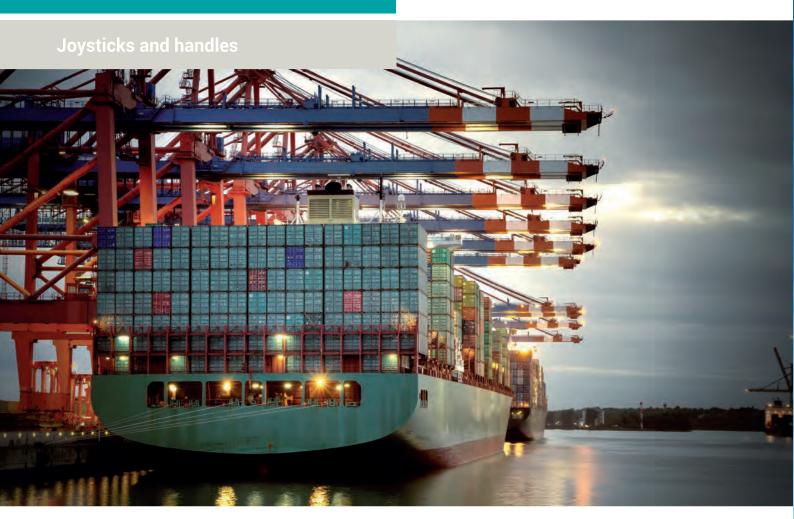
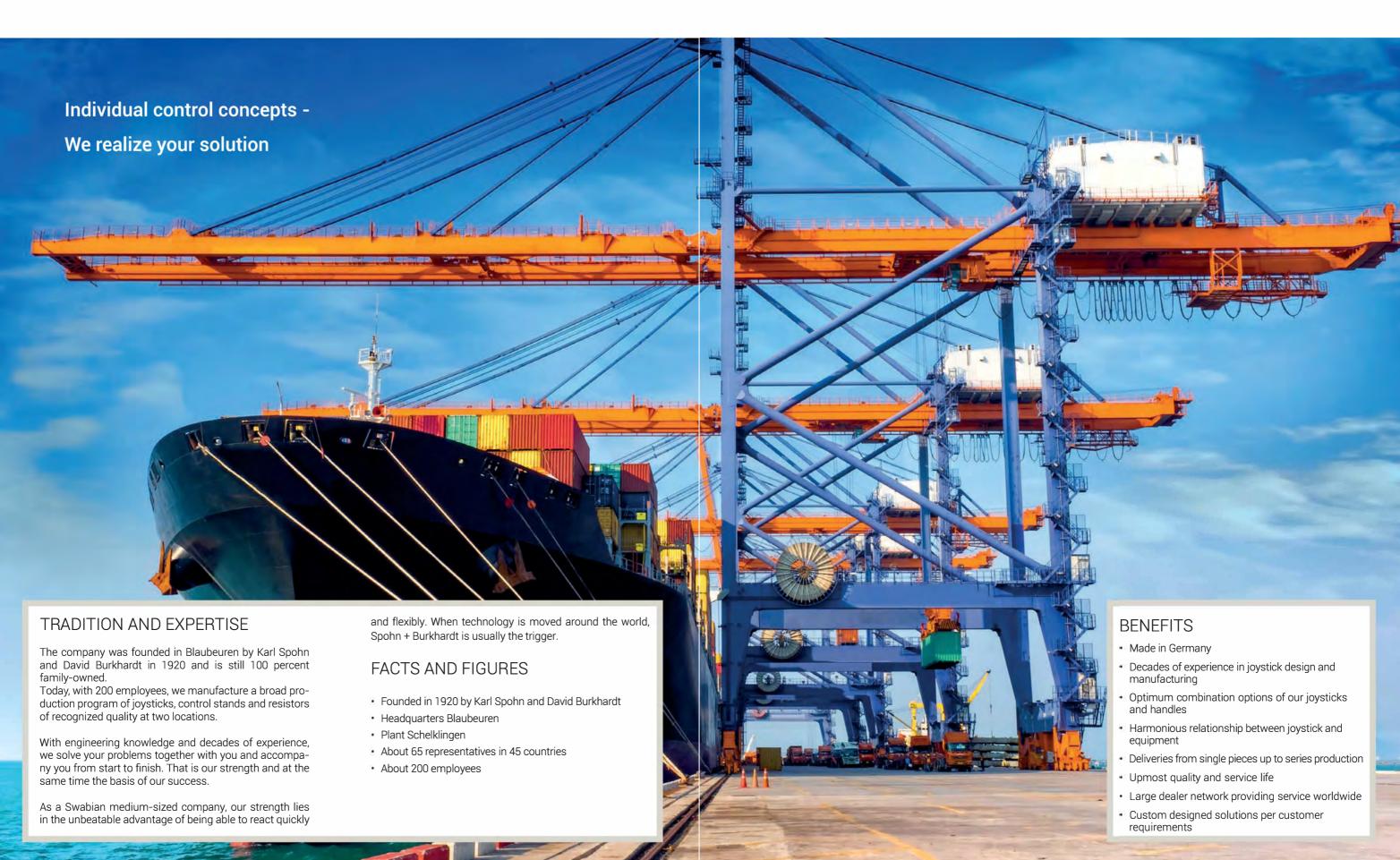


