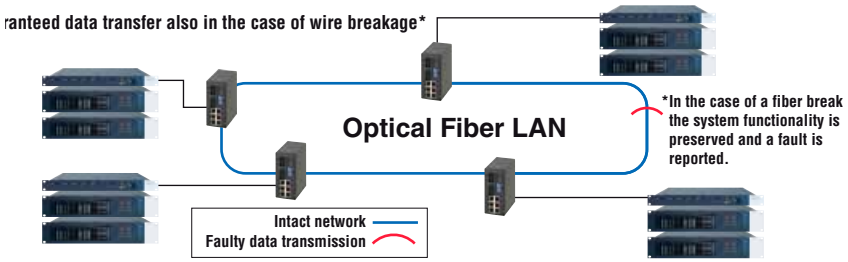
583392 FO Switch for Ethernet Ring, multimode

Approval: VdS, EN54-16

The fiber optic switch is used for the creation of an Ethernet network in loop design. Due to the loop structure the network is fully redundant since the other side of the loop can be used for communication in the case of a fiber optic fiber break. Furthermore each switch is equipped with two operating voltage inputs (24 V DC) and a relay for the forwarding of fault messages. Suitable for multimode fibers 50/125 µm and 62.5 / 125 µm.

Technical Data

Power consumption	6 W
Operating voltage	12 ... 48 V DC
Data transmission speed	14880 / 148800 bps (Ethernet / Fast Ethernet)
Transmission distance	max. 2 km (LWL)
Ambient temperature	0 °C ... 60 °C
Type of protection	IP30
Dimensions	W: 54 mm H: 135 mm D: 105 mm



Features

- 6 Ethernet connections
- One relay for the forwarding of fault messages contact load 24 V DC / 1 A
- 2 duplex SC FO connections

- Standards
- IEEE 802.3 10Base-T
- IEEE 802.3u 100Base-TX/FX
- IEEE 802.1p Priority Support
- IEEE 802.1d Spanning Tree Protocol
- IEEE 802.1w Rapid Spanning Tree
- IEEE 802.1q VLAN Tagging

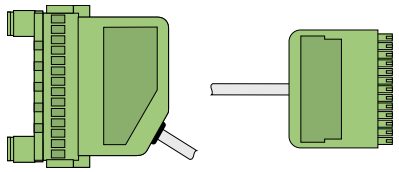
583393 FO Switch for Ethernet Ring, single mode

Same as 583392 but for single mode optical fibers. Suitable for multimode fibers 9/125 µm and 10/125 µm.

Technical Data

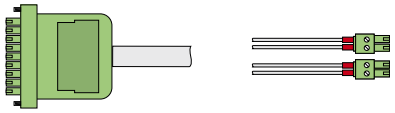
Transmission distance	max. 30 km (LWL)

583401.21 **Control Cable 12 for UIM**



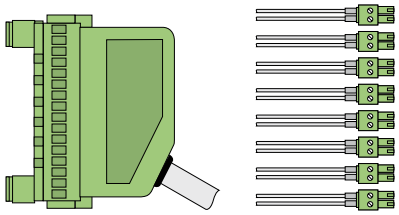
Prefabricated cabling from 12 control contacts of the UIM to the cabinet rear panel; up to 4 pieces connectable per UIM.

583422.21 **Backup Cable RC 22 VARIODYN D1**



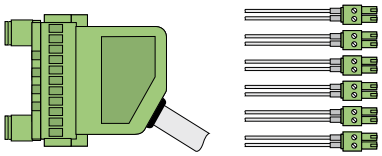
Prefabricated cabling of 2 auxiliary channels to 4 bearer channels

583451.21 **Cable for Cabinet Rear Panel DOM4-8**



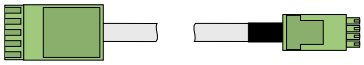
Prefabricated cabling of the 100 V-outputs of the DOM4-8 to the cabinet rear panel; 1 piece is connectable per DOM4-8. Also suitable for the cabling of the switch contacts of the DOM4-x to the cabinet rear panel.

583452.21 **Cable for Cabinet Rear Panel DOM4-24**



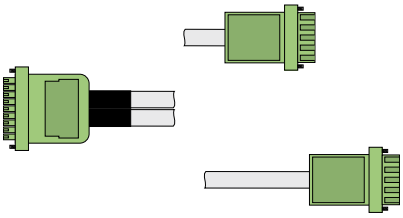
Prefabricated cabling of the 100 V outputs of the DOM4-24 to the cabinet rear panel; up to 4 pieces connectable per DOM4-24.

