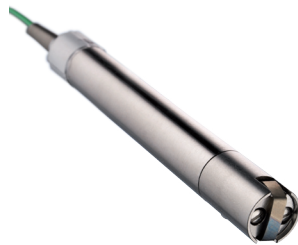


Irinos

Modular high-speed measurement system
for production measurement



- Connection to PC via standard ethernet interface
- Irinos-Boxes for inductive probes, incremental encoders, analog inputs, digital in-/outputs & thermocouples available.
- Expandable system
- Synchronous data acquisition up to 10.000 samples/s (in preparation: 20000 samples/s) (all channels simultaneously)
- Multiple galvanic isolation for high noise immunity
- Mounting and labelling accessories available



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Irinos

Modular system design

Because of its modular design in the form of Irinos-Boxes, the Irinos system can be scaled to fit various measurement applications. 32 Irinos-Boxes at a maximum can be cascaded. This provides up to 256 measurement inputs.

Each Irinos-Box is dedicated to a certain type of measurement probe or sensor type. Different box types can be combined.

All Irinos-Boxes are connected via the ILink-Interface in line topology. The ILink-Interface contains three different functionalities:

- Data-exchange between Irinos-Boxes
- Synchronisation of multiple Irinos-Boxes
- Power-supply for the Irinos-Boxes



Each Irinos-System has exactly one Irinos-Box for the ethernet connection to the PC. All measurement values are transferred via this connection. The amount of Irinos-Boxes has no influence on reading the measurement values from the PC, except that more channels are available. This allows an easy integration into Windows based measurement software (DLL available).

The Irinos-Box containing the Ethernet-Interface is the main box („Master-Box“). All others are „Slave-Boxes“

Following an example system is presented.



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Example

4 Incremental encoders or probes



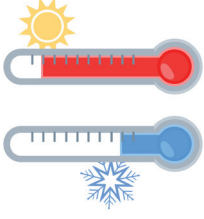
8 inductive probes



8 analogue Inputs $\pm 10V$



2 Thermocouples type K



16 digital in- and 16 digital outputs



1. IR-PU-30-CUS



2. IR-INC



3. IR-TFV



4. IR-AIN



5. IR-TEMP



6. IR-DIO



7. IR-CETH
Ethernet cable

8. IR-ILink

Irinos

Example

This system consists of:

| No | Amount | Order No | Description | Type |
|----|--------|---------------------------|---|------------|
| 1 | 1 | 828-5046 | IR-PU-30-CUS-F Power supply 30 W with EU Schuko connector | |
| 2 | 1 | 828-5047 | IR-INC-4-SEL1VSS-DSUB15F-EPI Measurement box for 4 incremental encoders 1Vpp or TTL/RS422 Master-Box with Ethernet interface | Master-Box |
| 3 | 1 | 828-5003 | IR-TFV-8-TESA-M16-IL Measurement box for 8 inductive probes type TESA halfbridge | Slave-Box |
| 4 | 1 | 828-5011 | IR-AIN-8-D10-M16-IL Measurement box with 8 analogue inputs ± 10 V | Slave-Box |
| 5 | 1 | 828-5027 | IR-TEMP-2-TCK-MINI-JACK-IL Measurement box for 2 Thermocouples Type K | Slave-Box |
| 6 | 1 | 828-5020 + 828-5021 | IR-DIO-16-16-D37M-EXTP-IL I/O-Box with 16 digital In- and 16 Outputs, connector type DSUB37 + Terminal block for direct connection of single wires. | Slave-Box |
| 7 | 1 | 828-5050 | IR-CETH-RJ45-M12-010 Ethernet cable, length 1m | |
| 8 | 4 | 828-5055 | IR-ILINK-002-IP40 ILink cable for connecting two Irinos Boxes, Length 0.2m | |



Irinos

Automatic box addressing

A unique box number is assigned to all Irinos-Boxes by the Master-Box during the startup phase. On all boxes, which have a numeric display, the box number is shown. Concurrently the auto-termination of the ILink-interface is activated at the boxes at the end of the ILink-Line.

Distributed measurement acquisition

The max. total cable length for the ILink cabling is 20m. This allows for spatial separation of the Irinos-Boxes.

Due to their compact design, the Irinos-Boxes can be placed next to the measurement device in many cases. Interference-prone cabling is thereby eliminated. Extension cables for probes are not necessary.

Synchronous HighSpeed-Measurement

Many measurement applications require the realtime acquisition of various measurement channels, allowing further calculations (e.g. concentricity measurement).

