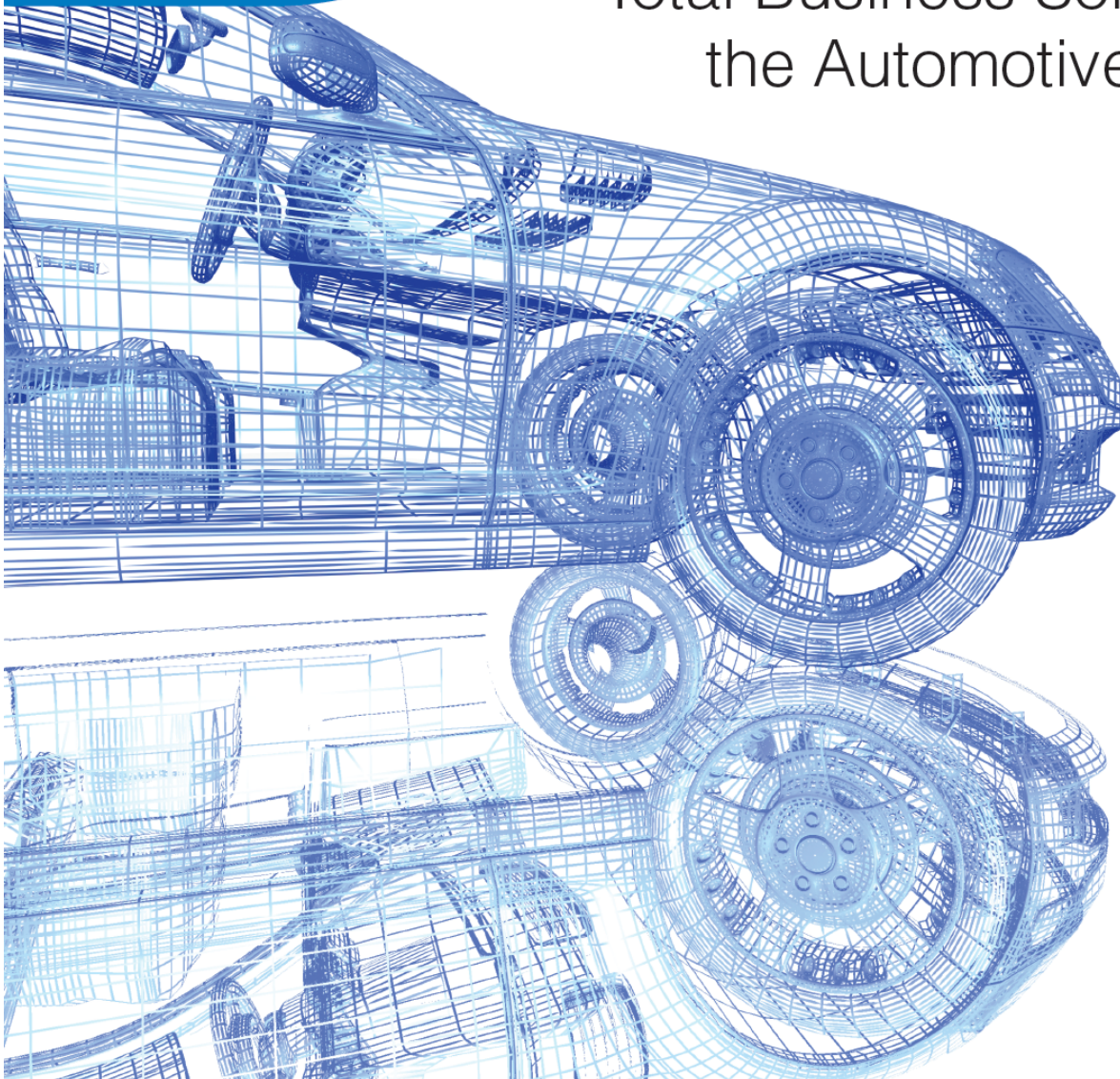


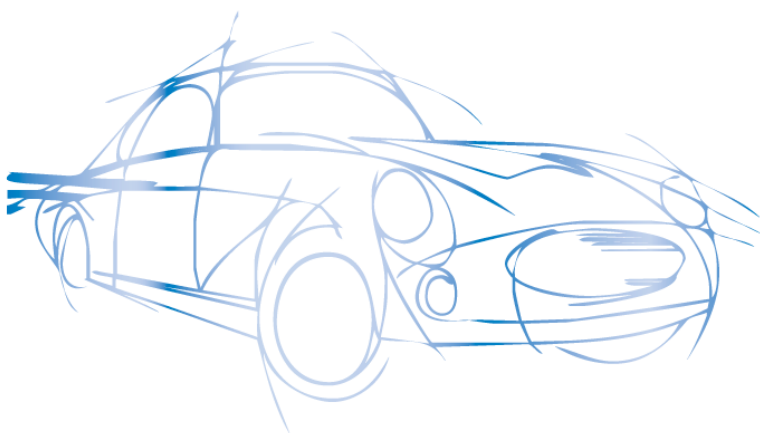


Expertise – Passion – Automation

# Total Business Solutions for the Automotive Industry



From concept design development to final component production our unique holistic partnership approach is delivering flexible, long term business solutions for our customers across the international automotive manufacturing industry and its Tier One Suppliers.



