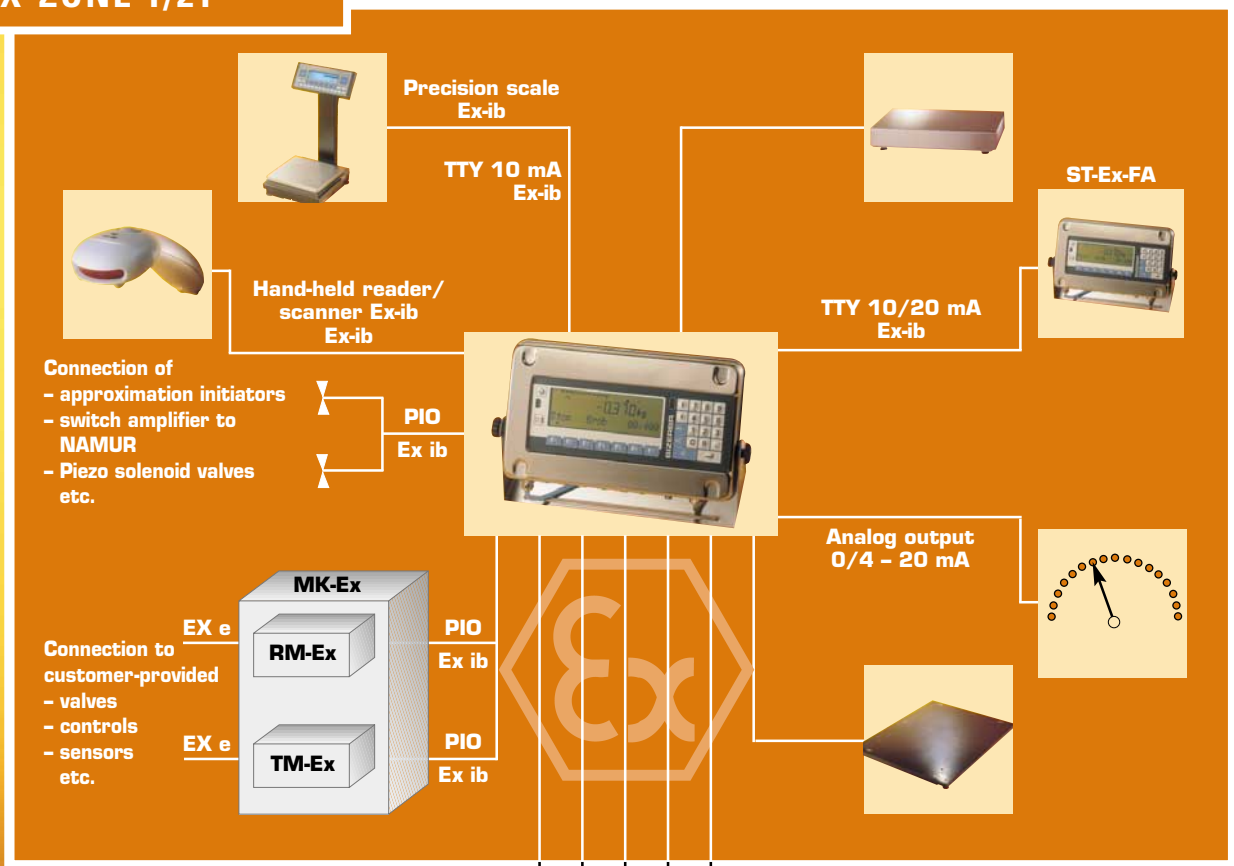


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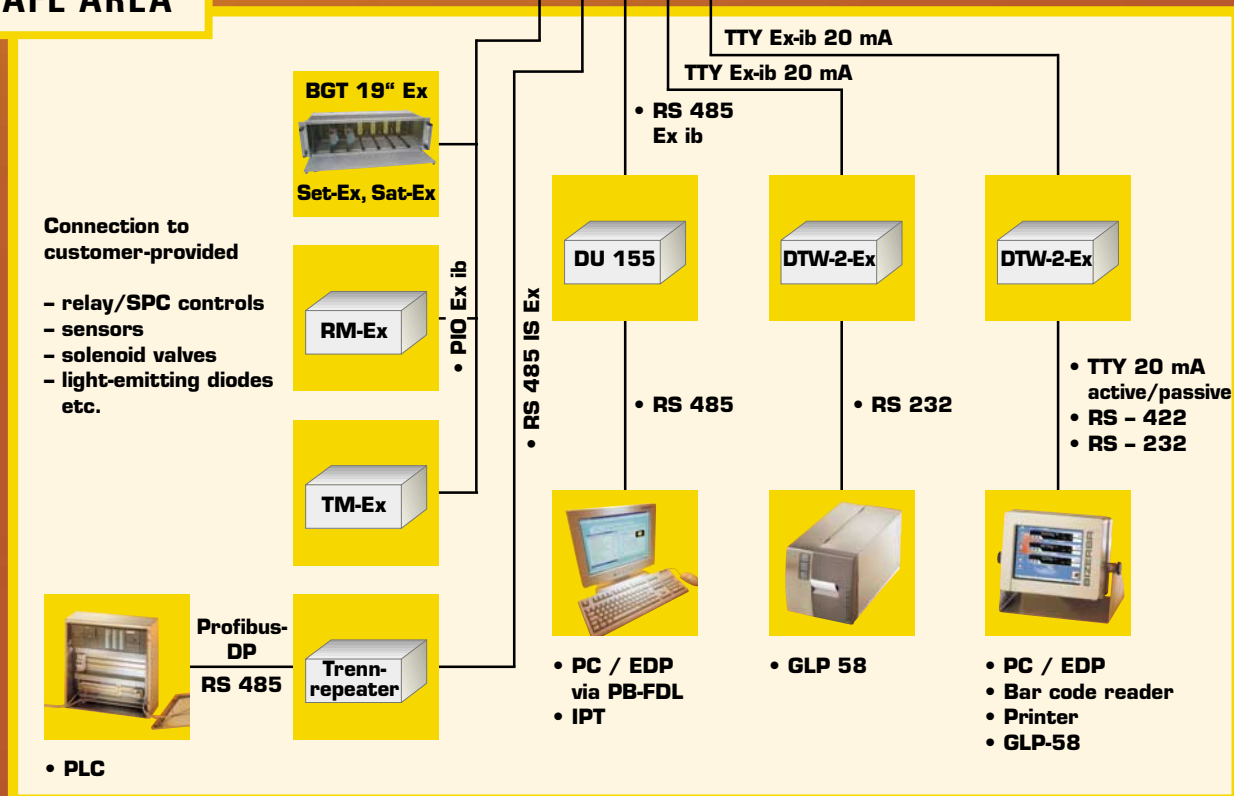
**BIZERBA | INDUSTRIAL****WEIGHING TERMINAL ST-EX**

→ STANDARD TERMINAL IN STAINLESS  
STEEL HOUSING FOR ZONES 1 AND 21.

**EX-ZONE 1/21**



**SAFE AREA**





# HARD-WEARING AND ATTRACTIVE PLUS HIGH PROTECTION RATING?

## → Industry-independent capability

The ST-Ex terminals for Ex-Zones 1 and 21 have versatile applications, whether in chemistry, petrochemistry, pharmaceuticals, plastics industry (paint filling, gas filling).

## → Top equipment features as standard at Bizerba

ST-Ex terminals offer the dual appeal of state-of-the-art technology and attractive design: complete and ready to use in a stainless steel housing designed for optimum ease of maintenance. The high protection rating IP 68 makes these terminals ideal for use under even the most adverse ambient conditions. Irrespective of its location, the ST-Ex terminal is resistant to the effects of corrosion, dust and water. The particularly easy-clean and hardwearing stainless steel housing permits ST-Ex terminals to be used primarily also in sensitive areas. The LCD liquid crystal display is back lit and offers particularly good legibility due to facility for individual reading angle adjustment by swivelling the housing. The ST-Ex terminals allow the connection of two load receptors. Intrinsically safe serial

## Bizerba ST terminals: Performance spectrum

→ WEIGHING AND REGISTRATION

→ COUNTING

→ DOSING AND FORMULATION

→ CONTROL

→ ORDER PICKING

→ DISPATCH

→ TERMINAL MODE/EDP

interfaces enable connection via data separating converters to PC, EDP printer or reading devices. The intrinsically-safe parallel interfaces allow the direct connection of proximity initiators and switch amplifiers according to Namur or, via control buffer stages, the connection of relay/PLC control, sensors, solenoid valves and light diodes.

