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Decades of quality from Austria!

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STAATLICH AUSGEZEICHNETES UNTERNEHMEN

SIHGA®

MONITORIX®

SYSTEM SOLUTION FOR MOISTURE MONITORING

©sps-architekten zt gmbh

From specialists for specialists.

The SIHGA® Monitorix® catalogue

Personal catalogue copy for:

SIHGA® provides innovative construction technology and support for the future

S	SICHERHEIT	SECURITY
I	IM	IN
H	HOLZBAU	WOOD CONSTRUCTION
G	GARANTIERT	GUARANTEES
A	AUSSERGEWÖHNLICHES	EXTRAORDINARY RESULTS

WHY MOISTURE MONITORING?













WHY MOISTURE MONITORING?

The importance of a digital sensor system for permanent moisture monitoring in timber and mineral construction.

Moisture poses a considerable risk in building structures, both in timber and mineral construction. It can lead to structural damage, health problems and long-term loss of value. A digital sensor system for permanent moisture monitoring offers an innovative solution to minimize these risks and ensure the longevity and safety of buildings.

1. Importance of moisture control in timber and mineral construction

1.1. Risks due to moisture

Mold formation: Moisture encourages the growth of mold, which weakens the material structure in both timber and mineral construction and is harmful to health.

Material destruction:

Timber construction: Wood-destroying fungi and insects such as termites and beetles can cause considerable damage to the wood.

Mineral construction: Moisture can lead to efflorescence, cracks and spalling of plaster or concrete.

Risk of warping and deformation:

Timber construction: Swelling and shrinkage of the wood due to moisture.

Mineral construction: Moisture penetration can lead to cracks and spalling that impair structural integrity.

1.2. Long-term effects

Structural integrity: Permanently high moisture levels can impair the load-bearing capacity and stability of both timber and mineral constructions.

Loss of value: Damage caused by moisture leads to costly repairs and reduces the value of the building.

Health risks: Mold and fungal infestation can cause allergies and respiratory diseases.

2. Advantages of a digital sensor system

2.1. Permanent monitoring

Continuous data acquisition: A digital sensor system monitors the humidity around the clock and provides continuous data on the condition of the materials.

Early warning system: Real-time data enables the early detection of problems before significant damage occurs.

2.2. Precision and accuracy

Precise measurements: Digital sensors offer precise measurements of humidity values that go beyond conventional methods.

Data recording: Long-term records allow trends to be analyzed and problematic patterns to be identified.

2.3. Automation and integration

Ease of maintenance: Automated systems reduce the need for manual inspections and maintenance, which saves time and money.

3. Implementation of a digital sensor system

3.1. Selection of sensors

Types of sensors: Selection of suitable moisture sensors that are optimized for timber and mineral construction.
Positioning: Strategic placement of sensors at critical points such as foundations, walls and roofs.

3.2. Data management

Data transmission: Use of wireless technologies to transmit measurement data to central monitoring systems (ROOF IOT).
Data analysis: Use of software solutions for the analysis and visualization of humidity data.

3.3. Alarm and intervention systems

Real-time alarms: Setting up alarm systems that automatically trigger warnings if critical humidity values are exceeded.

4. Economic aspects

4.1. Cost-benefit analysis

Investment costs: Initial costs for the installation of the sensor system.
Long-term savings: Reduced repair costs, extended service life of the building and increased value retention thanks to early problem detection and rectification.

4.2. Funding opportunities

State subsidies: Opportunities to take advantage of subsidies and tax incentives for sustainable and innovative construction.
Insurance discounts: Potential discounts on insurance premiums due to demonstrably increased safety measures.

5. Case studies and success stories

5.1. Example 1: Residential building in northern Germany

Problem definition: Recurring moisture problems in an older wooden house.
Solution: Installation of a digital sensor system for permanent monitoring.
Results: Early detection and elimination of moisture sources, prevention of mold growth and wood damage.

5.2. Example 2: New construction of an office building

Problem definition: High demands on building safety and integrity.
Solution: Integrated moisture sensor system included in construction planning right from the start.
Results: Stable moisture values, prevention of structural damage, positive feedback from users.

5.3. Example 3: Renovation of a historic building

Problem definition: Moisture damage to the fabric of a historic building.
Solution: Use of a digital sensor system to monitor the moisture values during and after the refurbishment.
Results: Successful remediation, long-term monitoring to prevent further damage.

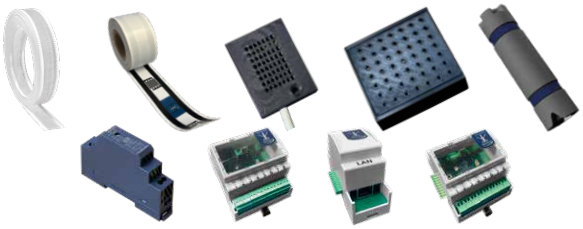
6. Conclusion

A digital sensor system for permanent moisture monitoring is a sensible investment in both timber and mineral construction. Continuous monitoring enables the early detection of moisture problems, which can prevent significant damage and extend the service life and value of structures. By integrating modern technologies and automating monitoring and control processes, such a system makes a significant contribution to safety and sustainability in the construction industry.

MONITORIX®

Digital building protection - the early warning system for moisture ingress

Advantages



- Innovative early warning system for moisture and water ingress in timber construction/solid building components
- The inconspicuous measuring system can be integrated both in new buildings and subsequently integrated into renovation measures
- Retrofitting is also possible (plaster-over system)
- With Monitorix®, damage can be detected at an early stage, thus preventing cost-intensive renovation measures
- Flexible use in roofs, walls, façades and wet rooms
- Reliable monitoring of all trades
- Tested technology
- Notification with exact location of the damage

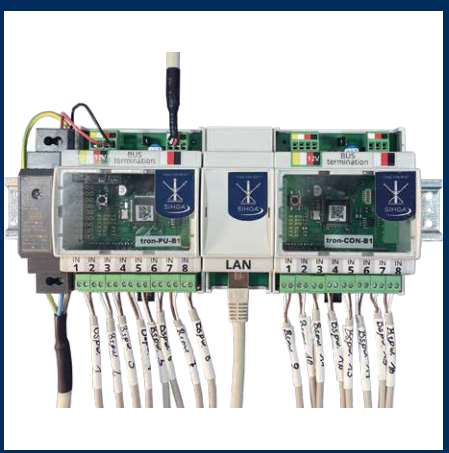
MADE IN AUSTRIA

Big plus for you
In a property monitored with Monitorix® , there will hardly be any cases that you will have to rectify under warranty.
And for the life of the building!

The areas of application of the Monitorix®

The Monitorix® can be integrated into the intelligent planning for new buildings or retrofitted for renovations and special projects.
Flat roofs: detached houses, halls | **Wet rooms:** bathrooms, kitchens, laundry rooms | **Timber construction/solid construction:** wherever water flows.







RELIABLE CONTROL

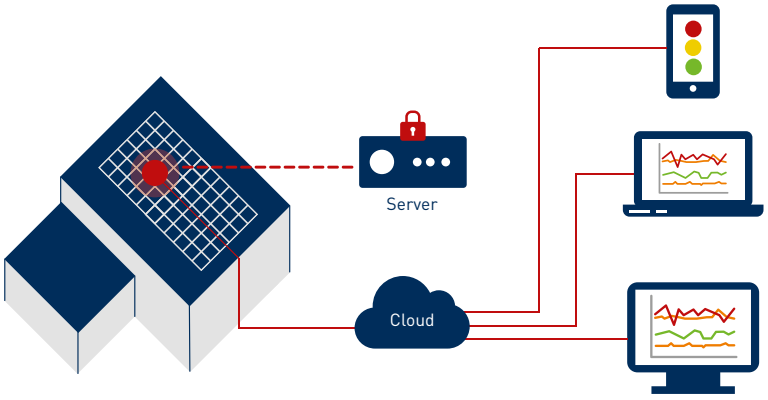
LEGAL CERTAINTY

EARLY DETECTION

INSURANCE BENEFIT

How the Monitorix® works

The sensors are installed in the desired area of the building by a professional. These transmit their measured values continuously to a terminal, which is located in a protected technical room. The data is evaluated here. The owner can immediately see the current status via a traffic light system - in the event of damage, the exact location and time of occurrence of the damage is reported. Detailed data, including historical data, can be accessed via a cloud server.