Worldwide leading experts in  
pneumatics and industrial automation

[www.smcza.co.za](http://www.smcza.co.za)



## Why choose SMC?

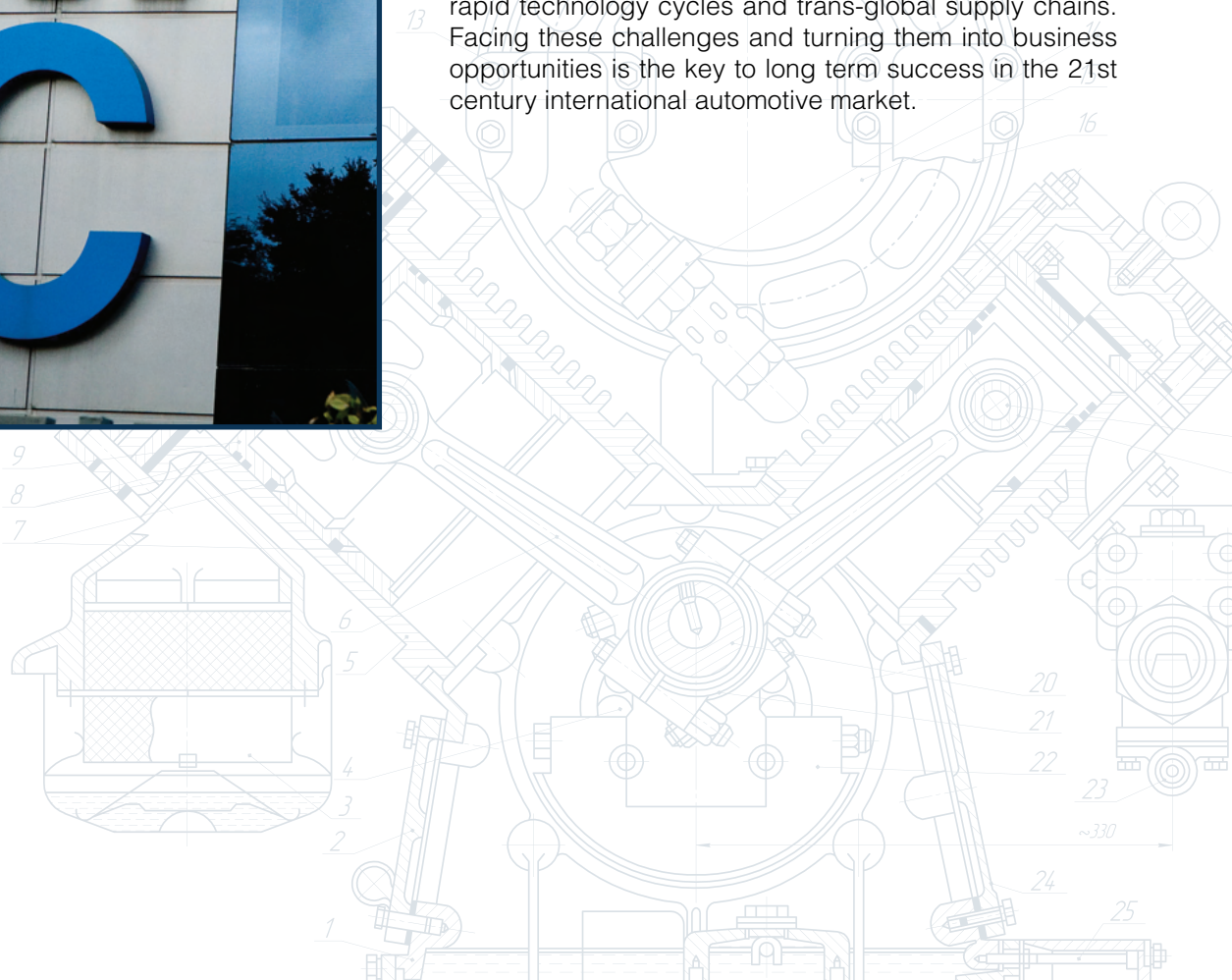
SMC is the world's leading pneumatic components supplier and are experts in industrial automation.. This global presence ensures product development and integrity is always of the highest quality while our local product supply and support network means hands-on contact for every customer.