## → ST-EX BUILT-IN HOUSING



## → ST-EX WITH STAND COLUMN



\*\* A MATTER OF COURSE WITH THE BIZERBA ST-EX TERMINALS.

# → ADDITIONAL COMPONENTS

## Installation in Ex-Area

### → BK-Ex:

Battery case for use in Ex-Zone 1 and 21  
EC type examination certification No.: **Ex 5 01 11 38033 014**

#### Nominal data:

→ Ignition Protection: **EEx ed IIC T6**  
Device group II, category 2 G/D  
max. surface temperature 80 °C

### → Technical Data:

Battery: maintenance-free lead gel battery  
Voltage: 12 V  
Capacity: 20 Ah  
Working time: 12 – 30 hour depending on Design of the ST-EX  
Charging time: 12 hour  
Housing: Stainless steel 1.4301  
W=228mm, H=332mm, D=140mm  
Protection rate: IP 68

### → Remote Display:

ST-Ex-FA for Ex-Zone 1 & 21

### → Ex-Hand-held reader:

Ex-ib Hand-held reader for use in Ex-Zone 1, direct connection to the ST-Ex. Intrinsically safe data transmission and power supplied via interface board SIO TTL.  
Code: UPC/EAN, Code 128, Code 3 of 9, Interleaved 2 of 5, Codabar, Code 93, Code 2 of 5

### → Ex-Scanner:

Ex-ib Scanner for use in Ex-Zone 1, direct connection to the ST-Ex. Intrinsically safe data transmission and power supplied via interface board SIO TTL.  
Code: UPC/EAN, Code 128, Code 39, 2 of 5 Codes, Codabar, Code 93, Code 11

### → Control buffer stage:

Relay- and Separate module, in combination with the Module Box **MK-.... Ex** for use in Ex-Zone 1&21, Ex-Zone 2&22 or safe area.

### → Relay Module RM-Ex

Ignition protection: **EEx me [ib] IIC T4**  
Output (Ex-e): 4 x relay-contact outputs  
Voltage supply: 120V / 230 V AC  
24 V AC / 24V DC

Breaking capacity: up to AC 264 V max. 8 A  
up to DC 32 V max. 8 A  
per module max. 16 A

Housing: module case for top hat rail installation  
L = 98 mm, W = 71 mm, H = 60/64,5 mm  
(TS 35 x 7,5 / TS 32)

Protection rate: IP 20

### → Separate Module TM-Ex

Ignition protection: **EEx me [ib] IIC T4**  
Input (Ex-e): 4 x optoelectronic inputs  
Triggering d.c. voltage: 3V up to 32 V  
Triggering current: 2 mA up to 3,5 mA  
Output (Ex-e): 4 x optically decoupled transistor outputs  
voltage can be supplied: max. 32 V  
Load current: max 25 mA  
Housing: module case for top hat rail installation  
L = 98 mm, W = 71 mm, H = 60/64,5 mm  
(TS 35 x 7,5 / TS 32)

Protection rate: IP 20

### → Module box MK-...-Ex

EC type examination certification No.: **Ex 5 03 04 38033 017**  
Ignition protection: **EEx e m ib IIC T4**  
Device group II, category 2 G/D  
max. surface temperature T 80 °C

Installation in Ex-Zone 1&21 or safe area

Module box for installation of two module RM-EX and/or TM-EX

Housing: mild steel, lacquered  
Optional stainless steel  
Protection rate: IP65

## Installation in safe area

### → Control buffer stage:

**Relay module RM-Ex:** technical data look to Ex area  
**Separator module TM-Ex:** technical data look to Ex area

#### Input separator SET - EX

Optically decoupled inputs: 8  
Control voltage: 3V up to 40 V  
Control current: 2 mA – 3,5 mA  
Design as European insert card for installing in a 19" subrack

### → Output separator SAT - EX

Transistor outputs: 8  
Max. applied voltage: 30 V  
Max voltage drop: 1V  
Load current: max. 20 mA  
Design as European insert card for installing in a 19" subrack