1 Permanent, comprehensive data collection

2 Data transmission in to server in real time

3 Automatic data preparation

STAINLESS STEEL

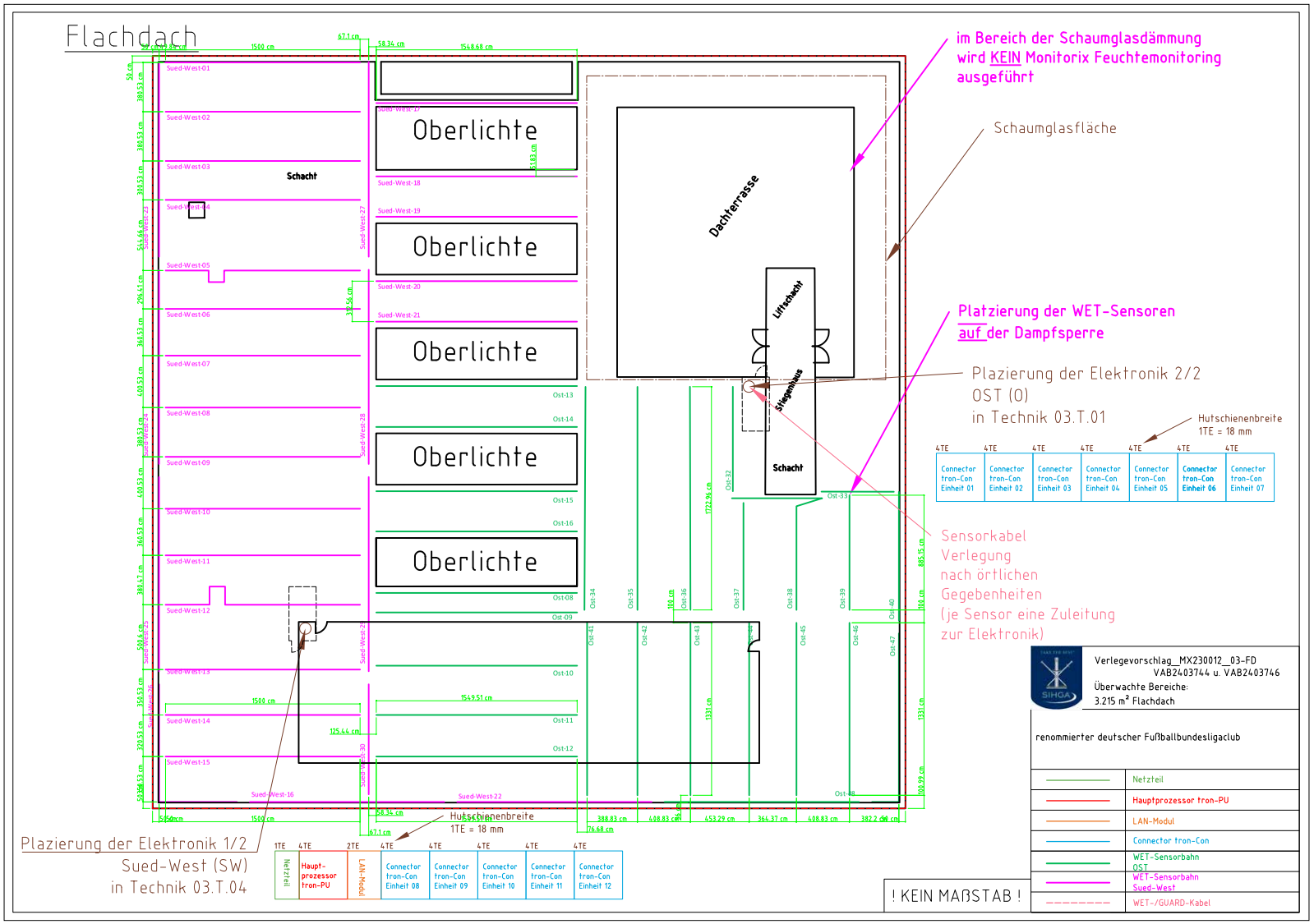
NOT AN ACCELERANT

WATER RESISTANT

FROM THE FIELD

Renowned German soccer club in Leipzig (approx. 3,200 m² flat roof)

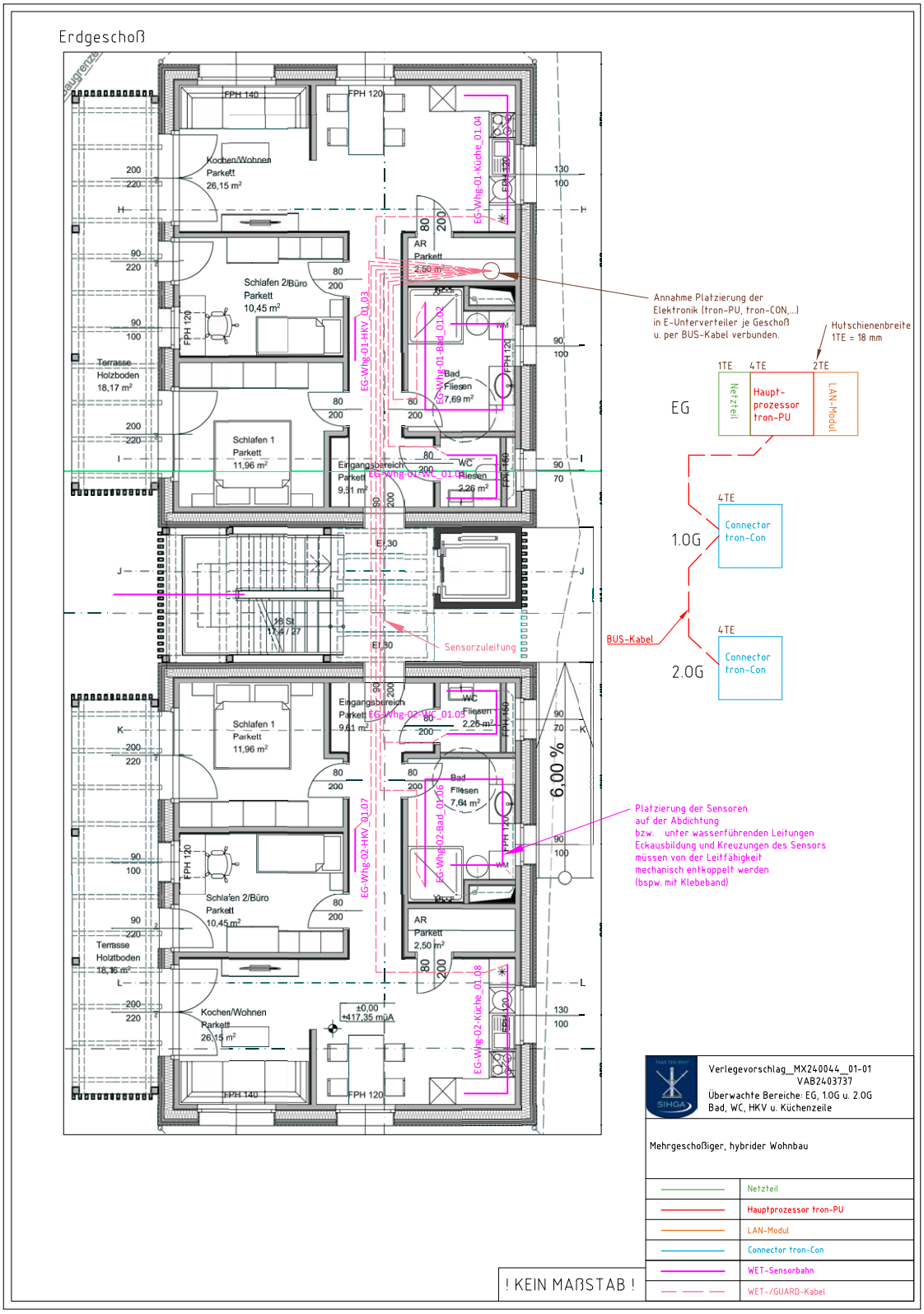



Flachdach
Oberlichte
Oberlichte
Oberlichte
Oberlichte
Schacht
Dachterrasse
Liftschacht
Stiegenhaus
Schacht
im Bereich der Schaumglasdämmung wird KEIN Monitorix Feuchtemonitoring ausgeführt
Schaumglasfläche
Platzierung der WET-Sensoren auf der Dampfsperre
Plazierung der Elektronik 2/2
OST (O)
in Technik 03.T.01
Hutschienenbreite
1TE = 18 mm
Connector tron-Con Einheit 01
Connector tron-Con Einheit 02
Connector tron-Con Einheit 03
Connector tron-Con Einheit 04
Connector tron-Con Einheit 05
Connector tron-Con Einheit 06
Connector tron-Con Einheit 07
Sensorkabel
Verlegung
nach örtlichen
Gegebenheiten
(je Sensor eine Zuleitung
zur Elektronik)
Verlegevorschlag_MX230012_03-FD
VAB2403744 u. VAB2403746
Überwachte Bereiche:
3.215 m² Flachdach
renommierter deutscher Fußballbundesligaclub
Netzteil
Hauptprozessor tron-PU
LAN-Modul
Connector tron-Con
WET-Sensorbahn OST
WET-Sensorbahn Sued-West
WET-/GUARD-Kabel
Plazierung der Elektronik 1/2
Sued-West (SW)
in Technik 03.T.04
Hutschienenbreite
1TE = 18 mm
Netzteil
Haupt-prozessor tron-PU
LAN-Modul
Connector tron-Con Einheit 08
Connector tron-Con Einheit 09
Connector tron-Con Einheit 10
Connector tron-Con Einheit 11
Connector tron-Con Einheit 12
! KEIN MAßSTAB !

