

# TA-SCOPE



## Instruments

Balancing instrument

# TA-SCOPE

TA-SCOPE is a tough, effective balancing instrument for measuring and documenting of differential pressure, flow, temperature and power in hydronic systems. Robust, accurate and easy-to-use, TA-SCOPE delivers quicker, more cost-efficient balancing and enables rapid troubleshooting. TA-SCOPE links effortlessly to the HySelect PC software gaining the maximum benefit from recorded data and enabling professional report writing and automatic software upgrades.



## Technical description

### Functions:

TA-SCOPE is a balancing instrument for measuring and documenting of differential pressure ( $\Delta p$ ), flow, temperature and power in hydronic systems.

### Measurement range:

Total pressure:  
TA-SCOPE max. 232 psi  
TA-SCOPE HP max. 362 psi  
Differential pressure:  
TA-SCOPE 0 - 72.5 psi  
TA-SCOPE HP 0 - 145 psi  
Recommended pressure range during flow measurements:  
TA-SCOPE 0.02 - 72.5 psi  
TA-SCOPE HP 0.5 - 145 psi

### Temperature liquid medium measurement:

-4°F – +248°F

### Measurement deviation:

Differential pressure:  
TA-SCOPE 0.015 psi or 1% of reading, whichever is the highest  
TA-SCOPE HP 0.029 psi or 1% of reading, whichever is the highest  
Flow: as for differential pressure + valve deviation  
Temperature: <0.36°F

### Battery capacity, operating and charge times:

#### Handheld unit:

- battery capacity: 4 400 mAh
- operating time (with backlight on): >25 h
- charge time to full capacity: 6-7 h

#### DpS-Visio (Dp sensor unit):

- battery capacity: 1 400 mAh
- operating time (continuous measurements): >25 h
- charge time to full capacity: 2.5 h
- Logging time (in sleep mode): >100 days

### Ingress protection:

Handheld unit (in wireless mode): IP64  
Dp sensor unit (in wireless mode): IP64  
Safety pressure and temperature probe: IP65  
Digital temperature sensor: IP65

### Ambient temperature for the instrument:

During operation and charging: +32 – +104°F  
During storage\*: -4 – +150°F  
\*) Do not leave water in the sensor when there is a risk of freezing.

### Humidity:

Ambient humidity: max. 90%RH

### Charger:

Input voltage: 100-240 VAC  
Input frequency: 50-60 Hz  
Connectors: EU, UK, US, AU/NZ

### Case dimensions:

TA-SCOPE Premium case:  
LxWxH = 16.9x11.2x6.69 in  
TA-SCOPE case:  
LxWxH = 13.2x11.4x5.9 in

## Construction

TA-SCOPE consists of two main components:

**Handheld unit** – computer-based unit programmed with the TA valve characteristics. Straightforward functions with easy-to-follow instructions on the colour display.

**Differential Pressure Sensor unit** – the DpS-Visio communicates wirelessly with the Handheld and has an OLED display for showing its status, measured data and other information.

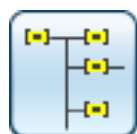
TA-SCOPE automatically performs calibration when needed. The design of the sensor unit and a short flow-through during calibration eliminate measurement errors caused by insufficient venting of the measuring device.

## Hydronic functions



### Quick Measure

Straightforward function to measure flow, differential pressure ( $\Delta p$ ), temperature and power. To be used when only one or a few valves are of interest. The function does not require any predefinition of network or module.



### Hydronic Networks

Complex networks created in HySelect are easily downloaded to TA-SCOPE. Use a network for measuring and balancing at any time; during commission, for control and inspection. All hydronic functions can be applied to a selected valve from a Hydronic Network.



### Balancing

The powerful TA-Wireless and TA-Diagnostic methods for balancing hydronic systems. TA-Wireless makes use of two Dp sensors with wireless technology to easily perform balancing of a hydronic module. With TA-Diagnostic, you measure all valves in a module. The method calculates a Dp diagnostic for the module and correct valve openings to attain design flows.



### Troubleshooting

Software wizards take you step-by-step through the process of locating and diagnosing problems and errors in hydronic systems, e.g., Dp ( $\Delta p$ ) analysis.



### Data Logging

Measurement during a predetermined period of time to analyse any fluctuations in flow, differential pressure ( $\Delta p$ ), temperature and power. The logged data is stored and listed or displayed as a graph, both in TA-SCOPE and HySelect.

## Support functions



### Fluid

Settings of fluid in the system to be explored and diagnosed. Water is the most common fluid in hydronic systems but water with various additives can also be handled by TA-SCOPE.