With many Irinos-Boxes, it is possible to get 10.000 measurement values / s. This value is independent of the number of channels. It is for example possible to have a realtime measurement with 32 channels acquiring $32 * 10.000$ values/s = 320.000 measurement values / s in total.

All measurement values are acquired synchronously and buffered in the internal memory of the Irinos-Box before they are transferred to the PC.

Common power supply

A 24 V DC power supply is required for all types of Irinos-Boxes. For easy cabling, only one power supply is required. It is connected to the Master Box. This supply is forwarded to all other Irinos-Boxes via ILink.



Irinos

Galvanic Isolation

Each Irinos-Box has galvanic isolation.

The galvanic isolation from the power supply ensures that external noise will not influence the measurement electronics.

Additionally the ILink-Interface has galvanic isolation, which allows for a robust communication between multiple Irinos-Boxes. Further it avoids ground loops or similar negative effects.

XSync-Technology for inductive probes

If cabling is difficult, e.g. in miniature measurement devices, phase-shifted sine-signals can cause noise on the measurement signals.

The XSync-Technology ensures that the sine-signals of all Irinos-Boxes IR-TFV are in phase.

Labelling

Each measurement channel can be labelled via an optional label carrier.

The labelling carrier IR-MIPL-8-ABB179 is suitable for 8 plastic-labels, which are widely used in switch cabinet construction. They can be printed with many commercially available plastic-label printers.

The labelling carrier IR-MIPL-8-COLOR provides 8 coloured labelling fields for engraving.

Most Irinos Boxes are prepared for labelling carriers.



Irinos

Mounting

Different mounting options are available for the Irinos-System:

1. The easiest and cheapest possibility is direct fastening via two tapped bushes M4 on the rear side.
2. Adapter for DIN rail mounting.
3. Front side mounting kit for quick exchange of Irinos-Boxes.
4. Mounting kit for 40mm aluminium profile (Item or similar). Via an additional stand, a complete mounting unit can be build up.



Tapped bushes M4
on the rear side



Adapter for hat-rail mounting



Front side mounting kit



Irinos

Windows-DLL for easy integration

For easy integration into a Windows based application, a DLL is available free of charge. Various suppliers of measurement software have already integrated the Irinos system.

Integrated webserver

An integrated webserver provides support during setup and maintenance. Current measurement values as well as system information can be accessed via a standard webbrowser.

The webserver is independent of the measurement software. Probes can be mechanically adjusted without the availability of a measurement software (e.g. 0-point adjustment).

All measurement values can be accessed in parallel to the measurement software. In case a final measurement value is not as expected (e.g. wrong scaling), the webserver can help to locate the reason for this.



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Irinos

Overview of available Irinos-Boxes

IR-TFV: Digital measurement box for inductive probes



- Connection of 8 inductive probes Tesa halfbridge, Knäbel IET, Feinprüf/Mahr, Solartron LVDT (others on request)
- High accuracy and stability
- Synchronous data acquisition (no multiplexing)
- XSync-Technology:
Synchronous sine-oscillators to avoid interference between probes.
- Pre-calibrated for the respective probe
- Available with quick-change system TAS10
- Available with Ethernet-Interface as an „integrated Master-Box“

IR-INC: Digital measurement box for incremental encoders 1 Vss and TTL/RS422



- Connection of 4 incremental encoders with 1 Vss- or TTL/RS422-interface
- 200x interpolation with 1 Vss-interface
- Integrated error detection (1Vss)
- Available with Ethernet-Interface as an „integrated Master-Box“



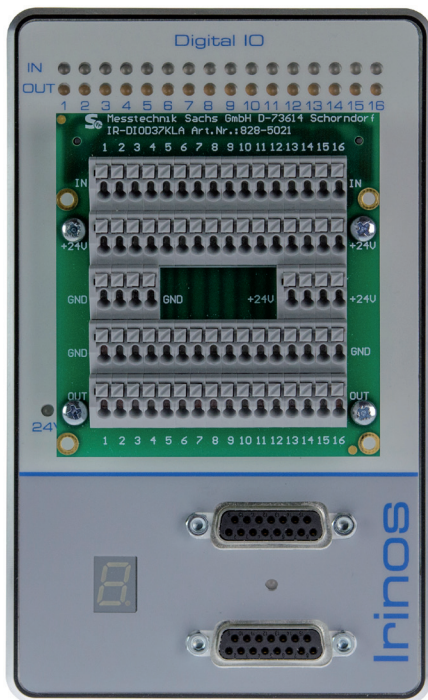
Irinos

IR-AIN: Digital measurement box for analogue inputs $\pm 10\text{ V}$



- 8 differential analogue inputs $\pm 10\text{ V}$
- Direct sensor supply with 24V DC
- High accuracy and stability
- Synchronous data acquisition (no multiplexing)
- Available with Ethernet-Interface as an „integrated Master-Box“