FROM THE FIELD

Multi-storey, hybrid residential building (wet rooms, WC, kitchenette and heating circuit distributor)




Erdgeschoß
Baugrenze
Kochen/Wohnen
Parkett
26,15 m²
Schlafen 2/Büro
Parkett
10,45 m²
Terrasse
Holzboden
18,17 m²
Schlafen 1
Parkett
11,96 m²
Eingangsbereich
Parkett
9,31 m²
WC
Fliesen
2,26 m²
Bad
Fliesen
7,69 m²
AR
Parkett
2,50 m²
EI 30
Sensorzuleitung
Eingangsbereich
Parkett
9,61 m²
Schlafen 1
Parkett
11,96 m²
WC
Fliesen
2,26 m²
Bad
Fliesen
7,64 m²
Schlafen 2/Büro
Parkett
10,45 m²
AR
Parkett
2,50 m²
Terrasse
Holzboden
18,16 m²
Kochen/Wohnen
Parkett
26,15 m²
±0,00
+417,35 müA
6,00 %
EG-Whg-01-Küche_01.04
EG-Whg-01-HKV_01.03
EG-Whg-01-Bad_01.02
EG-Whg-01-WC_01.01
EG-Whg-02-WC_01.09
EG-Whg-02-Bad_01.06
EG-Whg-02-HKV_01.07
EG-Whg-02-Küche_01.08
FPH 140
FPH 120
FPH 160
FPH 100
Annahme Platzierung der
Elektronik (tron-PU, tron-CON,...)
in E-Unterverteiler je Geschoß
u. per BUS-Kabel verbunden.
Hutschienenbreite
1TE = 18 mm
1TE
4TE
2TE
EG
Netzteil
Haupt-
prozessor
tron-PU
LAN-Modul
4TE
1.0G
Connector
tron-Con
BUS-Kabel
4TE
2.0G
Connector
tron-Con
Platzierung der Sensoren
auf der Abdichtung
bzw. unter wasserführenden Leitungen
Eckausbildung und Kreuzungen des Sensors
müssen von der Leitfähigkeit
mechanisch entkoppelt werden
(bspw. mit Klebeband)
Verlegevorschlag_MX240044_01-01
VAB2403737
Überwachte Bereiche: EG, 1.0G u. 2.0G
Bad, WC, HKV u. Küchenzeile
Mehrgeschoßiger, hybrider Wohnbau
Netzteil
Hauptprozessor tron-PU
LAN-Modul
Connector tron-Con
WET-Sensorbahn
WET-/GUARD-Kabel
! KEIN MAßSTAB !

FROM THE FIELD

HTK-Cube - Holz Technikum Kuchl
(89 wet rooms in modular construction)

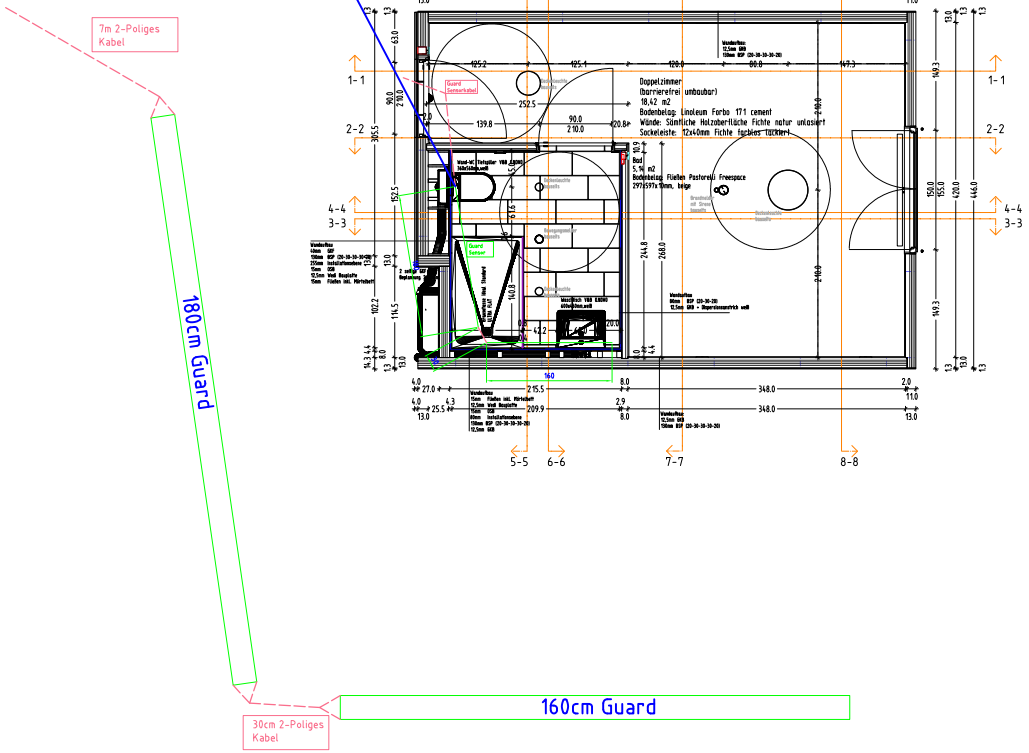


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Anschluss des Sensorkabels am 180cm langen Guard-Sensor, danach Weiterleitung zu Verteiler-Box

160cm Guard; 30cm Verbinder;180cm Guard; 7m Sensorkabel

Materialsumme:
-42,2m Guard
-72 Stk Guard-Klemmen
-inkl. Kabel und Befestigungsmaterial



Verlegevorschlag_MX230003_01-01
Überwachte Bereiche:
89 Nasszellen

Holz Technikum Kuchl
BVH HKT-Cube Internat

	Netzteil
	Hauptprozessor tron-PU
	LAN-Modul
	Connector tron-Con
	WET-Sensorbahn
	WET-/GUARD-Kabel
	CORE Holzkernfeuchtesensor
	DIGITAL-Sensor Feuchte- u. Tempsensor
	CORE-/DIGITAL-Kabel

! KEIN MAßSTAB !

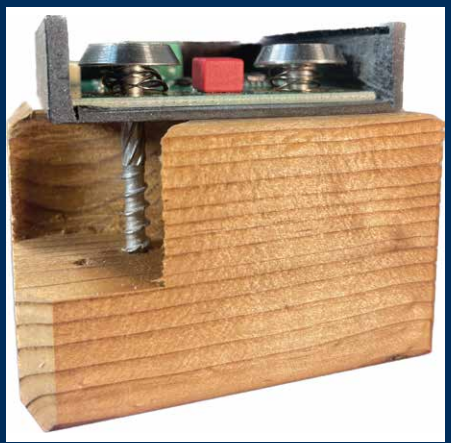
FROM THE FIELD

Wooden traffic sign bridge (30 m length)



- **Monitoring of wood core moisture at all neuralgic points**
- **Integration of sensor strips in the glued laminated timber**





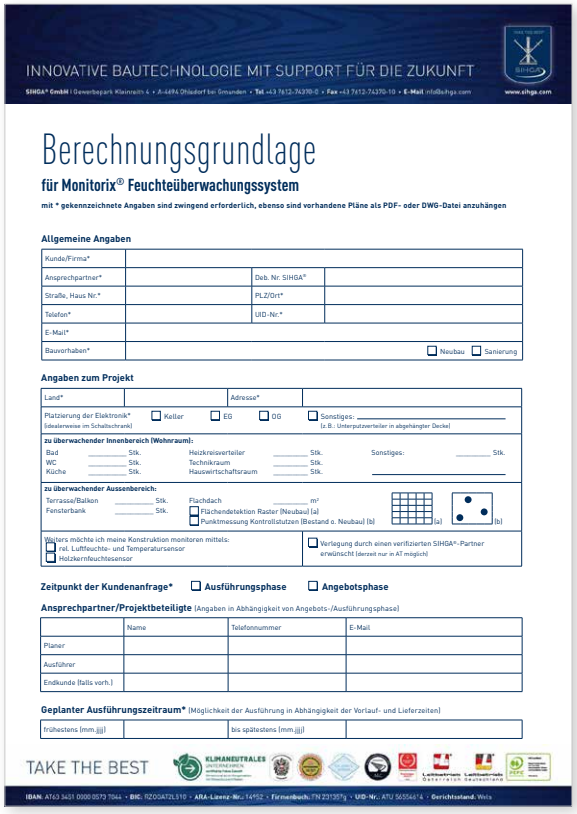


SIHGA MONITORIX® PARTNER SYSTEM

Become part of the success story!
Further information at: **monitoring@sihga.com**

Only those who are courageous and break new ground will succeed in changing the world!

SIHGA MONITORIX® CALCULATION



INNOVATIVE BAUTECHNOLOGIE MIT SUPPORT FÜR DIE ZUKUNFT

SIHGA® GmbH | Gewerbepark Klainreith 4 • A-4494 Ohlsdorf bei Grnunden • Tel. +43 7612-74310-0 • Fax +43 7612-74310-10 • E-Mail: info@sihga.com www.sihga.com

Berechnungsgrundlage

für Monitorix® Feuchteüberwachungssystem

mit * gekennzeichnete Angaben sind zwingend erforderlich, ebenso sind vorhandene Pläne als PDF- oder DWG-Datei anzuhängen

Allgemeine Angaben

Kunde/Firma*			
Ansprechpartner*		Deb. Nr. SIHGA*	
Straße, Haus Nr.*		PLZ/Ort*	
Telefon*		UID-Nr.*	
E-Mail*			
Bauvorhaben*	☐ Neubau ☐ Sanierung		

Angaben zum Projekt

Land*		Adresse*	
Platzierung der Elektronik* (idealerweise im Schaltschrank)	☐ Keller ☐ EG ☐ OG	☐ Sonstiges: (z.B.: Unterputzverteiler in abgehängter Decke)	
zu überwachender Innenbereich (Wohnraum): Bad ____ Stk., WC ____ Stk., Küche ____ Stk.; Heizkreisverteiler ____ Stk., Technikraum ____ Stk., Hauswirtschaftsraum ____ Stk.; Sonstiges: ____ Stk.			
zu überwachender Aussenbereich: Terrasse/Balkon ____ Stk., Fensterbank ____ Stk.; Flachdach ____ m²; ☐ Flächendetektion Raster (Neubau) (a); ☐ Punktmessung Kontrollschutzen (Bestand o. Neubau) (b)			
Weiters möchte ich meine Konstruktion monitoren mittels: ☐ rel. Luftfeuchte- und Temperatursensor ☐ Holzkernfeuchtesensor		☐ Verlegung durch einen verifizierten SIHGA®-Partner erwünscht (derzeit nur in AT möglich)	

Zeitpunkt der Kundenanfrage* ☐ **Ausführungsphase** ☐ **Angebotsphase**

Ansprechpartner/Projektbeteiligte (Angaben in Abhängigkeit von Angebots-/Ausführungsphase)

	Name	Telefonnummer	E-Mail
Planer			
Ausführer			
Endkunde (falls vorh.)			