### Hydronic calculator

Perform calculations based on the relationship between flow, differential pressure ( $\Delta p$ ), Cv value, power and differential temperature ( $\Delta T$ ). The function also gives guidance in selecting pipes and valves when designing hydronic systems and enables unit conversions.



### Settings

Manage adjustments regarding the instrument and appearance of information from the Settings function.



### Information

Displays information like software version, last calibration and battery details on Handheld, Dp Sensor and also Temperature Sensor when connected.

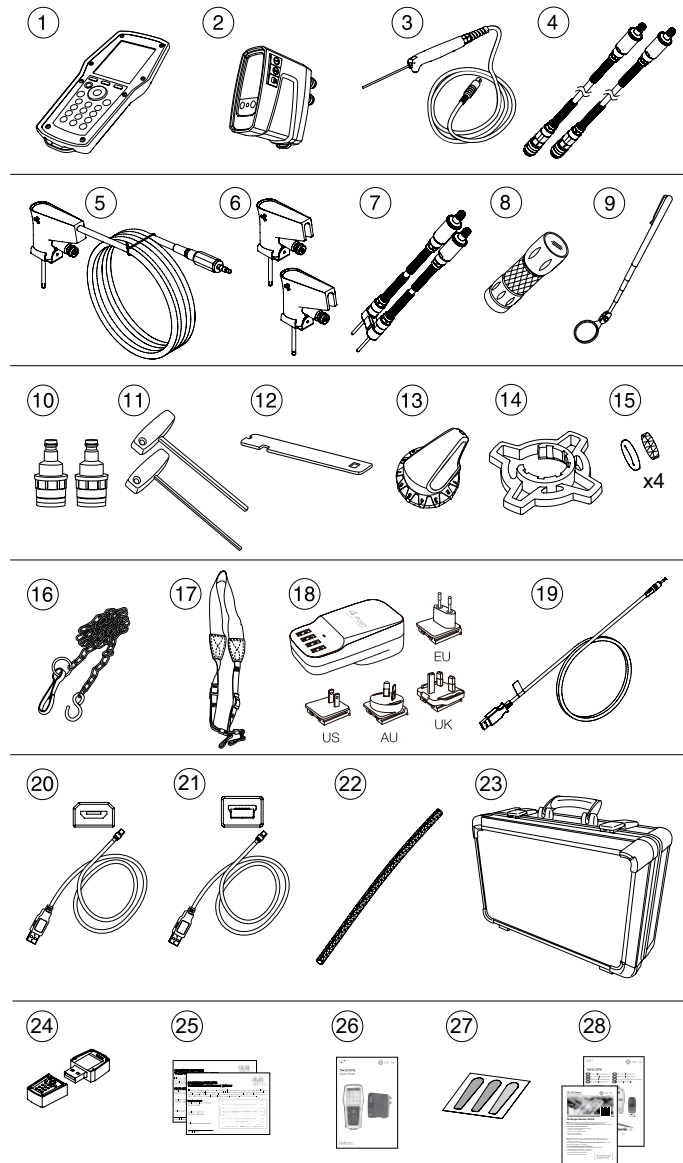
## Case contents

### TA-SCOPE Premium

TA-SCOPE Premium case is a larger robust partitioned case. Compared to the normal case, it includes:

- Combined safety pressure and temperature probe allowing automatic correction for fluid temperature and easier power measurement,
- A large set of accessories,
- Extra space for a second (optional) differential pressure sensor and tools.

