

A stylized map of the Asia-Pacific region is centered on the slide. The map is white and overlaid with a network of yellow lines and dots, representing a global or regional network. The background is a dark teal color with a subtle pattern of light teal geometric shapes and lines.

APAC Sales Meeting

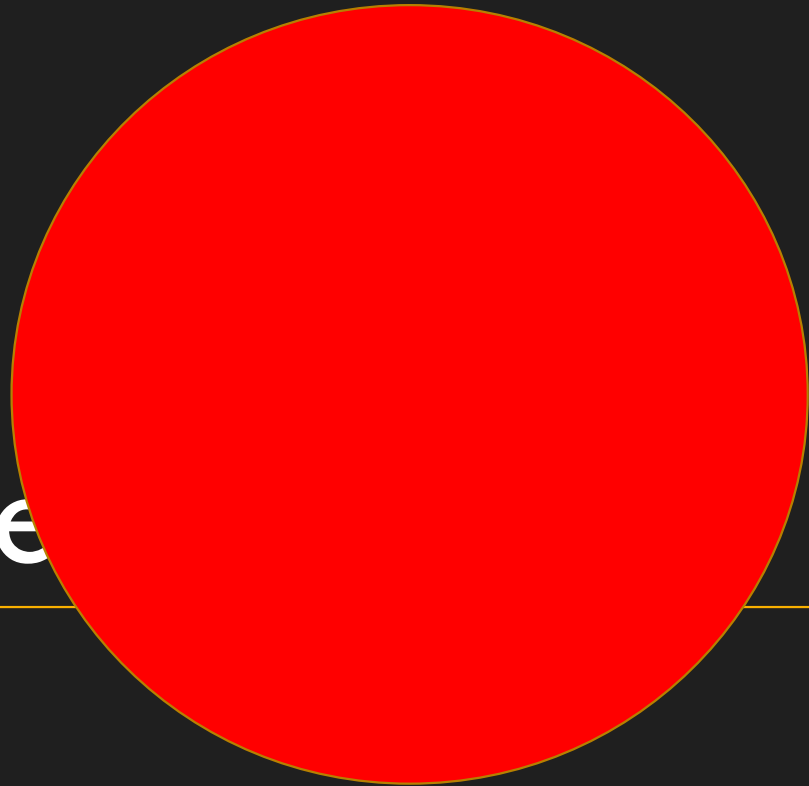
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Business Unit Industrial Solutions / Bender GmbH & Co.KG
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Agenda

- BU-I Overview
- SmartDetect
 - Platform
 - Customer specific variants
- SmartDetect RCM portfolio
 - RCMS410 in detail
 - Derivation of variants from RCMS410

BU-I Over



SmartDetect

Entering a new generation...





SmartDetect

...the next generation of electrical safety

simple and intuitive
operation



more
interfaces



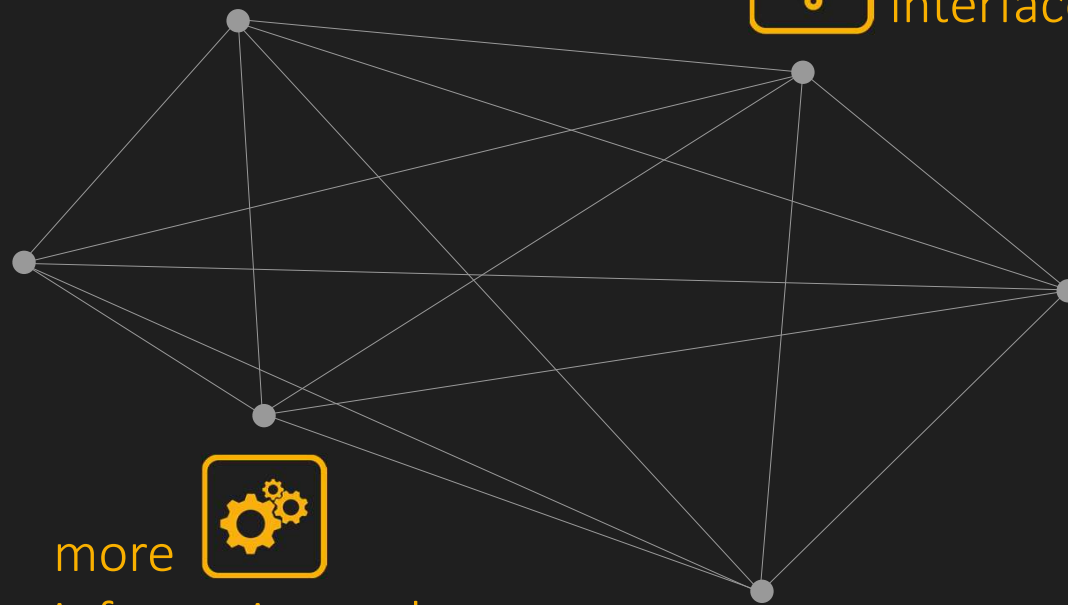
compact
design



more
information and
setting options



parameterization
via app



Goals

- New 410 and 420 device series as successor for the existing old IR12x, IR14x, 420-series, RCMS460/490-series, IR470-series
- Focus on new products with an attractive pricing for new markets/applications with high quantities
- All devices with at least one standard communication interface (e.g. Modbus RTU)

Concept

- Sensors (IoT)
- Modular construction kit for all measurement principles
- Process-optimized manufacturing
- New design according to Jupiter rules (similar to iso685, EDS440 etc.)