Geplanter Ausführungszeitraum* (Möglichkeit der Ausführung in Abhängigkeit der Vorlauf- und Lieferzeiten)

frühestens (mm.jjjj)		bis spätestens (mm.jjjj)	

TAKE THE BEST

IBAN: AT63 3431 0000 0573 7044 • BIC: RZOSAT2L310 • ARA-Lizenz-Nr.: 14452 • Firmenbuch: FN 231357g • UID-Nr.: ATU 56556614 • Gerichtsstand: Wels

For a qualified offer, we request detailed information on your project by means of a completed calculation basis.

You can find a form and tender documents on our website.

1 - Send floor plan

You send us the floor plan of your project, ideally as a DWG file and the desired installation location (flat roof, wet room, ...).

2 -Intelligent planning

We plan your project and determine the ideal laying grid.

3 - Offer

You will receive your all-inclusive offer.

4 - Assembly

Our "Technician on Tour" team provides support with professional installation.

5 - Moisture monitoring

Your SIHGA® Monitorix® is ready for real-time moisture measurement.



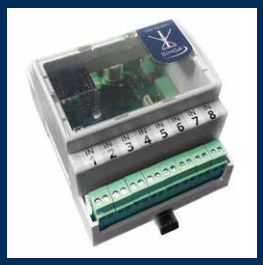






Sensor types

WET	20
GUARD	24
DIGITAL	28
CORE	32





Evaluation electronics

Processor unit	36
Connector	40

WET sensor strip



Monitorix® WET sensor strip

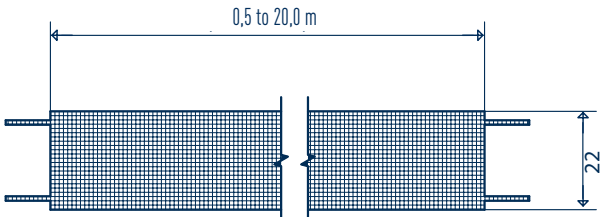


SIHGA® Feature	YOUR Benefit
Two sensor wires embedded in plastic fabric	The robust processing makes the sensor strip particularly suitable for practical use on the construction site
Insert length from 0.5 - 20 m	Enables a high degree of flexibility and makes work easier
Tool-free mounting on sensor terminal	By sliding the sensor wires, a connection to the sensor terminal can be established without additional tools
Delivery in handy cardboard boxes	Easy installation of the sensor strips using system packaging
Resistances from wet to dry	Due to the fixed spacing of the wires, an exact diagram can be displayed in the cockpit using logic





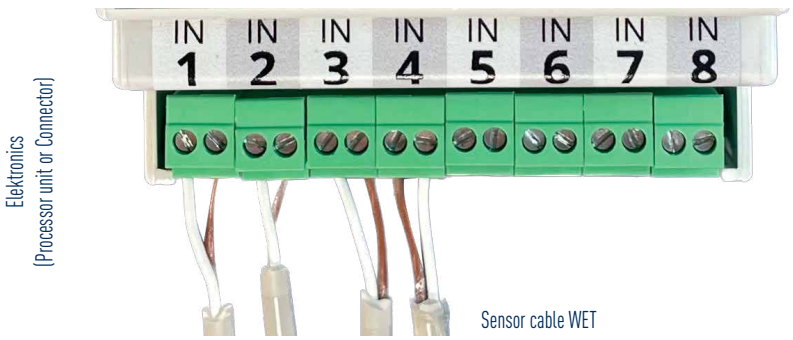
SIHGA®		Dimension		Effective length	Connections		Measurement type
montagepack		Width	Length	per slot	Sensor cable	Clamp WET	Resistance
Art. No.	PU	[mm]	[m]	min - max [m]	2 x 0,25 mm²	Through connector	kOhm
TT60286	1	**22**	**25**	0,5 - 20	2-pole	2 Pcs.	0 - 300
TT60289	1	**22**	**100**	0,5 - 20	2-pole	2 Pcs.	0 - 300



Sensor strip connection



Electronics connection



SIHGA® TIP:

Sensor strips can also be divided at one and the same slot and the transitions connected with sensor cable WET.

Necessary accessories
(Except for expansion)



Monitorix® Processor unit (Art. No.: TT60001)

SIHGA® Feature	YOUR Benefit
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® Cockpit via the LAN-module



Monitorix® LAN-module (Art. No.: TT60011)

Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)

230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply



Monitorix® Sensor cable (Art. No.: TT60066 or TT60069)

Connecting cable between electronics and WET/GUARD sensor strip	The pulse from the electronics is transferred to the sensor strip and the resistance measurement is transmitted to the cockpit



Monitorix® Clamp WET (Art. No.: TT60122 or TT60123)

Connection terminal between WET sensor track and WET/-GUARD sensor cable	Tool-free connection of WET sensor strip and WET/-GUARD sensor cable



Monitorix® Gel box (Art. No.: TT60332 or TT60336)

Moisture protection for terminal connection WET	Immediately ready for use and accessible again without special tools



Monitorix® Checkbox (Art. No.: TT60346 or TT60356)

Terminating resistor for closing the sensor track	The functionality of the WET sensor track can be checked either in the cockpit or on site using a multimeter

SIHGA® TIP:

Secure the position using adhesive tape (see installation instructions or installation video).

GUARD sensor strip



Monitorix® GUARD sensor strip

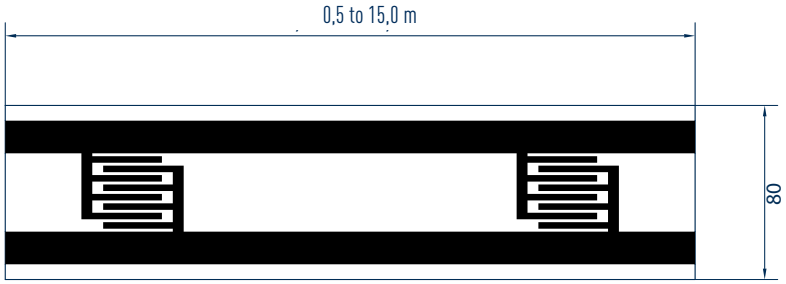


SIHGA® Feature	YOUR Benefit
The impedance in components is transmitted to the electronics by transmitting pulses	A wide range of units is covered to illustrate the explanation of vapor diffusion in building structures
Self-adhesive, water-repellent cellulose strip with printed graphite sensors	Quick installation and processing thanks to factory-applied adhesive
Slim material thickness with high efficiency	Sensor membranes can be embedded in laminated wood
Measuring the impedance of structurally demanding superstructures	Possibility of moisture monitoring on constructions with challenging features
Rust-resistant Clamp as a connecting element	Clamping the toothing to the sensor strip ensures a static connection to the sensor cable

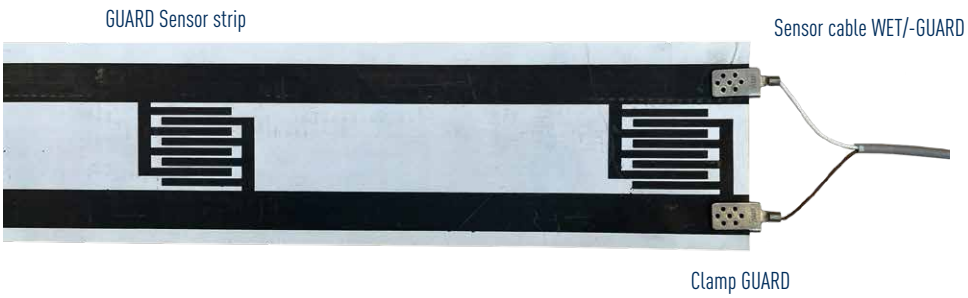




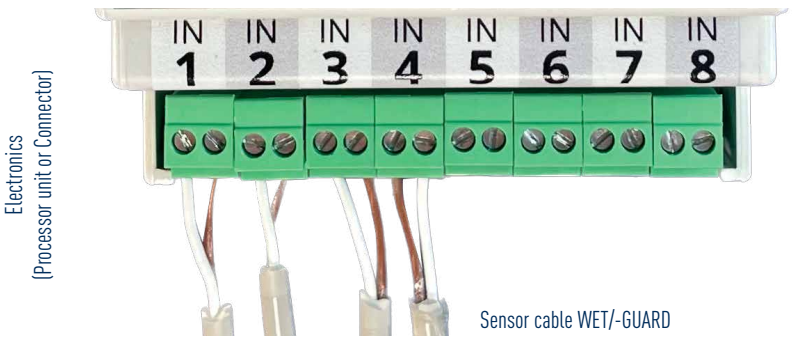
SIHGA®		Dimension		Effective length	Connections		Measurement type
montagepack		Width	Length	per slot	Sensor cable	Sensor clamp	Impedance
Art. No.	PU	[mm]	[m]	min - max [m]	2 x 0,25 mm²	Clamp GUARD	Units
TT60056	1	**80**	**25**	0,5 - 15	2-pole	2 Pcs.	0 - 65.000
TT60059	1	**80**	**250**	0,5 - 15	2-pole	2 Pcs.	0 - 65.000



Sensor strip connection



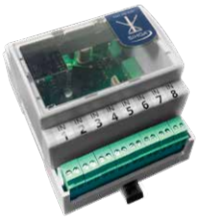
Electronics connection



SIHGA® TIP:

It is recommended that the GUARD sensor membrane is not used in combination with wet fills during installation. In this case, however, the WET sensor track can be used.