We have worked with the global automotive industry since the company first started manufacturing pneumatic components and control systems in the 1960s. Today, SMC enjoys an unrivalled track record of component development and supply with all of the world's major automotive manufacturers and their suppliers as well as developing original products for specialist and luxury marques.

By offering the world's most comprehensive pneumatic components range combined with bespoke design and production capabilities, we have built highly successful, symbiotic business relationships with customers throughout the automotive industry.

To ensure those relationships are long term and stable, we constantly invest in ways to make our products ever more innovative and our customer service second to none in a rapidly changing business environment.

Automotive manufacturing is a complex business with ever increasing numbers of product options, super-rapid technology cycles and trans-global supply chains. Facing these challenges and turning them into business opportunities is the key to long term success in the 21st century international automotive market.



## Facing the Future and Working Together

Worldwide competition across the manufacturing sector is driving innovation and efficiency. At SMC, our response to this is driven by our long held philosophy of **Continuous Improvement**. It is at the core of our new **Business Solutions Strategy** – a unique partnership-based approach to customer relationships that takes a holistic view to solving your business challenges - not just a short term solution to an immediate component issue.



## Five keys to success...

- **Listening** – we maintain regular contact with our customers and we listen to the production issues facing them. This gives us a much greater understanding of their overall business needs
- **The Big Picture** – we take a holistic view of your business and the demands made upon it to develop a range of management and production solutions. We then work with you to implement the most appropriate way forward for your business
- **Broad industry experience** – our unrivalled track record working with companies from across the automotive sector enables us to identify growth opportunities for all aspects of your business. These can range from improved productivity and factory throughput to energy management, engineering staff training, Health & Safety issues and even risk management
- **Exploiting technology** – our technically-led approach to customer support delivers not just a component solution but addresses all stages of the design and production process. We can bring design excellence from our world renowned European Technical Centre; the best quality control technology in our advanced Clean Rooms & Test Facilities through to the rapid response and JIT production capabilities of our dedicated manufacturing site.
- **Being there** – we always aim to deliver a future proof solution for customers so together we can look ahead and be there with you to ensure you stay ahead of the competition.



Quite simply, it's a Win-Win Solution for you, for your customers and for us as your business partners.

# Speed controller, all metal exterior

## AS-X737 Series



- Metallic exterior
- Spatter cover can be used
- Port sizes: R 1/8, R 1/4 and R 3/8
- Applicable tubing O.D.: Ø 6, Ø 8 and Ø 10
- Ambient and fluid temperature: -5 to 60 °C

Part number	Thread port	Tube Ø [mm]	Flow [l/min]	Control type
AS2201-01-F06S-X737	R 1/8	6	230	Meter-out
AS2201-01-F08S-X737	R 1/8	8		
AS2201-02-F06S-X737	R 1/4	6	390	
AS2201-02-F08S-X737	R 1/4	8	460	
AS2201-02-F10S-X737	R 1/4	10		
AS3201-03-F08S-X737	R 3/8	8	790	
AS3201-03-F10S-X737	R 3/8	10	920	

# FR three-layer polyurethane tubing

## TRTU Series

Ø : 6 • 8 • 10 • 12 mm



- Flame resistant (Equivalent to UL-94 Standard V-0)
- Spatter resistance is improved by installing an aluminium layer between the outer layer and the inner tube
- Special tool for stripping off the outer layer (part no.: YS-100).