583476.21 **Output Cable Amplifier - DOM**



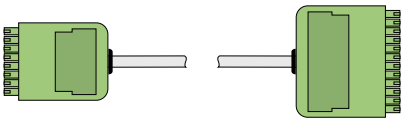
Prefabricated cabling of power amplifiers, 2 channels (max. 100 V) to the DOM.

583477.21 **Output Cable 2 Amplifiers- DOM**



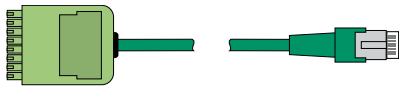
Prefabricated cabling of power amplifiers, 4 channels (max. 100 V) to the DOM.

583471.21 **Input Cable DOM (G1) - XV Amplifier (G1)**



Prefabricated cabling from DOM to power output amplifier, 2 channels (LF, control)

583472.21 **Input Cable DOM (G1) - Amplifier (as of G2)**



Cable for connecting older 1st generation devices with the current 2nd generation models.

583473.21 **Input Cable DOM (as of G2) - Amplifier (G1)**

Cable for connecting older 1st generation devices with the current 2nd generation models.

583481 **Cat 5 Patch Cable, 1 m blue (DAL)**

583482 **Cat 5 Patch Cable, 2 m blue (DAL)**

583483 **Cat 5 Patch Cable, 3 m blue (DAL)**

583486 **Cat 5 Patch Cable, 1 m yellow (Ethernet)**

583487 **Cat 5 Patch Cable, 2 m yellow (Ethernet)**

583488 **Cat 5 Patch Cable, 3 m yellow (Ethernet)**

583489 **XLR Cable 1 m, Plug - Socket, length 1 m**

Audio connection line with XLR plug and XLR socket, e.g. for connecting an external audio device to the UIM.

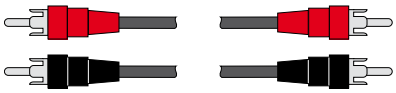
583490 **XLR Cable 10 m, Plug - Socket, length 10 m**

Audio connection line with XLR plug and XLR socket, e.g. for connecting an external audio device to the UIM.

583491 **Input Cable DOM Amplifier, 0.5 m green**

Prefabricated cable from the DOM to the 2-channel power amplifier.

583492 **Audio Connection Line, length 1.8 m**



Audio cable, stereo cinch.

Part Number Index

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Notes

terms and conditions

TERMS AND CONDITIONS
Except as agreed in writing the following terms and conditions apply without exception to all sales by **Novar GmbH**, Dieselstr. 2, 41469 Neuss, Germany ("Novar") to Buyer.

1. SOLE TERMS.
Novar's sale is expressly limited to the terms herein. Any additional or different terms or conditions on Buyer's purchase order or any other instrument, agreement, or understanding are deemed to be material alterations and are rejected and not binding upon Novar. Novar's acceptance of Buyer's purchase order is expressly conditional upon Buyer's assent to the terms and conditions contained herein in their entirety. Buyer's acceptance of delivery from Novar constitutes Buyer's acceptance of these terms and conditions in their entirety.

2. QUOTE/ PRICES.
a) Information in any quotations and in attached drawings and illustrations about the goods, their measurements and weights are only approximate unless they are expressly stated as being binding.
b) Content and scope of the supply are determined exclusively on the basis of Novar's written quotation and order confirmation.
c) Novar's quotations are subject to change until accepted by the Buyer. If an offer is stated as being binding, it shall be binding for 3 months from its date of issue.
d) Novar reserves the right to make technical changes to construction, form and material of goods- also during the delivery time-, providing these changes are reasonably acceptable to Buyer. If agreed by the parties, changes to goods or services to be supplied, Novar is entitled to claim additional costs with immediate effect and is not obliged to perform the contract until Buyer agrees to make such payments.
e) Buyer must request shipment of the entire quantity of goods ordered within 12 months from date of order; otherwise, Novar standard prices at time of shipment may, at Novar's option, apply to those quantities actually delivered, even if already invoiced.
f) Unless specifically agreed in writing prices for goods do not include the cost of packaging, or services such as installation, start-up, commissioning or maintenance. If Novar has expressly agreed to ship goods, shipment costs will be as per the quote or if none mentioned the relevant catalogue.
g) All tooling, designs, drawings, and other intellectual property produced or delivered hereunder are owned by Novar.