### → Data buffer stage DTW 1:

The Data buffer stage separates an intrinsically-safe TTY current interface from a non-intrinsically-safe TTY interface

Technical data:  
Housing: Aluminium die cast, lacquered  
80 x 75 x 57 mm (W x H x D)  
IP 65

Protection rate: IP 65  
Ignition protection: [EEx ib] IIC  
Ex-i-side: TTY 20 mA (passive)  
External device side: TTY 20 mA (activ/activ)  
Channel: 1  
Transmission rate: up to 10kBd

### → Data buffer stage DTW 2:

The dual channel data buffer stage separates two intrinsically-safe TTY current interface from a non-intrinsically-safe TTY, RS422, RS232 interfaces.

Technical Data:  
Housing: Aluminium die cast, lacquered  
220 x 120 x 87 mm (W x H x D)

Protection rate: IP 65  
Ignition protection: [EEx ib] IIC  
Ex-i-side: TTY 10/20 mA (active/passive)  
External device side: TTY 20 mA (activ/passive)  
RS 422, RS 232  
Channels: 2  
Transmission rate: up to 115 kBd  
Voltage supply: 120 V/230 V AC, 24V AC/24V DC

**Option:** Design as European insert card for installing in a 19" subrack

### → Separate repeater DU 155

The Separate repeater DU155 separates an intrinsically-safe RS 485 interface from a non-intrinsically-safe RS 485 interface.

Technical Data:  
Housing: Aluminium die cast, lacquered  
220 x 120 x 87 mm (W x H x D)

Protection rate: IP 65  
Ignition protection: [EEx ib] IIC  
Ex-i-side: RS 485 (Ex) with reduced level  
External device side: RS 485  
Channels: 1  
Transmission rate: up to 93,75kBd  
Voltage supply: 120 V/230 V AC, 24V AC/24V DC

**Option:** Design as European insert card for installing in a 19" subrack

### → Separate repeater Profibus DP

The Separate repeater separates an intrinsically-safe Profibus-DP RS 485 IS interface safely from a non-intrinsically-safe Profibus-DP RS 485 interface.

Technical Data:  
Housing: Thermoplastic, steel  
160 x 160 x 90 mm (W x D x H)

Protection rate: IP 66  
Ignition protection: EExe m [ia] IIC T4  
Ex-i-side: RS 485 IS Ex  
External device side: RS 485  
Channels: 1  
Transmission rate: up to 1.5MBd (regarding PNO)  
Voltage supply: 24V DC

# → WHICHEVER WAY YOU WANT IT: SIMPLE, UNIVERSAL OR HIGHLY INTELLIGENT?

## → The intelligent interface

Standard terminals ST-Ex offer solutions for a wide range of different weighing tasks.

Whether simple weighing functions or complex processing of operational data, whether primarily value readings or data input – the new Bizerba ST-Ex terminals form the nerve centre of any weighing system: They are the interface between load receptor, PC and connected peripherals, also bidirectionally, and at the same time function as an intelligent system evaluator terminal.

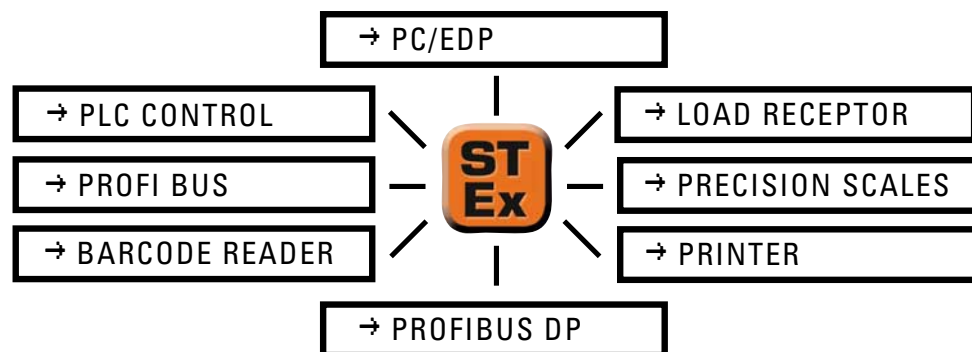
## → Wide-ranging of application spectrum

With their comprehensive functional features and customer-specific software licensing, for example for weighing, counting, dosing, control and tolerance monitoring, ST-Ex terminals