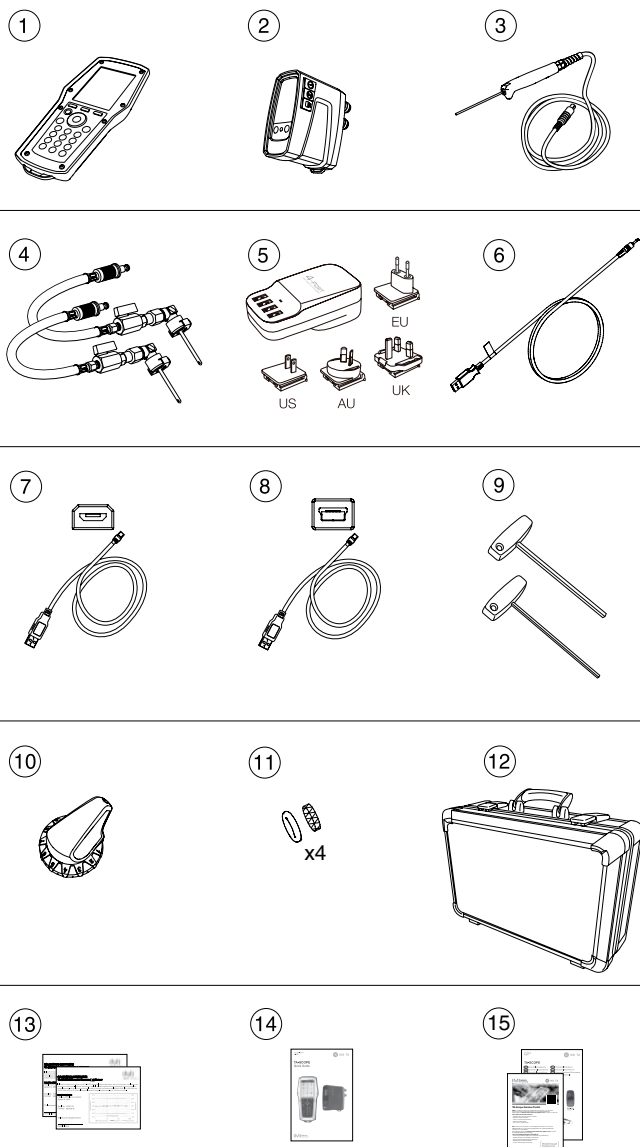
1. Handheld unit (Hh)
2. Dp Sensor unit (DpS-Visio)
3. Digital Temperature Sensor (DTS)
4. Measuring hoses, 20 in., red/blue
5. Safety pressure and temperature probe (SPTP)
6. Safety pressure probes (SPP)
7. Measuring hoses with twin needle, 6 in.
8. Flashlight
9. Mirror
10. Chucks for older valves, red/blue
11. Allen Keys 3 mm/5 mm
12. Spanner for measuring points on older valves
13. Presetting tool TBV-C,-CM, (-CMP)
14. Grip tool for setting wheel TA-COMPACT-P/-DP and TA-Modulator (DN 15-32)
15. Spare filters and O-rings for hoses (4 pcs)
16. Chain for mounting
17. Neckstrap
18. Multi-charger for Handheld and Dp Sensor(s) (EU, UK, US, AU/NZ)
19. USB cable for charging;  
Hh - Multi-charger
20. USB cable for connection/charging;  
Hh - DpS-Visio /  
PC - DpS-Visio /  
DpS-Visio - Multi-charger
21. USB cable for connection;  
Hh - PC
22. Cable wrapping
23. Case
24. USB stick with manual and HySelect software
25. Calibration certificates for DpS-Visio, DTS and SPTP
26. Quick Guide
27. SPTP/SPP stickers
28. TA-SCOPE Portal/Guarantee/Service/Calibration form



## TA-SCOPE

TA-SCOPE case is a robust partitioned case. It is smaller and contains a reduced set of accessories compared to the Premium case.

1. Handheld unit (Hh)
2. Dp Sensor unit (DpS-Visio)
3. Digital Temperature Sensor (DTS)
4. Measuring hoses with probe
5. Multi-charger for Handheld and Dp Sensor(s) (EU, UK, US, AU/ NZ)
6. USB charging cable;  
Hh - Multi-charger
7. USB cable for connection/charging;  
Hh - DpS-Visio /  
PC - DpS-Visio /  
DpS-Visio - Multi-charger
8. USB cable for connection;  
Hh - PC
9. Allen Keys 3 mm/5 mm
10. Presetting tool TBV-C, -CM, (-CMP)
11. Spare filters and O-rings for hoses (4 pcs)
12. Case
13. Calibration certificates for DpS and DTS
14. Quick Guide
15. TA-SCOPE Portal/Guarantee/Service/Calibration form



## TA-SCOPE Premium / TA-SCOPE HP Premium



### TA-SCOPE Premium

Version*		Article No
INT	International version	52 199-002
LAM	Latin America	52 199-018
US	USA	52 199-014

### TA-SCOPE HP Premium

Version*		Article No
INT	International version	52 199-102
LAM	Latin America	52 199-118
US	USA	52 199-114

\*) Version = Market related product range. All instrument versions include all of the above languages.

**Quick Guide included. User manuals available on USB stick.**

## TA-SCOPE / TA-SCOPE HP



### TA-SCOPE

Version*		Article No
INT	International version	52 199-202
LAM	Latin America	52 199-218
US	USA	52 199-214

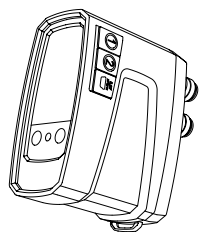
### TA-SCOPE HP

Version*		Article No
INT	International version	52 199-302
LAM	Latin America	52 199-318
US	USA	52 199-314

\*) Version = Market related product range. All instrument versions include all of the above languages.

**Quick Guide included. User manual available for download on [www.imi-hydronic.com](http://www.imi-hydronic.com).**

## Additional equipment

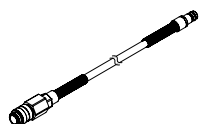


### Dp sensor unit (DpS-Visio)

The handheld unit (Hh) can communicate with several Dp sensor units (DpS-Visio). Establish communication by connecting the cable (included in the TA-SCOPE case) between the handheld unit and the Dp sensor unit.