3. PAYMENT.
a) Unless otherwise expressly agreed in writing, all payments are to be in EUROS and are due net in Novar's account within 30 days from date of invoice.
b) All bank charges in connection with any payment shall be paid by Buyer. Cheques and/or bills of exchange will only be accepted in payment's stead and in accordance with a special written agreement. They are deemed as payment only when they have been cashed in.
c) Novar at all times reserves the right to evaluate Buyer's credit standing and if Buyer fails to qualify for credit under Novar's criteria, Novar may modify or withdraw credit terms without notice and require guarantees, security or payment in advance for further deliveries of goods. If these are not provided within a reasonable period following a notice Novar may rescind the contract and/or claim costs, losses or damages.
d) Invoices remaining unpaid after their due date will be subject to an interest charge of 8%-points above the respective base rate published by the German Federal Bank per year, unless buyer is not responsible for the default. Buyer will pay all costs necessary for collection of unpaid amounts, including attorneys' fees, unless Buyer is not responsible for the default.

4. DELIVERY; EXAMINATION; RETENTION OF TITLE, COOPERATION .
a) All delivery dates are estimates unless agreed otherwise by Novar in writing.
b) Novar may make deliveries under any order in one or more shipments, to the extent that this is reasonably acceptable to Buyer, and may issue separate invoices.
c) Any fixed dates for deliveries agreed in writing are conditional upon the timely provision of all documents by the Buyer, any required authorisations and approvals, in particular of plans and the provision of all necessary information. If these requirements are not fulfilled in a timely manner, the fixed dates will be extended accordingly. This does not apply if Novar is responsible for the delay.
d) Novar may demand an appropriate extension of the delivery date in the event of subsequent changes agreed.
e) Delivery terms for goods are EXWORKS (Incoterms 2000) Novar with all risk of loss or damage to goods passing to Buyer upon delivery to carrier.
f) Buyer must inspect all goods upon delivery without undue delay and must report i) obvious defects, transport damages, discrepancies and shortages without undue delay, and in no event later than 10 days after delivery, (ii)hidden defects without undue delay, and in no event later than 10 days after detection in writing to Novar. Otherwise all goods will be deemed delivered and accepted, unless Novar fraudulently neglected to disclose such faults. Buyer will return to Novar any goods that are rejected at is own expense. In the event Buyer refuses to accept delivery, Buyer shall be liable for increased costs incurred by Novar in accordance with section 7c).
g) Novar shall retain title in all goods delivered by Novar until payment has been made in full. In the event Buyer has credit with Novar, retention of title shall serve as security for any balance due to Novar.
h) Until title in the goods is transferred to Buyer, Buyer shall treat the goods with care; in particular it shall insure them sufficiently against fire, water and theft at reinstatement value at its own cost.
i) In the event of seizure or any other measure taken by third parties in relation to the goods, Buyer shall notify Novar in writing without undue delay so that Novar can initiate legal proceedings pursuant to § 771 of the German Code of Civil Procedure in order to prevent execution of any court order. If the third party is unable to reimburse the costs incurred in court and out of court of a claim pursuant to § 771 of the German Code of Civil Procedure, Buyer is liable for the damages incurred hereby.
j) Any processing of or alteration to the goods carried out by Buyer shall always be carried out for Novar. If the goods are processed using other items, which do not belong to Novar, Novar shall acquire co-ownership of the new item in the ratio of the value of the object delivered to the other processed items at the time of processing.
k) If the goods are irreversibly mixed using other items, which do not belong to Novar, Novar shall acquire co-ownership of the new item in the ratio of the value of the object delivered to the other mixed items at the time of mixing. If the mixing process takes place in such a way that Buyer's item must be regarded as the principal item the parties shall be deemed to have agreed that Buyer shall transfer shared title to Novar pro rata.
(l) Should Buyer sell the goods delivered – whether processed or not – in due course of business, it hereby assigns any claims from selling the goods with all ancillary rights vis-à-vis its customer to Novar.
(m) On good cause Buyer is obliged, if requested by Novar, to inform Novar of any assignment to a third-party purchaser and to give Novar all information required for the assertion of its rights and to hand over any documents.
(n) Should the realisable value of Novar's security exceed the debt claim to be secured by more than 10 % Novar shall release part of the security– at its discretion – at the request of Buyer.
(o) Buyer shall make available in time all equipment and grant access to all facilities which Novar may require to perform any services.