Ship and harbour













- Metal drive mechanism Maximum 5-0-5 stages
- Long mechanical service life of up to 6 million switching cycles
- Long-lasting lightweight plastic potentiometer or non-contact Hall sensors Friction brake or spring-
- Optional mechanical neutral position lock



- Metal drive mechanism
 - Chrome-plated cast aluminum housing with high front-side IP protection rating for extreme environmental requirements
 - · Long-lasting lightweight plastic potentiometer or non-contact Hall sensors
 - · Friction brake or springreturn
 - · Optional mechanical neutral position lock



- Metal drive mechanism
 - housing prevents entry of water from above, even if the rubber sheath is damaged
 - High mechanical service life of up to 6 million switching cycles
 - Long-lasting lightweight plastic potentiometer or
 - non-contact Hall sensors Friction brake or spring-
 - return Optional mechanical neutral position lock with Reed contact



- Metal drive mechanism, · Sealed high-quality plastic drive block made of highquality plastic
 - Long mechanical service life of up to 10 million switching cycles
 - · Optional retrofitting of potentiometers, optoelectronic encoders
 - Maximum 6-0-6 stages with standard or custom switching mechanisms
 - · Weight-optimized design, · Friction brake, springreturn or indexed
 - · Combinable with several SPOBU handles



- nism and metal drive block drive mechanism
- life of up to 20 million switching cycles
- Maximum 7-0-7 stages
- Optional retrofitting of potentiometers, optoelectronic encoders
- Versions for Ex-zone available
- Version with double lever available
- · Combinable with several SPOBU handles



- Very robust drive mecha Extremely robust metal
- Long mechanical service
 Long mechanical service life of up to 25 million switching cycles switching cycles
 - Maximum 6-0-6 stages
 - Optional retrofitting of potentiometers, optoelectronic encoders
 - Versions for Ex-zone available
 - Optionally with integrated
 Optionally integrated interfaces for CANopen, SAEJ1939, Profibus, ProfiNet
 - · Combinable with several SPOBU handles



- Metal drive mechanism and drive block
- Long mechanical service life of up to 20 million
- Non-contact HALL sensors and/or lightweight plastic potentiometers
- Microswitches for hardware wiring
- interfaces for CANopen, CANopenSafety, Profibus, ProfiNet, ProfiNet with ProfiSafe protocol
- Combinable with several SPOBU handles



- Metal drive and housing
- Long mechanical service life of up to 10 million switching cycles
- Non-contact 3D Hall sensors

ProfiNet

- Redundant analogue exit Optional integrated interfaces for CANopen, SAEJ1939, Profibus,
- Combinable with several SPOBU handles



- play metal mechanism
- For smooth and precise control, optionally with oil damping
- Mechanical service life of up to 4 million switching cycles
- Non-contact HALL sensors or lightweight plastic potentiometers
- Low-profile rubber sheath Versions for Ex-zone for low handle height
- Combinable with various electronic interfaces