IR-DIO: I/O-Box with 16 digital in- and outputs



- 16 digital inputs
- 16 digital outputs
- Connection via DSUB-37 or via direct plug-in block (picture) or via 4 connectors M23

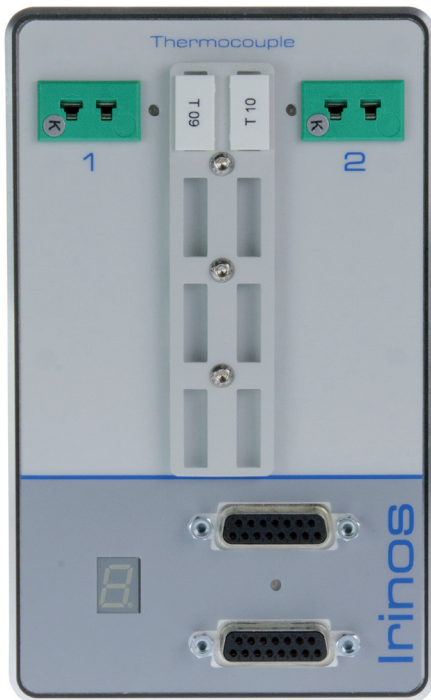


Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Irinos

IR-TEMP: Temperature measurement for thermocouples



- 2 inputs for thermocouples
- Integrated „cold junction compensation“ for very high measurement stability
- Galvanic isolation of each channel avoids unwanted interference between multiple thermocouples.



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Irinos

IR-PU: Power supply for the Irinos-System



- 30 W power (small type)
80 W power (big type)
- Input voltage 115 / 230 V AC
- Output voltage 24 V DC
- Long life expectancy
(industrial premium power supply)

IR-HMI: Control panel



- 6 robust push buttons with user-definable functionality, each equipped with a LED for individual illumination, printable labels available
- Selection of the machine- and testplan number (each from 1 to 99)
- 7 membrane keys (4 x arrow + ESC + # + OK) with user-definable functionality
- Direct connection to the Irinos system (no separate power supply required)
- Easy integration into the measurement application via Bit-I/O



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de

Irinos

General specification

The specification of the different box types can be found in the respective data sheets.

Data recording

| | |
|---------------------------------|---|
| Static / continuous measurement | Measurement rate ca. 30-100 Hz for smooth online view |
| Dynamic measurement | Up to 10.000 measurement values/s on all channels simultaneously: 1 channel -> total measurement rate 10.000 values/s 10 channels -> total measurement rate 100.000 values/s 32 channels -> total measurement rate 320.000 values/s Please note: most measurement channels support this data rate. See datasheet of respective Irinos-Boxes |
| Synchronisation | Simultaneous acquisition of all measurement channels (covering all Boxes of an Irinos-System) |

Expansion / ILink-Interface

| | |
|-------------------------------------|---|
| Max. number of Irinos-Boxes | 32 |
| Max. number of measurement channels | Depending on box types used. E.g. with IR-TFV max. 256 measurement channels. |
| Max ILink cable length | 20 m (Total length of ILink line-topology) |
| ILink termination | automatically |
| Box addressing | automatically |

Casing*

| | |
|---------------------|--|
| | Aluminium designer housing, black anodized, rear plate clear anodized, front plate with cover foil |
| Dimensions | Standard: 160 x 98 x 33 mm (H x W x D) Power supply IR-PU: 160 x 98 x 57 (H x W x D) |
| Protection class | Up to IP65 (different box types available, usage of appropriate connectors required) |
| Mounting (standard) | 2 tapped brushed M4 on the rear side |
| Mounting options | <ul style="list-style-type: none">○ adaption for hat rail mounting○ adaption for aluminium profile 40mm, Item or similar○ adaption for front side mounting |
| Labelling | Optional label carrier. |

* Does not apply to the control panel box.



Irinos is a trademark of Messtechnik Sachs GmbH.

Subject to change without notice.



Messtechnik Sachs GmbH
Siechenfeldstr. 30/1
73614 Schorndorf / Germany
www.messtechnik-sachs.de

Tel. +49 7181 26935-0
Fax +49 7181 26935-49
post@messtechnik-sachs.de