5. TAXES.
The amount of any and all applicable taxes will be added to the price and paid by Buyer, unless Buyer has provided Novar with exemption certificates acceptable to the taxing authorities.

6. FORCE MAJEURE. DELAY.
a) Novar is not liable for any delay in production or delivery of goods if due to a force majeure event, which includes, among other things, shortages or inability to obtain materials or components, or refusals to grant an export license or the suspension or revocation thereof, or any other acts of any government that would limit Novar's ability to perform, fire, earthquake, flood, severe weather conditions, or any other acts of God, quarantines, epidemics, pandemics, or other regional medical crisis labour strikes or lockouts, riots, strife, insurrection, civil disobedience, armed conflict, terrorism or war (or imminent threat of same), or any other cause whatsoever beyond Novar's reasonable control.
b) If the force majeure event continues for longer than 90 days, either party may terminate Buyer's purchase order. If Buyer terminates the order Buyer will pay Novar for work performed prior to termination and all reasonable expenses incurred by Novar prior to termination. In the event of delays in delivery or performance caused by force majeure or Buyer, the date of delivery or performance shall be extended by the period of time Novar is actually delayed or as mutually agreed. Any claims for damages, costs or losses howsoever construed shall be excluded.
c) If, for reasons other than the foregoing, Novar should default or delay or not deliver goods, Buyer's sole remedy against Novar is an option to cancel Buyer's purchase order, through prior written notice to Novar In as far as Buyer incurs damages due to a delivery delay Novar's liability is limited to 0.5% of the order value of the delayed delivery per week up to a maximum amount of 5% of the order value of the delayed delivery. Buyer is only entitled to claim damages in lieu of performance in accordance with section 11 (limitation of liability).

7. TERMINATION, RETURN OF GOODS.
a) Buyer may not terminate or cancel a purchase order without Novar's prior written consent. Goods scheduled for shipment within 30 days cannot be rescheduled. Goods scheduled for shipment between 30 and 60 days may be rescheduled with Novar's prior written consent and if rescheduled beyond 60 days that quantity may not be further rescheduled. Buyer is, nonetheless liable for termination charges, which may include i) a price adjustment based on the quantity of goods delivered, (ii) all costs, direct and indirect, incurred and committed for Buyer's terminated purchase order, (iii) the full cost of all unique materials required for custom goods, and (iv) a pro-rata compensation covering the prorated expenses and anticipated profits consistent with industry standards.
b) Novar may terminate a Buyer's purchase order in whole or in part upon Buyer's breach of these terms and conditions or Buyer's bankruptcy, insolvency, dissolution, or receivership proceedings without any further liability.
c) Returns of goods are only accepted in their original packed and sealed condition within six months after shipment. Software, customised products and products in opened pakkaging, lacquered und non-reusable parts cannot be returned. Goods can only be returned with an authorization number (RMA) obtained from Novar in advance of shipment to Novar. The RMA is specific to the relevant goods and quantity. Novar reserves the right to i) reject any return of other goods than specific to the RMA or (ii) charge an additional 25 € per return.
In case of accepted returns, the purchase price shall be repaid with a deduction of up to 20% for processing, testing, administration and other overheads. The minimum charge for returns is 25.00 € per invoice. This does not affect the purchaser's rights under the product warranty. If the Purchaser withdraws from the Contract and is not entitled to do so, or if the Purchaser refuses to accept the delivery and is unjustified in doing so, the Seller is entitled to 15% of the agreed price as liquidated damages, unless the Purchaser proves that the Seller has not suffered any damage or to a lesser extent. Reserves the right to claim further damages.