Modular concept

- Use of common parts and modules in different products
 - Same housing, same clamps
 - Potentiometers, LEDs, controller, interface-ICs etc.
 - HMI module, power supply module, relay module
- Use of common software modules for different products
 - Interface software
 - Display software
 - Bootloader
 - ...
- The modular concept enables fast and easy development of product derivatives for special markets, applications and customers
- Reduces the complexity and the high number of different product variants in SAP

Modular concept – example



1. Measurement sensor
 - 24 V DC power supply
 - RS485 (Modbus RTU), NFC, several I/Os
 - Either ISO, RCM, VMD, CMS or EDS



2. Wide range power supply + relay module
 - 2 relays
 - 100...240 V AC/DC power supply



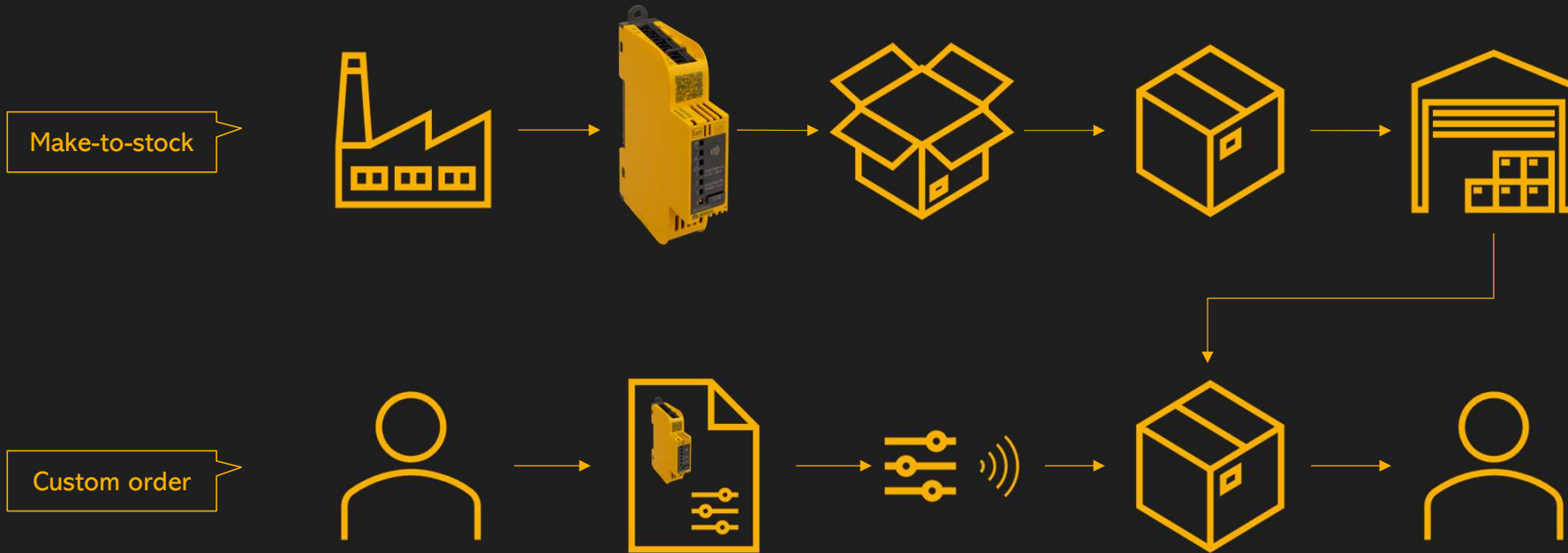
3. HMI module
 - Multi-color display
 - Buttons comparable to iso685/EDS440





- Bender Connect App can be used
 - When device is powered
 - When device is unpowered (even inside the packaging!)
- Bender Connect App is used for parameterization
 - Not for continuous monitoring
- When the device is powered, NFC must be activated

Customization*



Make-to-stock

Custom order



FK, 1000 pcs/year, ...