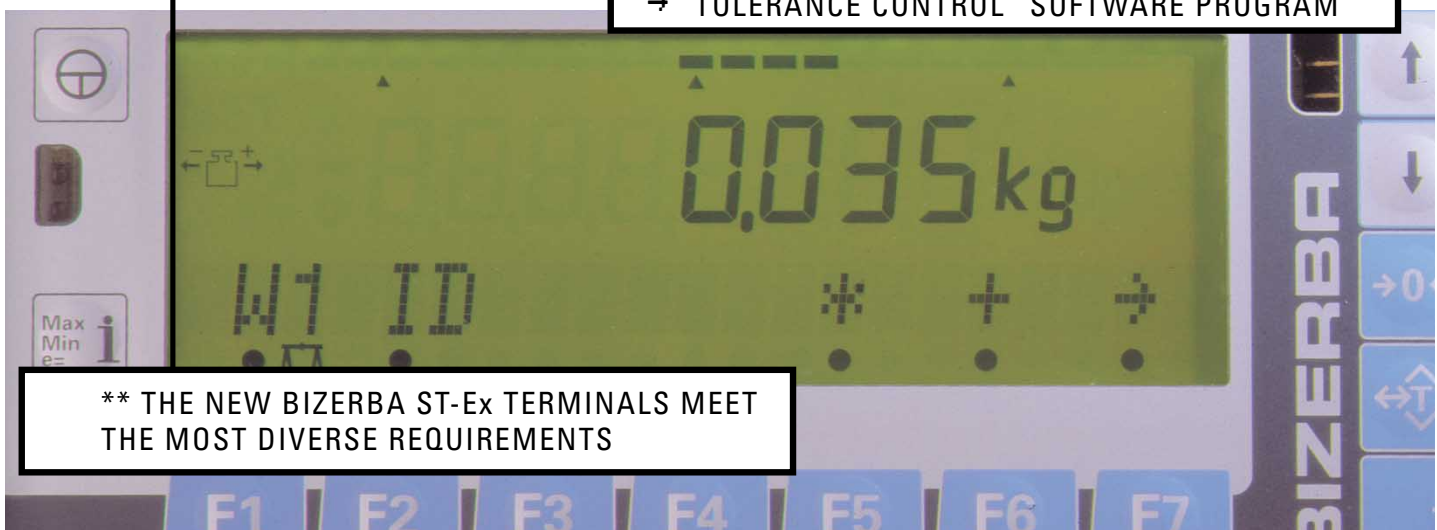
from Bizerba offer scope for individual, low-cost solutions. But even the standard ST-Ex hardware and software equipment permits a wide range of daily applications to be professionally performed.

## → Scope for versatile possibilities

The ST terminal can be deployed as a station for the acquisition of operational data and as a highly efficient instrument for process rationalization: Quality assurance. Creating economical loading and storage units. Determining piece numbers. Order picking parts of equal weight. Optimization of material and energy deployment. Compilation of material input-output statements



→ "TOLERANCE CONTROL" SOFTWARE PROGRAM



\*\* THE NEW BIZERBA ST-Ex TERMINALS MEET  
THE MOST DIVERSE REQUIREMENTS





ST-Ex standard equipment

- **EC type test certificate:** No. **EX5 01 10 38033 013** according to Appendix III of Council Guideline No. 94/9/EC (ATEX).  
  
Nominal data:  
Equipment group II, Category 2 G/D  
Ignition protection: **EEx ib m IIC T4**  
max. surface temperature: **T100 °C**

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- **Explosion Protection directive:** **II 2 G EEx ib m IIC T4**  
**II 2 D, T 100 °C**

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- **Housing:** Complete housing produced in stainless steel 1.4301  
Dimension: 382 x 262 x 152 mm (W x H x D)

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- **Protection rate:** dust and water-tight according to IP68  
Suitable for use in potentially explosives atmospheres zone 1 and 21

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- **Display:** Backlit LCD display made up of display fields for weight values, character height approx. 18mm with status and scale-specific/verification-related data; 21-digit display line, e.g. for operator prompting or as a sign and function display; 5 x 7 dot matrix, character height approx. 12 mm

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- **Keypad:** 27 inscribed foil keys with mechanical action point and acoustic input acknowledgement, 7 configured as freely assignable function keys.