### Customer benefits

- Increases tubing life expectancy
- Less stops for maintenance as it is a flame resistant three-layer polyurethane tubing that has a superior weld spatter resistance
- Increases savings.

### How to order

TRTU1065 BU - 20

①      ②      ③

#### ① Tubing model

Model	Inner tubing O.D. x I.D. [mm]
TRTU0604	6 x 4
TRTU0805	8 x 5
TRTU1065	10 x 6.5
TRTU1208	12 x 8

#### ② Colour indication

Symbol	Colour
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

#### ③ Length per roll

Symbol	Length
20	20 m – roll
100	100 m - reel

### Applicable fittings

KR Series - Flame resistant fittings - page 363
KQB2 Series - Metal one-touch fittings - page 351

### Specifications

Model	TRTU0604	TRTU0805	TRTU1065	TRTU1208
Inner tubing O.D. [mm]	6	8	10	12
Inner tubing I.D. [mm]	4	5	6.5	8
Outer layer thickness [mm]	1	1	1	1
Min. bending radius [mm]	50	60	70	80
Operating pressure	0.8 MPa (at 20 °C) / 0.65 MPa (at 40 °C) / 0.5 MPa (at 60 °C)			
Temperature range	-20 °C to +60 °C / Water: 0 to 40 °C (No freezing)			
Material	Inner tubing: Polyurethane Middle layer: Aluminium laminated film Outer layer: Polyolefin (Equivalent to UL-94 standard V-0)			

### Part Numbers

TRTU	Tubing O.D. [mm]			
	Ø 6	Ø 8	Ø 10	Ø 12
Black - 20 m roll	TRTU0604B-20	TRTU0805B-20	TRTU1065B-20	TRTU1208B-20
Blue - 20 m roll	TRTU0604BU-20	TRTU0805BU-20	TRTU1065BU-20	TRTU1208BU-20
Black- 100 m reel	TRTU0604B-100	TRTU0805B-100	—	—

# Some of our key products developed for the Automotive Industry

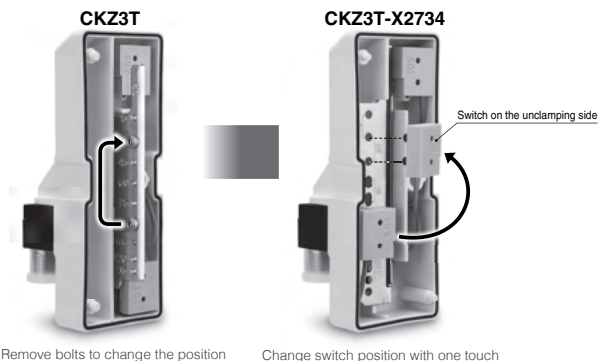
## Power Clamp Cylinder

CKZ3T-X2734 Series

ø50, ø63

- Simple switch adjustment greatly reduces work-hours.

Switch can be adjusted easily when changing the arm opening angle.



- With metal switch cassette cover

- Protects switch cassette from unexpected impact

- Weight reduced by up to 39%

- Aluminum body with greatly reduced weight
- Ideal for robot material handling

Bore size	CKZT → CKZ3T-X2734	Reduction rate
50	5.0 kg → <b>3.1 kg</b>	38% reduced
63	7.1 kg → <b>4.3 kg</b>	39% reduced

\* Arm opening angle: 135°

- High clamping force 4000N

(ø63, Arm length: 100 mm, 0.5 MPa)

- Spatter proof construction

- Fully closed structure prevents intrusion of spatter

- Select from two types of top cover

- Rubber cover: Rounded design reduces accumulation of welding spatter Equivalent to UL94 standard V0: Flame resistant

- Metal cover: Suitable for arc welding lines

: Protects the cylinder from unexpected external impact



## Pin Shift Cylinder for High Precision Positioning

CKQG-X2370 Series

ø32, ø40, ø50

### High precision

Rod end deflection  $\pm 0.1$  mm or less

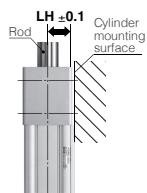
Rod end deflection of  $\pm 0.1$  mm or less is achieved when a load is applied to the rod at its extension end.