8. INFRINGEMENT INDEMNIFICATION.
a) Novar agrees to i) defend or settle any claim, suit, or proceeding brought against Buyer based solely upon a claim that any goods manufactured and provided solely by Novar hereunder directly infringe any third party German patent, copyright, or maskwork, and (ii) to pay costs and damages finally awarded to the third party, provided that: a) Novar is notified promptly in writing of such claim, b) Novar is provided sole control of such defence or settlement using counsel of Novar's choice, and c) Buyer provides Novar with all available information and assistance. Because Novar has exclusive control over resolving infringement claims hereunder, in no event will Novar be liable for Buyer's attorneys' fees, if any.
b) Novar shall not be responsible for any settlement or compromise of any such third party claim made without Novar's written consent. Novar has no obligation and this Section 8 will not apply to any claim of infringement of any intellectual property right of a third party i) by goods not in Novar's catalogue or goods developed pursuant to Buyer's direction, design, process, or specification, (ii) by the combination of any goods with other elements if such infringement could have been avoided but for such combination, (iii) by goods that have been modified if such infringement would have been avoided by the unmodified goods, (iv) by goods not used for their ordinary purpose, or (v) by software if such software is other than the latest version of the software released by Novar and provided to Buyer. Buyer agrees to defend, indemnify, and hold harmless Novar from and against any claims, suits, or proceedings whatsoever arising from such exclusions identified in this Section 8b), unless this is not caused by Buyer's failure.
c) At any time after a claim has been made or Novar believes is likely to be made, or a court of competent jurisdiction enters an injunction from which no appeal can be taken, Novar has at its option the discretion to i) procure for Buyer the right to continue using such goods, (ii) replace or modify such goods in a way that it does not further infringe any third party intellectual property rights and without affecting the functionality of said goods. In the event Novar fails to do so within a reasonable time limit to be set by Buyer, Novar shall accept the return of such goods and refund the purchase price less 20% annual depreciation from shipment date.
d) The foregoing states Buyer's exclusive remedy for any actual or alleged infringement of intellectual property rights. Buyer is only entitled to claim damages subject to section 11 (limitation of liability).

terms and conditions

9. SOFTWARE.
a) The use of Software, if provided separately or installed on a good supplied, is governed by the following terms unless a software license agreement is included with such software.
b) Subject to Buyer's compliance with these terms and conditions, Novar grants to Buyer a personal, limited, nonexclusive license to use the object code of the software solely for Buyer's internal purposes. The license is limited to such kind of goods as are specified on Buyer's purchase order, quotation or acknowledgment. No other use is permitted.
c) Novar retains for itself (or, if applicable, its suppliers) all title and ownership to any software delivered hereunder, all of which contains confidential and proprietary information and which ownership includes, without limitation, all rights in patents, copyrights, trademarks, and trade secrets.
d) Buyer shall not attempt any transfer without prior written consent of Novar, sublicense, or redistribution of the software except as expressly permitted herein. Buyer is entitled to copy the software in as far as necessary for the contractual purpose. Buyer is entitled to make back-up copies in as far as necessary. Furthermore Buyer shall not disclose, distribute, or display any such software, or otherwise make it available to others (except as Novar authorizes in writing) or allow any unauthorized use of the software. Buyer is only entitled to reverse compile the software within the scope of § 69e UrhG. Buyer is only entitled modify, upgrade or alter the software in any other way within the scope of § 69c UrhG.
e) Novar may terminate this license if Buyer breaches fundamental provisions under these terms and conditions. If the software is delivered with a good, Buyer may only transfer its license of the software to a third party in conjunction with the sale by Buyer of the good on which the software is installed.