Customer specific variants become easier and cheaper with SmartDetect*

*currently not available for "R" devices

SmartDetect RCM portfolio

A detailed view on RCMS410 and the derivation of further RCM variants

RCMS410 at a glance

QR Code:

- Leading to a website
→ with detailed information
- Service request possible

Easy HMI:

- LED channel indicators
- Test/reset button
- NFC interface for App usage

Modbus RTU Interface:

- Parameterization
- Read out measured values



Variants:

- RCMS410-24 → DC 24 V
- Various other variants in future (e.g. display variants, variants with relays, other power supply)

Operating characteristics:

- Type A, Type F, Type B
- Response range 10 mA...30 A
- Measuring range 2 mA...70 A
- Nominal frequency DC...20 kHz

Inputs and outputs:

- 4 CT channels
- 1 digital input, 1 digital output, 1 multifunctional IO
- Connection of signal generators/connection to a PLC

Installing:

- DIN rail or screw mounting
- Push-in clamps, up to 1.5 mm²

- Overcurrent (standard) or undercurrent monitoring and window mode
- Harmonic analysis
 - Up to the 20th harmonic all channels in parallel and with fast update rate
 - On specific request, single-channel up to the 400th harmonic, calculation time approx. 2 s per channel
- Preset function, reload function
- Use of third party measuring current transformers possible (via transformation ratio)
- All channels could be used alternatively as a digital input

- RCMS410 has three optional software modules:
 - Type B AC/DC sensitive measurement (needed for type B CTs)
 - Harmonics analysis
 - Use of 3rd party current transformers
- These modules can be activated in different ways:
 - During customization in the sales process
 - In the field using a COMTRAXX gateway
 - In the field using the app
- Additionally, there are some fix article numbers with pre-activated software modules

RCMS410 variants

- B84604040
 - customizable*
- B84604041
 - not customizable**, software module „type B“ activated
- B84604042
 - not customizable**, all software modules activated

* customizable: customized parameters and pre-activation of SW modules during sales process possible

** not customizable: no customized parameters during sales process possible, but software modules could be activated after sales as well.

RCMS410 strategic positioning



Variant	RCMS4xx (type A)	RCMS4xx + type B	RCMS4xx + all features	
-24	RCMS410-24 (B84604040)	RCMS410-24 (B84604041)	RCMS410-24 (B84604042)	Successor RCMS460-L-1
-2	RCMS425-2	RCMS425-2	RCMS425-2	Successor RCMS460-L-2
-D-2	RCMS425-D-2	RCMS425-D-2	RCMS425-D-2	Successor RCMS460-D-2
			available from Q2/2023	
	New: <ul style="list-style-type: none"> • 4 channel RCMS type A • Customer specific factory settings • Subsequent purchase of software modules 			Without the software modules, RCMS410 is a 4-channel type A device with competitive pricing → good option for regions with low-cost competitors

Key advantages

- State-of-the art measurement technology → very precise
- 4 channels in a small housing → fits in every cabinet
- No time-consuming installation and commissioning → Cost-saving
- High flexibility and scalability → suitable for almost all applications
- RCMS410 and its derivatives will be compliant to new IEC62020-1
→ Compared to the old products and many competitive products

- Why is it important to look at [IEC62020-1](#)?
 - IEC62020-1 is the new version of the product standard for RCMs
 - Replaces the old version IEC62020, in some regions without transition period
- What does it mean for Bender and our position in the competitive landscape?
 - Hard but contemporary EMC requirements, difficult to fulfill
 - We are currently the only manufacturer with RCM products officially compliant to this standard
 - Only our new SensorPRO and SmartDetect series meet IEC62020-1
 - Therefore, our current 420 and 460 series need to be replaced by SmartDetect

Bender Residual Current Monitoring System now



Modbus RTU



BMS



no interface

Bender Residual Current Monitoring System 2023



Modbus RTU

Advantages of the new Modbus products

- Featurewise

- Firmware update via Modbus
- Min, max and average measurement values since last poll
- Device identification via Modbus

- Saleswise/strategically

- Open interface, no proprietary solution
- Integration into third party systems possible (e.g. PLC, ...)
- In this case no need for a gateway → lower system cost

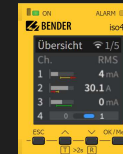
→ New applications/new markets!

- Complex (high end) applications worldwide
 - RCMS4xx with activated software features (FFT, type B, ...)
 - Connected in a monitoring system
- Mid-range applications (formerly XM420 device series) worldwide
 - RCM4xx/RCMB4xx/RCMS4xx without software features
 - Standalone or connected
- High volume projects, OEM business, brand labeling
 - Customized variants
 - Cost-optimized variants (e.g. without software features, DC 24V only, ...)
 - 4 channel type A device

Derivation of variants from RCMS410 and RCM410R



Technical capability



High

RCMS410

RCMB410

RCMS425-2

RCMS425-D-2

MRCDB425-D-2

Mid

RCM410

RCMB425-2

RCMB425-D-2

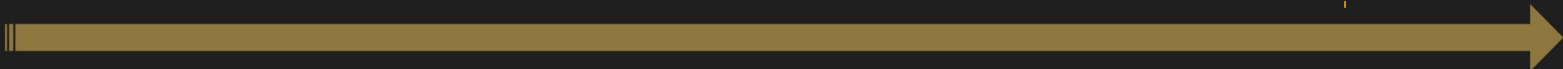
Low

RCM410R

RCM425-2

RCM425-D-2

MRCD410R



When to start SmartDetect sales activities



- RCM Type A Business
 - RCM410R → High (business) → RCM410R, start immediately
 - RCMS410 → of immediately
 - MRCD410R
- RCM Type B Bus



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