### Position reproducibility

Mounting surface  $\leftrightarrow$  Rod center

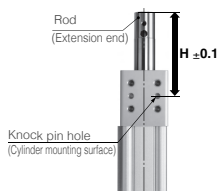
Distance accuracy  $\pm 0.1$  mm



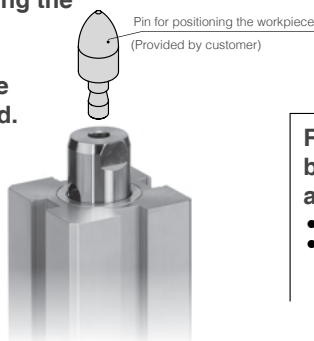
Cylinder mounting surface

knock pin hole  $\leftrightarrow$  Rod end

Distance accuracy  $\pm 0.1$  mm

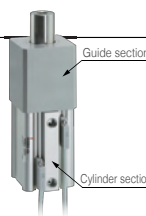


Pin for positioning the workpiece provided by the customer can be directly mounted.



Reduces labour time by integrating the cylinder and guide.

- Reduction in design labour
- Reduction in assembly labour



Magnetic field resistant auto switches are mountable.

- Solid state auto switch D-P3DWA□/D-P4DW□



Built-in coil scraper

Removes welding spatters, foreign matter, cutting chips, etc. sticking to the piston rod.

Spatter Resistant Cylinders for Arc Welding

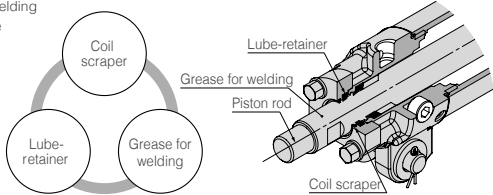
Series CKG, CDQ2, CA2, MB, MGPM, MK2T-XC88/XC89/XC91

XC88/XC89

Drastically reduces spatter adhesion by the use of three roles in one unit.

Spatter Resistant Cylinders for Arc Welding

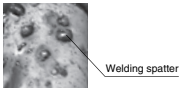
- Achieves long service life by the use of the three roles of the coil scraper, Lube-retainer and grease for welding in one unit for a cylinder.
- Reduces spatter adhesion.



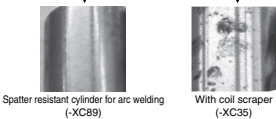
Improved cylinder durability

Spatter does not easily adhere to the piston rod of the spatter resistant cylinders for arc welding, which improves durability.

Spatter adhesion condition on piston rod (compared with coil scraper type) \*Piston rod (S45C)



**Welding Condition**  
Iron welding: CO2 welding  
Welding distance: 150 mm (Continuous welding distance)  
Welding position: Upper part (150 mm)



Reduces cylinder maintenance labour

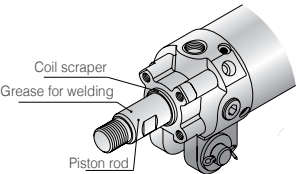
Improved durability reduces the maintenance frequency, number of replacements and man hours.

Piston rod materials can be selected for the welding conditions and environment

Part no.	Piston rod material (Hard chrome plating)		Coil scraper	Lube-retainer	Grease for welding
	S45C	Stainless steel 304			
-XC88	—	●	●	●	●
-XC89	●	—	●	●	●

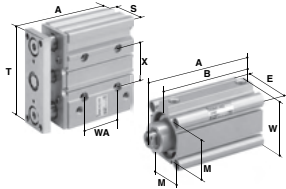
XC91

Improved spatter resistance with coil scraper and welding grease



Part no.	Piston rod material (Hard chrome plating)	Coil scraper	Grease for welding
-XC91	S45C	●	●
-XC35	—	●	—

External and mounting dimensions are compatible with coil scraper type (-XC35).



\* Dimension symbols are the same as those of each series.