10. WARRANTY.
a) To the extent permitted by law Novar shall only liable in accordance with the following warranty conditions, which replace any other warranties or guarantees. Any other claim shall be excluded. In particular (unless otherwise agreed in writing) Novar does not warrant the fitness of the product for any specific use which would not be the use for which the product was designed by its manufacturer.
b) Except as otherwise expressly provided herein, Novar warrants goods in all material respects to be free of defective materials and faulty workmanship and as conforming to applicable specifications and/or drawings. Unless otherwise agreed in writing commencing with Novar's date of shipment the warranty period shall run for12 months. Warranty for spare parts if limited to 12 months from delivery.
c) Non-complying goods returned to Novar in accordance with Section 4 f) will be repaired or replaced, at Novar's option, and return-shipped lowest cost, transportation prepaid. The costs of transportation to Novar have to be borne by Buyer. In the event Novar fails to repair or replace the non-complying good within a reasonable time limit set by Buyer, Novar shall accept the return of such goods and refund the purchase price less 20% annual depreciation from shipment date. The foregoing states Buyer's exclusive remedy in case of defects. Buyer is only entitled to claim damages subject to section 11 (limitation of liability).
d) If so requested by Novar the Buyer shall give Novar sufficient opportunity to verify any fault, in particular to provide faulty goods and their packaging to Novar for inspection. If the Buyer refuses, Novar shall not be liable for such defects. No goods will be accepted for return without an authorization number obtained in advance of shipment to Novar.
e) Goods subject to wear and tear or burnout through usage shall not be deemed defective because of such wear and tear or burnout. No warranty shall apply if the defect or damage was caused by or related to installation, combination with other parts and/or products, modification to or repair of any goods other than by Novar, or resulted from Buyer's acts, omissions, misuse, or negligence. f) Repaired or replaced goods shall be warranted for the remainder of the unused warranty term or for 90 days from shipment, whichever is longer.
g) It is Buyer's responsibility to ensure that the Goods are fit for the application in which they are used.
h) Software, if supplied separately or installed on goods supplied, and warranted by Novar, will be furnished on a medium that's free of defect in materials or workmanship under normal use for so long as the hardware and/or system is under warranty. During this period, Buyer has the rights listed in section 10 c) with regard to any defects of the software. Unless stipulated otherwise in a separate software license agreement no further warranty is given in respect of software.
i) If Novar provides any services to the Buyer, including but not limited to training or assistance with configuration and installation of the goods, Novar shall provide such services in accordance with normal industry practice at such rates as may be specified by Novar in its price list from time to time. In case of non-conformance which Novar has been notified of correctly and promptly, Novar will repeat services and/or correct accordingly. To the extent permitted by law Novar accepts no liability to the Buyer arising out of the provision of such services.
j) Novar does not represent or warrant that the goods may not be compromised or circumvented or that the goods will prevent any personal injury or property loss, burglary, robbery, fire or otherwise, or that the goods will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of burglary, robbery, fire or other events occurring without providing an alarm, but it is not an insurance or guarantee that such will not occur or that there will be no personal injury or property loss as a result.
k)These warranties are for the benefit of the Buyer only and are not assignable or transferable.

11. LIMITATION OF LIABILITY.
a) Novar is liable for intent and gross negligence on its part, on the part of its legal representatives and vicarious agents. If Novar has not acted intentionally Novar's liability is restricted to typical, foreseeable damage.
b) Novar shall also be liable in the event of negligent injury to life, body and health caused by Novar, its legal representatives or vicarious agents and in the event of wilful failure to disclose a defect. Where a guarantee is provided by Novar, then the extent of Novar's liability is to be determined pursuant to the guarantee declaration.
c) Novar shall also be liable for the negligent failure to comply with any of its obligations that are fundamental to the purpose of the agreement. If Novar has not acted intentionally Novar's liability is restricted to typical, foreseeable damage.
d) Additionally Novar shall be liable in cases of mandatory statutory liability, for example pursuant to the Product Liability Act.
e) Buyer shall indemnify Novar against any claims, damages, losses, costs and expenses incurred by Novar as a result of either claims made against Novar by third parties arising out of the combination or use of the goods with any incompatible ancillary products that may be connected to the goods or any other matter for which Novar would not be liable to Buyer under these terms and conditions.f) Other than stated herein any liability of Novar is excluded, regardless of the theory of liability, whether based in contract, tort, indemnity or otherwise.
g) Buyer shall notify and consult with Novar without undue delay and comprehensively if it intends to take legal recourse in accordance with the afore-mentioned provision. Buyer has to allow Novar to investigate and examine the damages.

12. RECOMMENDATIONS.
Any recommendations or assistance provided by Novar concerning the use, design, application, or operation of the goods shall not be construed as representations or warranties of any kind, express or implied, and such information is accepted by Buyer at Buyer's own risk and without any obligation or liability to Novar. It is the Buyer's sole responsibility to determine the suitability of the goods for use in the Buyer's application(s). Other than in cases of statutory obligations the failure by Novar to make recommendations or provide assistance shall not give rise to any liability to Novar.