Included: 2 measuring hoses 500 mm, 2 identification rings, 2 safety pressure probes (SPP) and 1 charging cable.

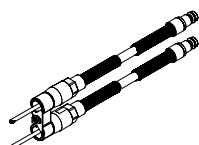
Version		Article No
Standard	0-72.5 psi	52 199-971
HP (high pressure)	0-145 psi	52 199-972



### Measuring hose

For use with SPP and SPTP

Length [in]		Article No
20	Red	52 199-953
20	Blue	52 199-954



### Measuring hose with twin needle

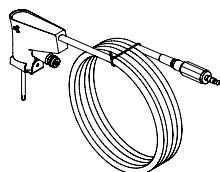
Length [in]		Article No
6		52 199-999



### Safety pressure probe (SPP)

For use with measuring hoses 52 199-953/-954 and extended hoses 52 199-997/-998.

Article No
52 199-951



### Safety pressure and temperature probe (SPTP)

For use with measuring hoses 52 199-953/-954 and extended hoses 52 199-997/-998.

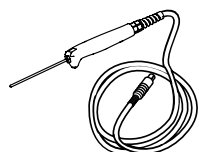
Article No
52 199-952



### Cable wrapping

To keep SPTP cable and hose together

Article No
310 355-01



### Digital temperature sensor (DTS)

Article No
52 199-941

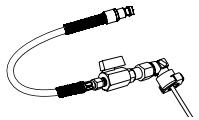
## Accessories



### Measuring hose

With shut-off valve

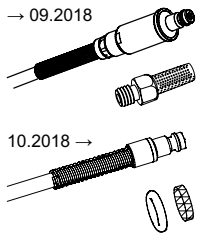
Length		Article No
20 in.	Red	52 199-995
20 in	Blue	52 199-996
9.8 ft.	Red	52 199-997
9.8 ft.	Blue	52 199-998



### Measuring hose with measuring needle, angle

Hose and needle can't be disconnected.

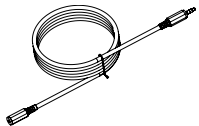
Length		Article No
20 in.	Red	311 074-61
20 in.	Blue	311 074-60



### Filter

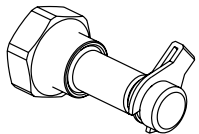
Spare part to measuring hoses

		Article No
→ 09.2018	1 pc	309 206-01
10.2018 →	4 pcs	311 062-62



### Extension cable for digital temperature sensor

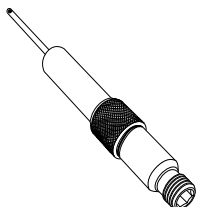
Length [ft]	Article No
16.4	52 199-994



### Measuring nipple

Thread connections G1/2 and G3/4

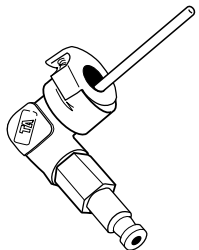
	Article No
G1/2	52 197-303
G3/4	52 197-304



### Measuring point, extension 2.36 in.

Can be installed without draining of the system.  
AMETAL®/Stainless steel/EPDM

L [in]	Article No
2.36	52 179-006



### Measuring needle, angle

	Article No
	307 635-62





### Chucks

For older valves and TA-BVS

#### Article No

Red	309 748-60
Blue	309 748-61

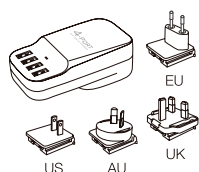


### Identification rings

"DpS 1" and "DpS 2" for marking the DpS-Visio when using TA-Wireless.  
To be placed on measuring hoses.

#### Article No

DpS 1	310 399-01
DpS 2	310 399-02

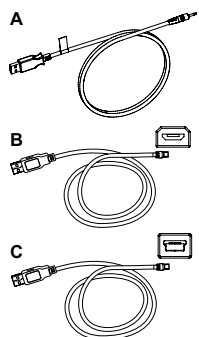


### Multi-charger

With 4 USB plugs.  
Excl. charging cables.

#### Article No

EU, UK, US, AU/NZ	311 100-01
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### Cables

To connect or charging different devices.

#### Article No

<b>Cable A</b>	
Handheld - Multi-charger	310 397-02
<b>Cable B</b>	
Handheld - DpS-Visio / PC - DpS-Visio / DpS-Visio - Multi-charger	310 278-02
<b>Cable C</b>	
Handheld - PC / Handheld - DpS (up to 08.2017)	310 278-01