Reduces cylinder maintenance labour

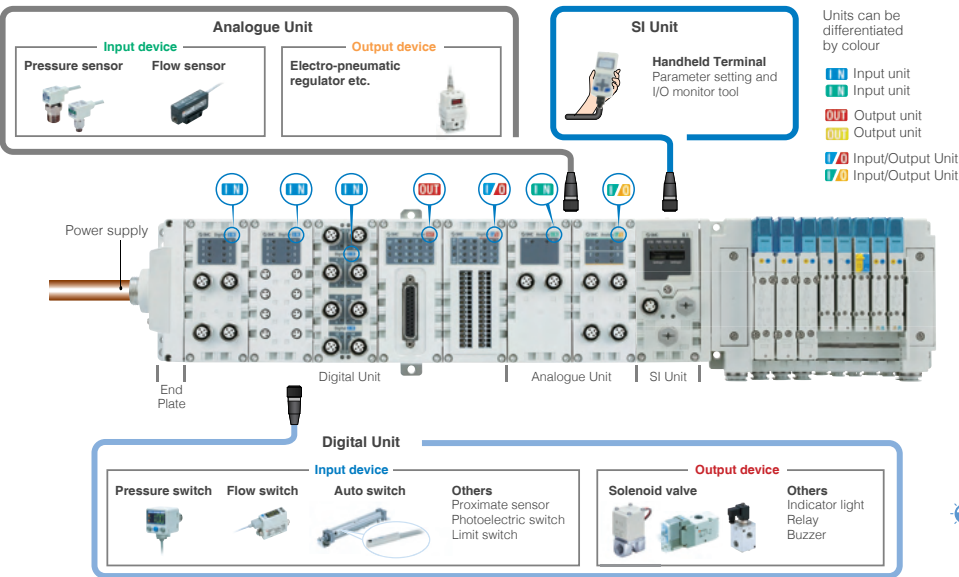
Improved durability reduces the maintenance frequency, number of replacements and man hours.

Applicable Cylinders

Clamp Cylinder CKG-XC88/XC89/XC91	Compact Cylinder CDQ2-XC88/XC89/XC91	Air Cylinder CA2-XC88/XC89/XC91
Air Cylinder MB-XC88/XC89/XC91	Compact Guide Cylinder MGPM-XC88W/XC89W/XC91	Rotary Clamp Cylinder Double Guide Type MK2T-XC89/XC91

Fieldbus system, integrated type (for input/output)

EX600 Series



- Centralised & compact fieldbus system
- Valve output system for driving 5 port solenoid valves
- Up to 9 input/output units either digital or analogue, can be connected in any order
- Up to IP67 enclosure protection
- Dual port SI unit for EtherNet/IP™ that allows for DLR topology
- QuickConnect™ function
- Web server function
- Self diagnosis function
- Handheld terminal
- Applicable valve series: SY, S0700, VQC, SV.

SI units

Part number	Type of unit / Description	No. of inputs/outputs	Polarity	Communication connector	Enclosure protection
EX600-SEN1	SI unit, EtherNet/IP™ (1 port)	- / 32	PNP	M12 connector (5 pins)	IP67
EX600-SEN3	SI unit, EtherNet/IP™ (2 ports)				
EX600-SPN1	SI unit, PROFINET				
EX600-SEC1	SI unit, EtherCAT®				
EX600-SDN1A	SI unit, DeviceNet™				
EX600-SPR1A	SI unit PROFIBUS DP				
EX600-SMJ1	SI unit CC-Link				

## 2-Colour display digital flow switch

PFM/PFMB Series



Wide range of flow measurement with one product



### ► Reversed display mode

When the switch is used upside down, the orientation of the display can be rotated to make it easier to read.