Necessary accessories (Except for expansion)



SIHGA® Feature	YOUR Benefit
Monitorix® Processor unit (Art. No.: TT60001)	
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® Cockpit via the LAN-module



Monitorix® LAN-module (Art. No.: TT60011)	
Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)	
230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply



Monitorix® Sensor cable (Art. No.: TT60066 or TT60069)	
The Processor unit and the entire project are supplied with power via the Power supply	The pulses from the electronics are transferred to the sensor track and the impedance is transmitted to the cockpit



Monitorix® Clamp GUARD (Art. No.: TT60022 or TT60023)	
Connection terminal between GUARD sensor track and WET/-GUARD sensor cable	Sensor clamp connects GUARD sensor track and sensor cable-WET/-GUARD

SIHGA® TIP:

The total length of the sensor cables must not exceed 100 meters per slot.

DIGITAL-sensor



Monitorix® DIGITAL-sensor



SIHGA® Feature	YOUR Benefit
Compact design in plastic	Very flexible installation due to small size
Pre-contacted screw terminal	The sensor cables can be mounted on the terminal so that it is not necessary to open the housing
Measures relative humidity and room temperature	In combination with GUARD or WET, you have more informative power when analyzing the object data
Can be installed in a star-shaped arrangement	The LIN BUS cable allows you to cover up to 8 sensors with one electronic connection



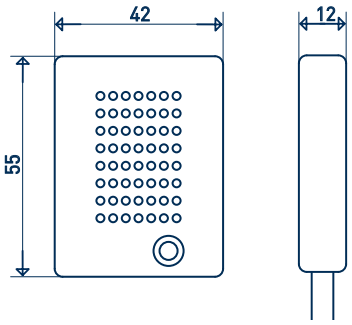


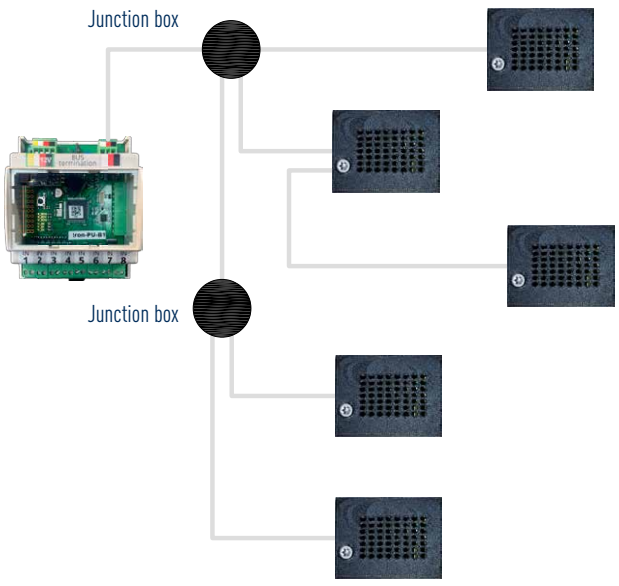
SIHGA®		Dimension	Assembly		Connections	
montagepack		L x W x H	Drill hole	Processor unit / Connector	Sensor cable	Connection cable
Art. No.	PU	[mm]	[mm]	LIN-BUS	2 x 2 x 0,8 mm²	Assembly
TT60031	1	**42 x 55 x 12**	ø 5	1	4-pole	Screw terminal

Measurement type

Measuring range

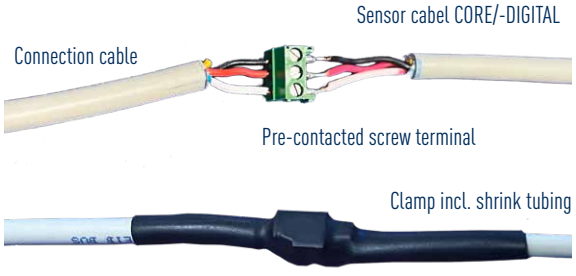
rel. humidity	Temperature
0 - 100%	-40 to 100°C





Star-shaped arrangement

Sensor connection



Electronics connection



Sensor cabel CORE/-DIGITAL

SIHGA® TIP:

To prevent possible corrosion of the screw terminal and strands, a shrink sleeve is included in the scope of delivery.

Necessary accessories
(Except for expansion)



SIHGA® Feature	YOUR Benefit
Monitorix® Processor unit (Art. No.: TT60001)	
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® Cockpit via the LAN-module



Monitorix® LAN-module (Art. No.: TT60011)	
Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)	
230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply



Monitorix® Sensor cable (Art. No.: TT60216)	
4-pole connection cable between electronics, CORE and DIGITAL sensors	Up to 8 sensors per Processor unit or connector can be installed in a star-shaped arrangement using the LIN BUS line

Optional accessories



Monitorix® Connector (Art. No.: TT60081)	
Always expands the sensor slots of the Processor unit many times over	A Processor unit can be expanded by up to 13 connectors via a plug connection or BUS line (with local disconnection)



Monitorix® BUS-cable (Art. No.: TT60076)	
4-pole CAN bus cable	Locally separated electronics can be connected in series via CAN BUS cable

SIHGA® TIP:

The sum of the sensor cables arranged in a star configuration must not exceed a total length of 100 meters per Processor unit or connector.

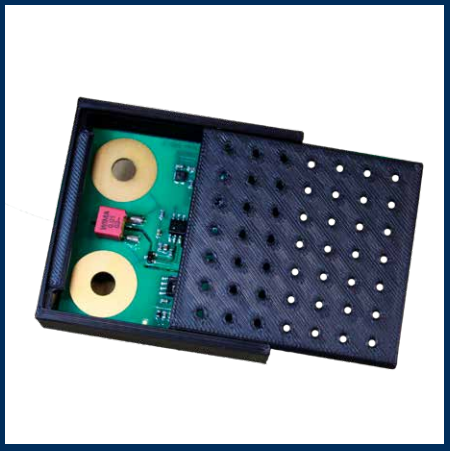
CORE sensor

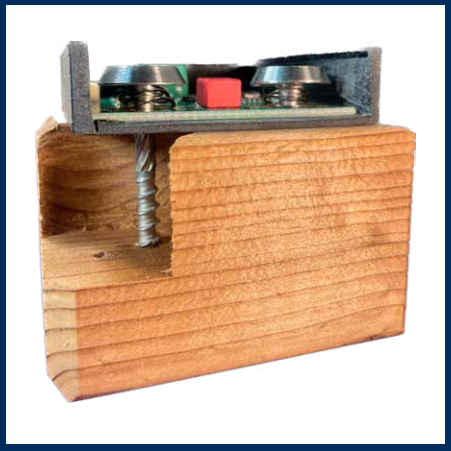


Monitorix® CORE sensor



SIHGA® Feature	YOUR Benefit
Plastic housing with integrated electronics	Very easy to install due to its small size
Connection via screw terminal in the housing	The CORE sensor cables can be clamped directly to the device and connected in a star configuration
Measures relative humidity and room temperature	In combination with GUARD or WET, you have more informative power when analyzing the object data
Can be installed in a star-shaped arrangement	The LIN BUS cable allows you to cover up to 8 sensors with one electronic connection
Measurement of wood core moisture	The screws supplied are both the measuring wires and also serve as fasteners
Spring for tension-free mounting	The spring to be installed prevents screw breakage and damage to the board due to shrinkage and swelling of the wood



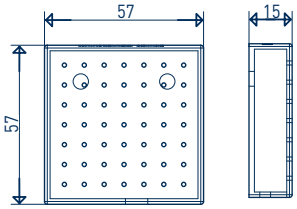


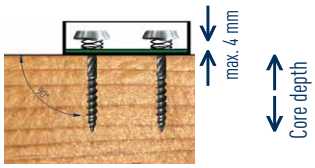
SIHGA®		Dimension	Assembly	Connections		
montagepack		L x W x H	2 holes	Processor unit / Connector	Sensor cable	Connection cable
Art. No.	PU	[mm]	[mm]	LIN-BUS	2 x 2 x 0,8 mm²	Assembly
TT60201	1	**57 x 57 x 15**	ø 6	1	4-pole	Screw terminal

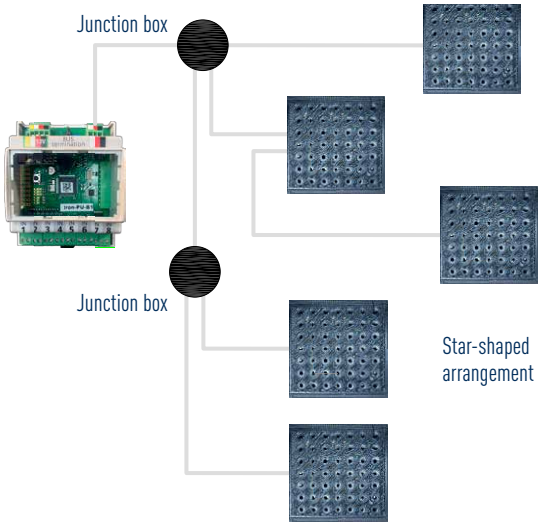
Measurement type

Measuring range

rel. humidity	Temperature
0 - 100%	-40 to 100°C





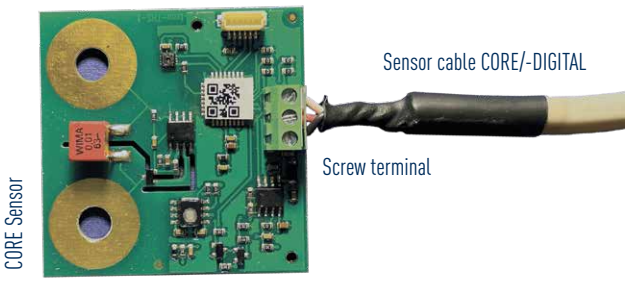


Wood core moisture

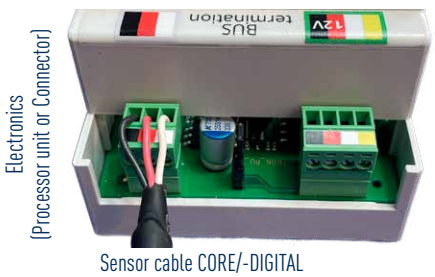
Measuring range

Core moisture	Core depth	Scope of delivery
6% - 30%	0 - 40 mm	Standard
6% - 30%	70 - 90 mm	on request

Sensor connection



Electronics connection



SIHGA® TIP:

Compress the spring to a maximum of 4 mm to avoid damage to screws and electronics due to shrinkage and swelling of the wood.