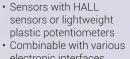
interfaces for CANopen,

SAEJ1939, Profibus,

ProfiNet

available

- Extremely sensitive, zero- Robust control switch with Extremely sensitive, zeroplay metal mechanics metal drive mechanics
 - · Optionally with oil damping Long mechanical service for smooth and precise Optional retrofitting of control
 - potentiometers, optoelec- Long mechanical service tronic encoders · Optionally available with
 - Sensors with HALL sensors or lightweight
 - electronic interfaces





Handles

Standard handles



• Standard plastic handle for CS1, VCS0 and VNS0 joysticks G48

- · Optionally with recessed or protruding button with various protection ratings
- Available with integrated capacitive hand recognition
- Version G41-Z for mechanically locking joystick

G22



- Plastic handle Ø 40 mm
- A maximum of 1 pushbutton can be integrated
- Recessed or protruding pushbutton installation Version G22Z for mechanically locking joystick
- Combinable with several SPOBU joysticks





G21

- - A maximum of 2 pushbuttons can be integrated

Version G46-Z for mechanically locking joystick

- Recessed or protruding pushbutton installation
- Version G21Z for mechanically locking joystick
- Combinable with several SPOBU joysticks

• Standard plastic handle for NNS0 joysticks

various protection ratings

• Plastic handle Ø 45 mm

Optionally with recessed or protruding button with

Available with integrated capacitive hand recognition

Palm handles



• Ball handle with several installation options

- Push buttons on the side and/or on top
- Alternatively with toggle switch on top
- Optionally with hand rest
- Combinable with several SPOBU joysticks



Compact ball handle with/without pushbuttons

- · Optionally with capacitive hand recognition sensor • Operable with 2 fingers or whole hand
- Combinable with several SPOBU joysticks





Standard handle for joystick JMS3

- Finger operation for extremely precise control



- Forward-tilting ball handle
 - Lever switch on front
 - Optionally with toggle switch, pushbutton or rotary potentiometer on top
 - Combinable with several SPOBU joysticks



- Compact plastic handle
- Operable with 2 fingers or whole hand
- Up to 6 pushbuttons can be integrated

Combinable with several SPOBU joysticks

Ball handles

KG40/50

· Solid ball handle

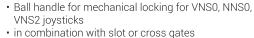
- Versions with 40 and 50 mm diameter
- Combinable with several SPOBU joysticks



• Robust ball handle

- With capacitive hand recognition sensor
- Combinable with several SPOBU joysticks

KG56-IKKZ



- · Optionally with contact

T-handles



• T-handle with/without pushbuttons

- G13 Optional mechanical pivoting for individual adjustment
- Version G1Z for mechanically locking joysticks
- · Optionally with dead man's function by pressing down Optionally integrated capacitive hand recognition
- Combinable with several SPOBU joysticks



- T-handle with/without pushbutton
- Stationary or rotating with a maximum of 2-0-2
- Version G13Z for mechanically locking joystick
- Optionally with capacitive hand recognition sensor
- Combinable with several SPOBU joysticks

Rotary handles





- Handle with integrated rotating function
 - Sensors with lightweight plastic potentiometers with direction recognition
 - · Combinable with several SPOBU joysticks

Universal handles

G56



- Ergonomically shaped for left or right hand
- Integrated hand rest for work without fatigue
- Modular design with standard or custom equipment of insert
- Optionally integrated capacitive hand recognition sensor
- Optionally rotating
- Combinable with several SPOBU joysticks

G58





- Compact, symmetrical, can be used for left or right hand
- Ergonomically shaped for work without fatigue
- Modular design with standard or custom insert panels
- · Catch on the rear
- Optionally integrated capacitive hand recognition sensor
- Combinable with several SPOBU joysticks

UGA









- Can be used for left or right hand
- · Modular design with optional combination of wide and narrow handle halves
- High variability with installation of command devices on top, front or side
- · Lever switch on the rear
- Optionally with hand rest, can also be updated
- · Optionally rotating
- Optionally integrated capacitive hand recognition sensor
- Combinable with several SPOBU joysticks

UGN





- Compact handle can be used for left or right hand
- Ergonomically shaped for work without fatigue
- High variability with installation of command devices on top, front
- Integrated surrounding hand rest
- Optionally integrated capacitive hand recognition sensor
- · Combinable with several SPOBU joysticks



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