### ► Repeatability: $\pm 1$ % F.S. or less

### ► Grease-free

### ► Flow adjustment valve integrated available.

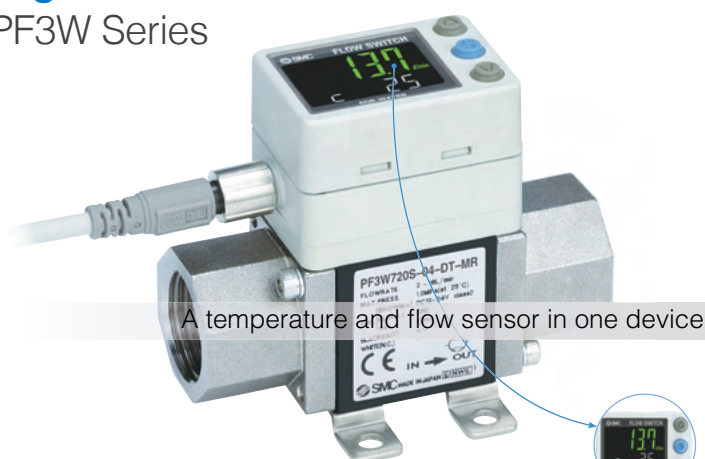
Reduced piping and space saving

### ► Response time: either 50 msec., 0.5 sec. 0.1 sec., 1 sec. or 2 sec. can be chosen

### ► Wide flow rate range: 10, 25, 50, 100, 200, 500, 1000 l/min

## Digital flow switch for water

PF3W Series



**Temperature sensor**  
Display range: -10 to 110 °C  
(Temperature sensor alone)  
Minimum setting unit: 1°C  
Analogue output: Current output/Voltage output

### ► Fluid temperature: 0 to 90 °C

### ► Ethylene glycol aqueous solution can be used.

### ► PVC piping type

Applicable fluid: Deionized water, chemical, etc.  
Integrated type and remote type available.



### ► Rotable display

Display can be rotated in increments of 45° to suit the installation conditions. Easy operation, improved visibility.  
Counterclockwise 90°  
Clockwise 225°.



### ► Remote type

#### - Remote sensor unit with indicator

Visually check status of via sensor via indicator.