Necessary accessories
(Except for expansion)



SIHGA® Feature	YOUR Benefit
Monitorix® Processor unit (Art. No.: TT60001)	
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® Cockpit via the LAN-module



Monitorix® LAN-module (Art. No.: TT60011)	
Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)	
230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply



Monitorix® Sensor cable (Art. No.: TT60216)	
4-pole connection cable between electronics, CORE and DIGITAL sensors	Up to 8 sensors per Processor unit or connector can be installed in a star-shaped arrangement using the LIN BUS line

Optional accessories



Monitorix® Connector (Art. No.: TT60081)	
Always expands the sensor slots of the Processor unit many times over	A Processor unit can be expanded by up to 13 connectors via a plug connection or bus line (with local disconnection)



Monitorix® BUS-cable (Art. No.: TT60076)	
4-pole CAN bus cable	Locally separated electronics can be connected in series via CAN bus cable

SIHGA® TIP:

The sum of the CORE or DIGITAL sensors per Processor unit or connector must not exceed 8, but it is possible to mix them.

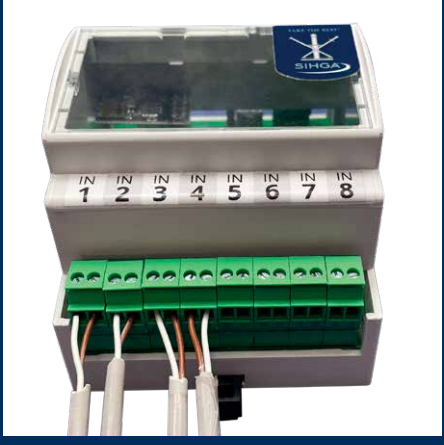
Processor unit



Monitorix® processor unit tron-PU

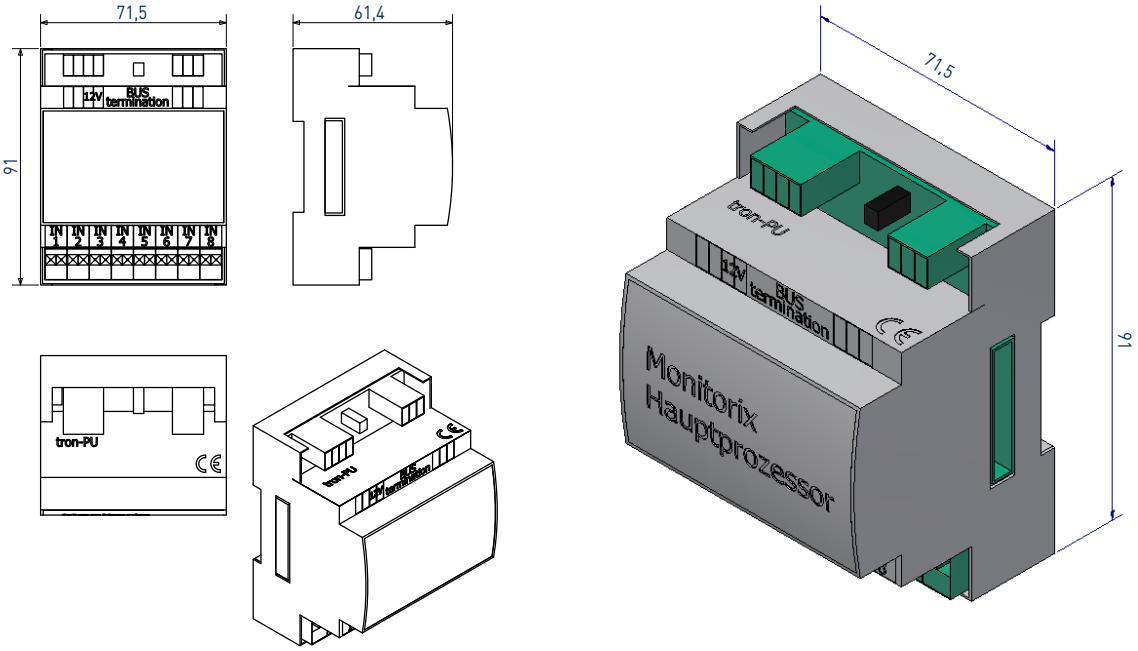


SIHGA® Feature	YOUR Benefit
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® cockpit via the LAN-module
Slot for up to 8 sensor strips (Monitorix® WET or GUARD)	Each electronic can mount up to 8 risk areas or problem areas on moisture
Space for up to 8 wood core moisture, relative humidity and temperature sensors in star connection	Ideal reference sensors for tuning the sensor paths and extended analysis in the event of moisture ingress; the core moisture of load-bearing timber components can also be monitored
Top-hat rail mounting possible	Can be mounted in a switch cabinet, flush-mounted or surface-mounted distribution board without tools
Browser-based recording in the cockpit	The cockpit can be accessed via any end device, no app or updates required
Jumper for opening or closing	Enables locally separated placement of the electronics (Processor unit and Connector)
CE-compliant	Tested quality

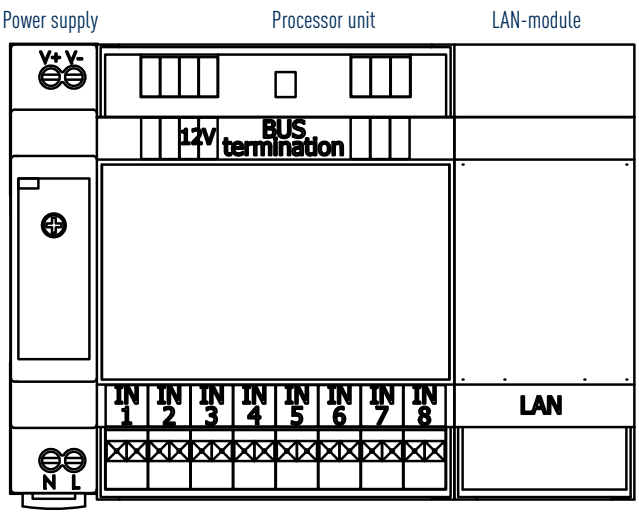




SIHGA®		Dimension	Dividing unit		Connections		
montagepack		L x B x H	Top hat rail	Connector	CORE-DIGITAL-Sensor	Sensor strip	Extension
Art. No.	PU	[mm]	1DU = 18 mm	CAN-BUS	LIN-BUS	WET	Coupling Connector
TT60001	1	**71,5 x 91 x 61,4**	4DU	1	8	8	1



Assembly sequence



SIHGA® TIP:

The hardware is only fully functional in combination with an annual software license.

Necessary accessories

SIHGA® Feature	YOUR Benefit
Monitorix® LAN-module (Art. No.: TT60011)	
Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)	
230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply



Optional accessories

Monitorix® Connector (Art. No.: TT60081)	
Always expands the sensor slots of the Processor unit many times over	A Processor unit can be expanded by up to 13 connectors via a plug connection or BUS line (with local disconnection)



Monitorix® BUS-cable (Art. No.: TT60076)	
4-pole CAN bus cable	Locally separated electronics can be connected in series via CAN BUS cable



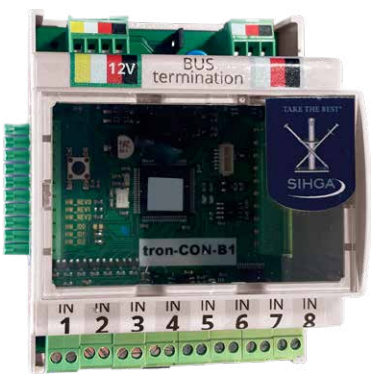
SIHGA® TIP:

Up to 13 connectors can be connected to a main processor via the LAN module, either by plug connection or CAN bus line.