13. LAWS.
a) Buyer will comply with all applicable laws, regu¬lations, and ordinances of any governmental authority in any country having proper jurisdiction, including, without limitation, those laws of the United States or other countries that regulate the import or export of the goods provided by Novar and shall obtain all necessary import/export licenses in connection with any subsequent import, export, re-export, transfer, and use of all goods, technology, and software purchased, licensed, and received from Novar. Unless otherwise mutually agreed in writing, Buyer agrees that it will not use or permit third parties to use the goods in connection with any activity involving nuclear fission or fusion, any use or handling of any nuclear material, or any nuclear, chemical, or biological weapons.
b) Goods and services delivered by Novar hereunder will be produced and supplied in compliance with all applicable laws and regulations in the Federal Republic of Germany. Buyer confirms that it will ensure that all goods are properly installed and used in accordance with the applicable safety at work laws and regulations, and Buyer will indemnify Novar in respect of any costs, claims, actions or liability arising out of that Act, or otherwise arising out of the supply by Buyer or use by others of the goods, unless this is not caused by Buyer's failure.

14. PRECLUSION AGAINST SETOFF.
Buyer is only entitled to set off any amount against any amount due or to become due from Novar to Buyer or its affiliates that are undisputed or final absolute.

15. WEEE.
a) Prices do not include the costs of recycling goods covered by the European WEEE Directive 2002/96/EC and such costs may be added to the prices quoted.
b) Unless a charge has been made therefore under section 15 a above, if the provisions of the WEEE Directive 2002/96/EC as implemented in any local jurisdiction apply to goods, the financing and organisation of the disposal of waste electrical and electronic equipment are with the exception of goods which are b2c as per Novar catalogue the responsibility of the Buyer who herewith accepts this responsibility, and Buyer will indemnify Novar in respect of all such liabilities. The Buyer will handle the collection, processing and recycling of the goods in accordance with all applicable laws and regulations, and shall pass on this obligation to the final user of the goods. Failure by the Buyer to comply with these obligations may lead to the application of criminal sanctions in accordance with local laws and regulations.

16. APPLICABLE LAW.
These Terms and Conditions are subject to the Laws of the Federal Republic of Germany. These terms and conditions are excluded from the United Nations Convention on Contracts for the International Sale of Goods, 1980, and any successor thereto. The competent court at the seat of Novar will have exclusive jurisdiction to adjudicate any dispute related to these terms and conditions.

17. INDEMNIFICATION.
Buyer shall indemnify Novar for all costs and damages, including attorneys' fees, suffered by Novar as a result of Buyer's culpable actual or threatened breach of these terms and conditions.

18. MISCELLANEOUS.
a) The parties may exchange confidential information during the performance or fulfilment of any supply. All confidential information shall remain the property of the disclosing party and shall be kept confidential by the receiving party for a period of 10 years following the date of disclosure. These obligations shall not apply to information which is: (i) publicly known at the time of disclosure or becomes publicly known through no fault of recipient, (ii) known to recipient at the time of disclosure through no wrongful act of recipient, (iii) received by recipient from a third party without restrictions similar to those in this section, or (iv) independently developed by recipient. Each party shall retain ownership of its confidential information, including without limitation all rights in patents, copyrights, trademarks and trade secrets. A recipient of confidential information may not disclose such confidential information without the prior written consent of the disclosing party, provided that Novar may disclose confidential information to its affiliated companies in the sense of §§15ff AktG, and its and their employees, officers, consultants, agents, and contractors.
b) These terms and conditions (including those agreed separately in writing) constitute the entire agreement of Novar and Buyer, superseding all prior agreements or understandings, written or oral, and cannot be amended except by a mutually executed writing.
c) Buyer may not assign any rights or duties hereunder without Novar's written prior consent. Novar may subcontract its obligations hereunder without Buyer's consent. No representation, warranty, course of dealing, or trade usage not contained or expressly set forth herein will be binding on Novar.
d) Headings and captions are for convenience of reference only and do not alter the meaning or interpretation of these terms and conditions.
e) No failure by Novar to enforce at any time for any period the provisions hereof shall be construed as a waiver of such provision or of the right of Novar to enforce thereafter each and every provision.
f) In the event any provision herein is determined to be illegal, invalid, or unenforceable, the validity and enforceability of the remaining provisions shall not be affected and, in lieu of such provision, a provision as similar in terms as may be legal, valid, and enforceable shall be added hereto.
g) Provisions herein which by their very nature are intended to survive termination, cancellation, or completion of supply shall survive such termination, cancellation, or completion.
h) All stenographic and clerical errors are subject to correction.
i) These terms and conditions shall confer no benefit on any third party.

19. LANGUAGE
The German language version of these terms and conditions will prevail in case of conflict with any translations provided for convenience purposes.

Neuss,
Dezember 2010

Notes

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