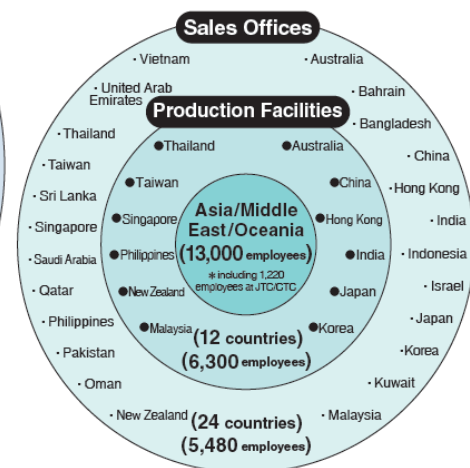
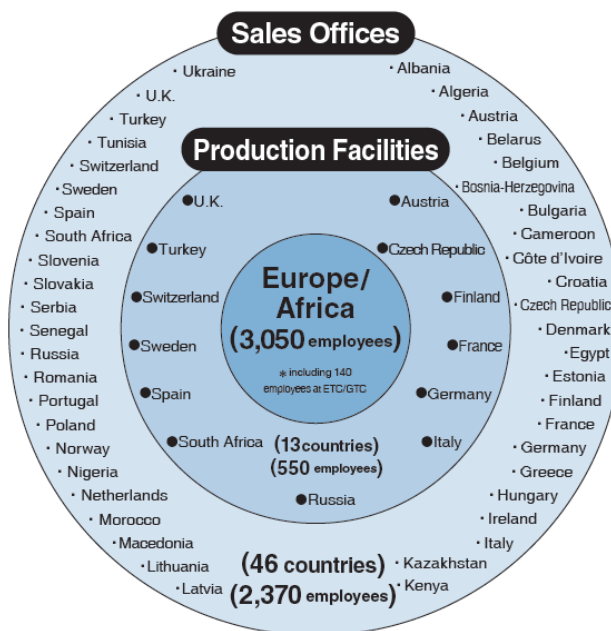
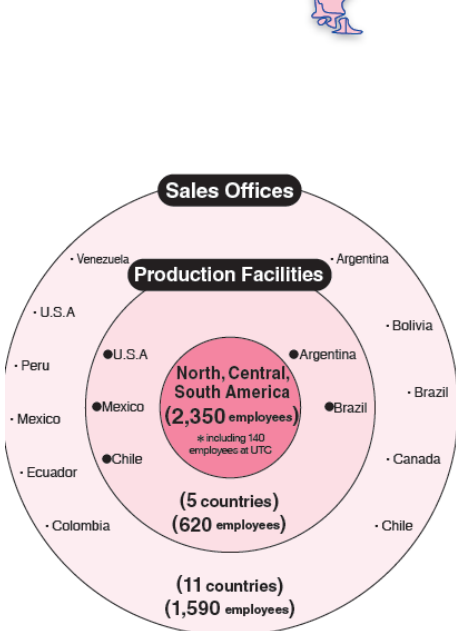
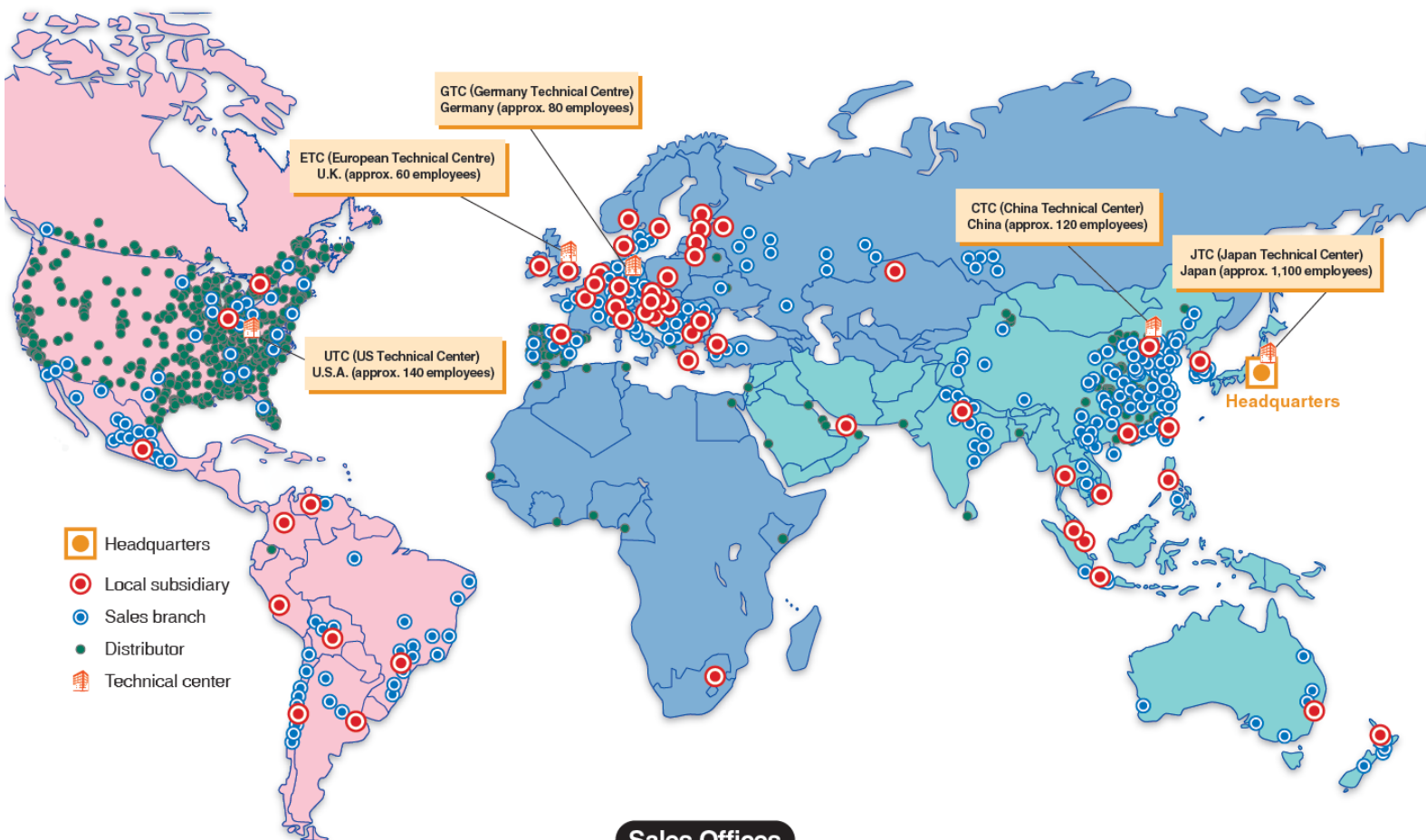


### - 3 colour display digital flow monitor

- Can copy to up to 10 switches simultaneously.
- Reducing setting labour.
- Minimising risk of mistakes in setting.



# Supporting our customers around the world.



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