Connector

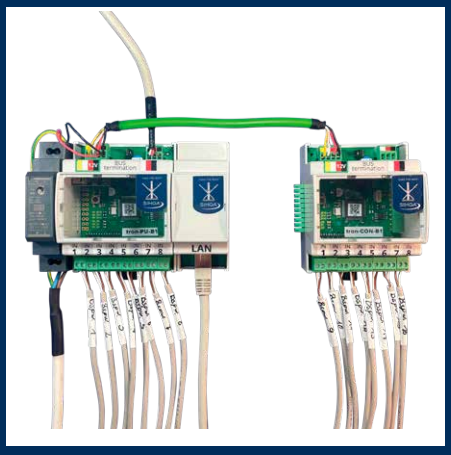


Monitorix® Connector tron-CON



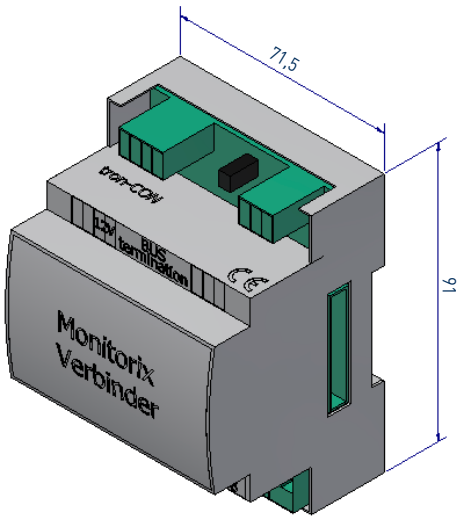
SIHGA® Feature	YOUR Benefit
Extends the sensor slots of the Processor unit many times over	A Processor unit can be extended by up to 13 connectors via plug connection or CAN bus line (with local disconnection)
Slot for up to 8 sensor strips (Monitorix® WET or GUARD)	Each electronic unit can monitor up to 8 risk areas or problem areas for moisture
Space for up to 8 wood core moisture, relative humidity and temperature sensors in star connection	Ideal reference sensors for tuning the sensor paths and extended analysis in the event of moisture ingress; the core moisture of load-bearing timber components can also be monitored
Top-hat rail mounting possible	Can be mounted in a switch cabinet, flush-mounted or surface-mounted distribution board without tools
Browser-based recording in the cockpit	The cockpit can be accessed via any end device, no app or updates required
Jumper for opening and closing	Enables locally separated placement of the electronics (Processor unit and connector)
CE-compliant	Tested quality

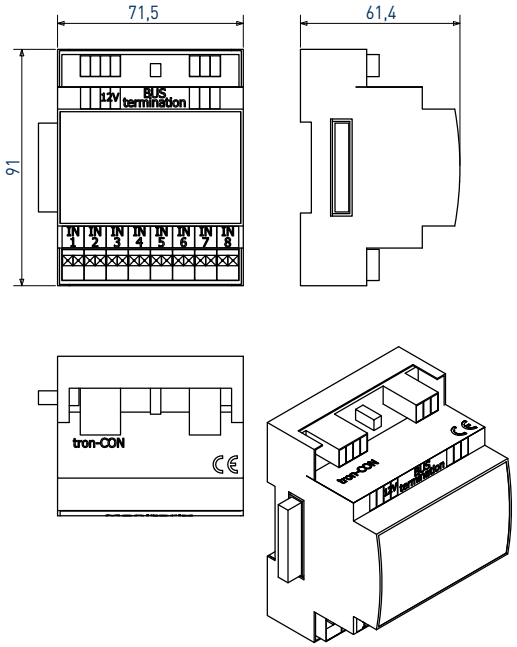




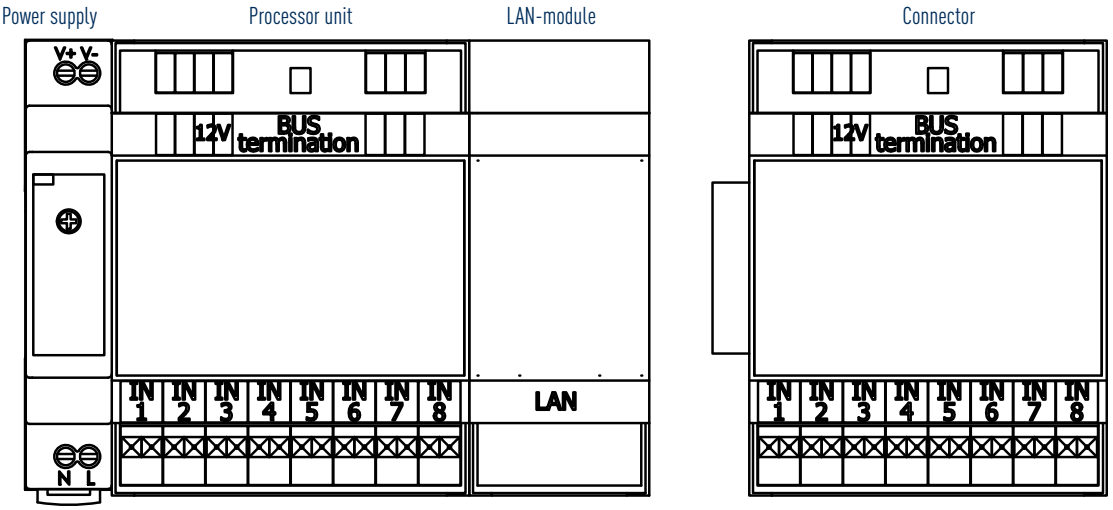
SIHGA®		Dimension	Dividing unit		Connections		
montagepack		L x W x H	Top hat rail	Main processor	CORE-DIGITAL-Sensor	Sensor strip	Extension
Art. No.	PU	[mm]	1DU = 18 mm	CAN-BUS	LIN-BUS	WET	Coupling Connector
TT60081	1	**71,5 x 91 x 61,4**	4DU	1	8	8	1

Extension	
Coupling Connector	Plug Connector
1	1





Assembly sequence



SIHGA® TIP:

When expanding the system, the connector can be plugged directly into the LAN-module or connected via the CAN bus line in the event of local disconnection.

Necessary accessories
(Except for expansion)



SIHGA® Feature	YOUR Benefit
Monitorix® Processor unit (Art. No.: TT60001)	
Evaluation electronics	Is connected to the power supply using the Power supply and connected to the Internet / Monitorix® Cockpit via the LAN-module



Monitorix® LAN-module (Art. No.: TT60011)	
Connection to the Internet via RJ45 network cable from Cat6	The Processor unit is connected to the Internet via LAN cable; Cable not included in the scope of delivery



Monitorix® Power supply (Art. No.: TT60041)	
230 V alternating current to 12 V low voltage	The Processor unit and the entire project are supplied with power via the Power supply

Optional accessories



Monitorix® BUS-cable (Art. No.: TT60076)	
4-pole CAN bus cable	Locally separated electronics can be connected in series via CAN BUS cable

SIHGA® TIP:

The network requirements can be found in the installation instructions at www.sihga.com/service/download.

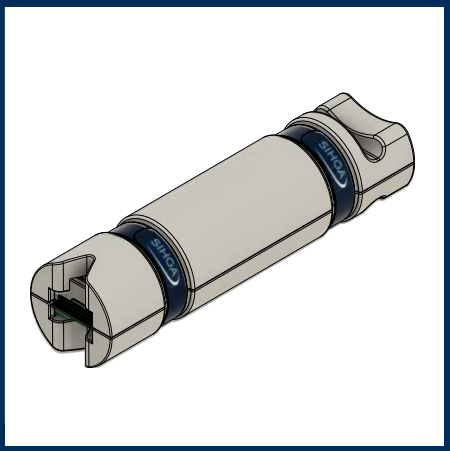
ROOF IOT



Monitorix® ROOF IOT

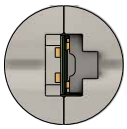


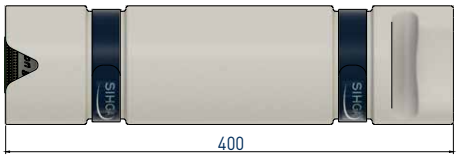
SIHGA® Feature	YOUR Benefit
EPS cylinder placed in inspection port	The ROOF IOT can be inserted and put into operation without tools
Measurement of 3 parameters	By measuring temperature, relative humidity and water level (in mm), these readings can be used to detect damage
Existing roofs or new construction	The ROOF IOT can be used both on existing flat roofs by retrofitting an inspection spigot and on new flat roofs via the inspection spigot
No cabling necessary	The ROOF IOT is battery-operated and sends the data to the software via an integrated SIM card; an automatic alarm is triggered when the battery is low

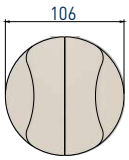




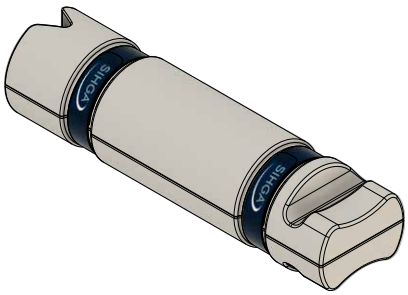
SIHGA®		Dimension	Assembly	Operating mode	Battery	
montagepack		ø x L	Control nozzle inside	Battery	Service life	Operating temperature
Art. No.	PU	[mm]	min. 110 mm	1,5 V AA	years	°C
TT60291	1	**106 x 400**	No scope of delivery	6	> 3	-20 to 60

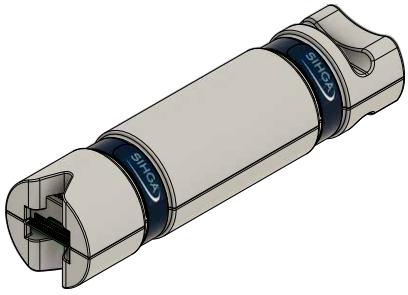












Data transmission

Transmission	Measuring interval	Transmission interval	Goal
Free network	Hours	Hours	Web application
NBIoT	6	24*	https://tagtron.sihga.com