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- **ADC:** Plug in ADC-Module on the motherboard for connecting a load receptor. Impedance min. 87 Ω

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- **Auxiliary power:** Standard: 120 / 230 V AC  
Optional: 24 V AC, 24 V DC  
12 V battery with low discharge protection

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- **Power consumption:** max. 20 W

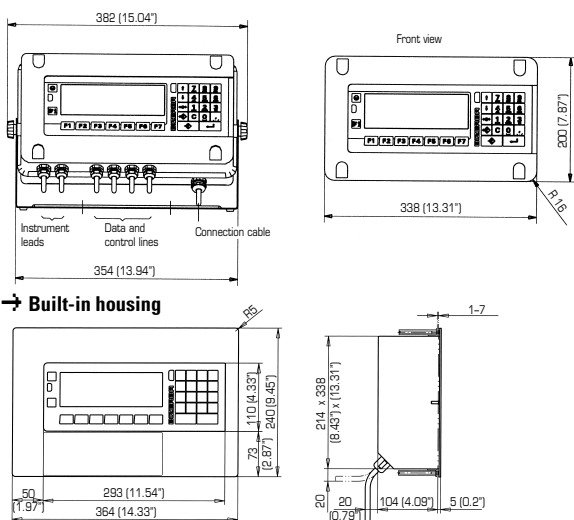
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- **Dead weight:** approx. 4 kg

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- **Ambient temperature:** Operation: -10 °C up to +40 °C  
Storage: -20 °C up to +60 °C

→ **Dimensions in mm (inches):**



ST-Ex optional equipment

- **Additional ADC:** Second ADC to connect a further load receptor. Selection via function key.

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- **Intrinsically safe serial interfaces:** Standard equipment 2 channels may be equipped. With additional Extension board max. 4 channels can be equipped as follows  
**SIO TTY 10/20 mA**  
intrinsically safe interface TTY 10/20 mA to connect  
- Remote display ST-EX FA  
- Precision scale  
or for the connection of a various peripheral devices in the safe area via data buffer stage.  
**SIO RS 485**  
intrinsically safe interface RS 485 Ex for Networking up to 32 ST-Ex in Ex-Area via Profibus FDL. Connection to the safe area via separate repeater DU155  
**SIO TTL:**  
intrinsically safe TTL-interface to connect intrinsically safe Hand-held reader and Scanner. Intrinsically safe power supply for the Hand-held reader and scanner via interface board SIO-TTL

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- **Analogue output 0/4-20 mA**  
Equipped with max. 2 interface boards. Intrinsically safe analogue output 0/4 – 20 mA for connecting an Ex-isolating amplifier, measuring, control or display unit.

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- **Profibus-DP RS 485 IS Ex**  
intrinsically safe Profibus DP RS 485 IS Ex module for networking up to 32 ST-Ex Terminals in the Ex-Area via Profibus DP. Transmission rate max. 1.5 Mbit/s. Connection to the safe area via separate repeater Profibus DP

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- **Intrinsically safe parallel interface P10 4/40:** Equipped with max. 2 parallel interface boards 8 static input/8 static output signals. Design variants selectable on interface board.  
**Active input according to Namur DIN19234**  
 $U_0 = 10 V, I_0 = 33 mA$  for potential-free contacts (Ex-i), relay components with ex-compliant isolation, proximity initiators according to Namur 19234  
**Passive input**  
3.5 V up to 15 V, 2,1 mA up to 20 mA for safety barriers or ex-separators  
**Active output**  
9V, 25 mA, for solenoid piezo valves, light emitting diodes, evaluation barriers  
**Passive output**  
according to Namur 19234 for switch amplifier according to Namur 19234 with resistor for cable monitoring (wire break and short circuit)

ST-Ex optional functions/software

- **Software modules:** weighing counting, plus/minus tolerance control, one component dosing (filling) max 99 nominal values, filling column control, BIG-Bag filling, in-motion weighing, customer and article file program.

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- **Software modules to connect external devices:** Connection via control-/data-buffer stage or separate repeater.  
Printer, scanner, remote display, EDP connection via RS232 or Profibus FDL



**BIZERBA**  
\_balanced information