* every 24 hours and when threshold values are exceeded

Measurement type

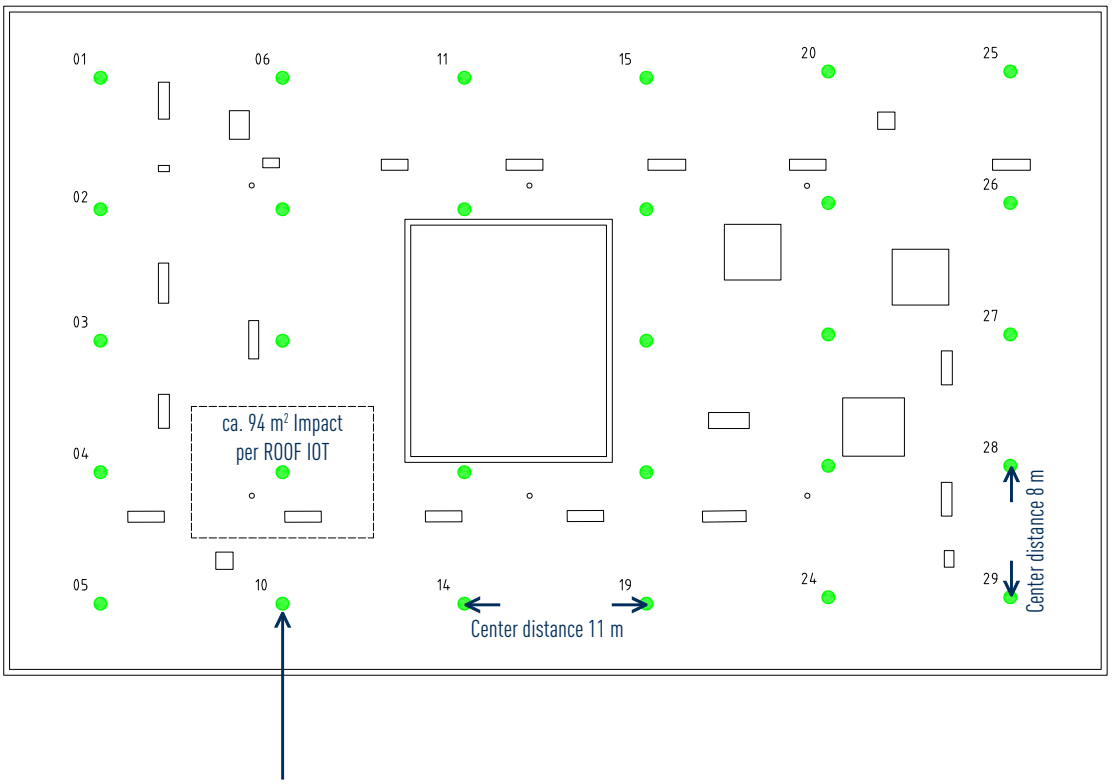
Measuring range	Water level	relative humidity		Temperature	
[mm]	Res. [mm]	Range [%]	Res. [%]	Range [°C]	Res. [°C]
0 - 12	0 / 4 / 7 / 12	0 - 100	0,1	-40 to 100	0,1

SIHGA® TIP:

When purchasing the control connection pieces, ensure that they have an internal diameter of at least 110 mm.

Application example

Flat roof (Warm roof)	Equipment	Impact	Center distances
Roof area [m²]	ROOF IOT (pcs.)	per sensor [m²]	per sensor [m]
ca. 2.700	29	ca. 94	ca. 11 x 8



ROOF IOT
Point measurement of the:
- relative humidity
- Temperature
- Water level on vapor barrier

SIHGA® TIP:

The inspection nozzle is not included in the scope of delivery.
This must be provided and pre-assembled.

Ideal for your first project



Possibilities with a Monitorix® StarterKit:

- a detached house can be completely monolithized indoors
- up to 8 problem areas can be monitored
- Leaks on smaller flat roofs can be localized down to the square metre
- only power and internet connection must be available
- An existing system can be easily expanded
- a SIHGA® Swedish meter is supplied to make measuring easier

SIHGA®			Monitorix® starter kit contains							
montagepack		Power supply	Main processor	LAN module	Sensor track-WET	Sensor clamp-WET/-GUARD	Clamp WET	Gel box	Checkbox	Adhesive tape*
Art. No.	PU	Quantity (pcs.)	Quantity (pcs.)	Quantity (pcs.)	Quantity (m)	Quantity (m)	Quantity (pcs.)	Quantity (pcs.)	Quantity (pcs.)	Quantity (m)
TT60326	1	1	1	1	25	100	20	10	10	15

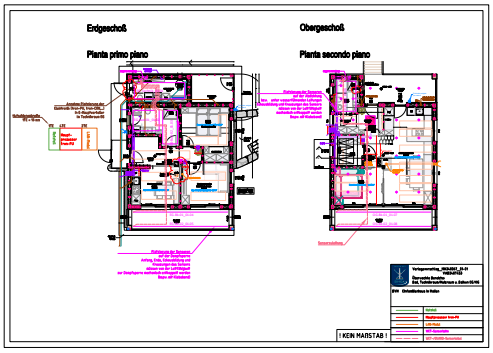
* Adhesive tape is only available in combination with StarterKit or project handling

SIHGA® TIP:

The mains connection must be established by a qualified electrician.

From the offer to activation

Planning

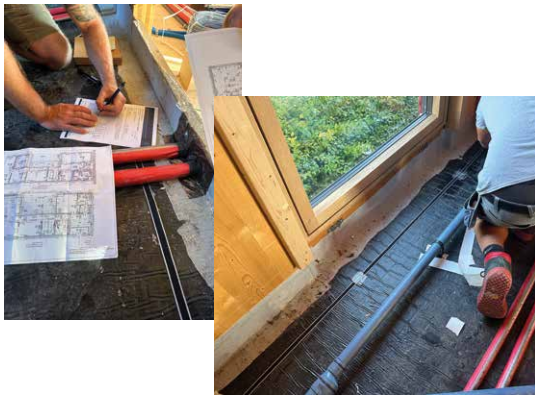


Calculation

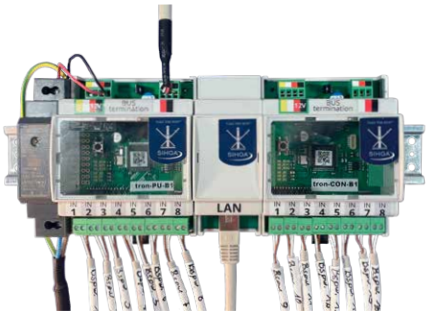


Seriennummer Elektronik	Steckplatz	Position/Beschreibung	Sensor	Sensor-Länge/Steckplatz (Guard max. 15,0 +/-2,0 lfm; WET max. 20,0 +/-2,0 lfm)	Sensor-Kabel Zuleitung (max. 100 m)	Sensor-Verbinder Anzahl (4St. Klemmen/Verbinder)	Sensor-Klemmen
	1	_EG-Technik	WET	2,0 lfm	5,0 lfm	-	2 Stk
	2	_EG-Bad-01	WET	3,0 lfm	5,0 lfm	-	2 Stk
	3	_EG-Bad-02	WET	2,0 lfm	5,0 lfm	-	2 Stk
1_tron-PU bzw. tron-Con_3-Stellige Seriennummer eintragen (unter BKR-Deckel Elektronikgehäuse)	4	_EG-Bk-01	WET	4,0 lfm	15,0 lfm	-	2 Stk
	5	_EG-Bk-02	WET	4,0 lfm	15,0 lfm	-	2 Stk
	6	_OG-Bad	WET	2,0 lfm	10,0 lfm	-	2 Stk
	7	_OG-Bk-01	WET	4,0 lfm	20,0 lfm	-	2 Stk
	8	_OG-Bk-02	WET	4,0 lfm	25,0 lfm	-	2 Stk

Installation



Connection



Automatic recording in the online portal



SIHGA® TIP:

Full functionality is only guaranteed if the software offer is accepted.

Monitorix® Awards



Young Entrepreneur award 2024

Awarded by: Wirtschaftskammer Österreich (WKO), Junge Wirtschaft



State prize for digitalization 2023

Digital transformation & innovation

Awarded by: Republiek Oostenrijk (Bundeskanzleramt Digital Austria)



HolzLand award 2024

Top supplier & innovative product

Awarded by: www.holzland.com



Woody award 2023

1st place innovative produkt

Awarded by: Gesamtverband Deutscher Holzhandel e. V. (GD Holz)



Craftsmanship award 2022

1st Place innovation & digitalization

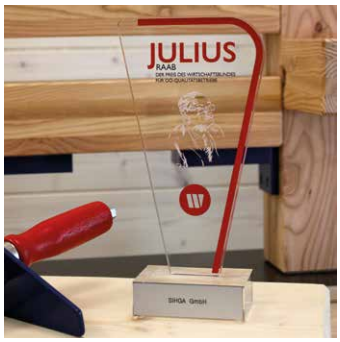
Awarded by: Wirtschaftskammer Österreich (WKO), Raiffeisen Bankengruppe



Digitalos award 2022

1st Place digital transformation

Awarded by: OÖNachrichten, Tabakfabrik Linz, KPMG, Sparkasse, Wiener Städtische Versicherung AG



JULIUS award 2022

Quality operation

Awarded by: Wirtschaftsbund Österreich (OÖ)

Austrian model company 2022

Quality mark certified quality

Awarded by: Austria Gütezeichen

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