

Climate  
Control

IMI TA

# 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.

## Key features

### User-friendly design

Ergonomic and custom designed user-interface ensures easy and more comfortable balancing.

### Interactive software

Step by step software wizards for measuring, balancing and trouble shooting ensure a fast commissioning process.

### Wireless communication

For reliable balancing, a fully charged TA-SCOPE provides three days of power-efficient wireless performance.

### DpS-Visio

The Dp Sensor has an OLED display for showing Dp measurement, temperature and status. It also has an automatic flushing and calibration function.



## 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. 1 600 kPa  
TA-SCOPE HP max. 2 500 kPa  
Differential pressure:  
TA-SCOPE 0 - 500 kPa  
TA-SCOPE HP 0 - 1 000 kPa  
Recommended pressure range during flow measurements:  
TA-SCOPE 1 - 500 kPa  
TA-SCOPE HP 3 - 1 000 kPa

### Temperature liquid medium measurement:

-20°C – +120°C

### Measurement deviation:

Differential pressure:  
TA-SCOPE 0.1 kPa or 1% of reading, whichever is the highest  
TA-SCOPE HP 0.2 kPa or 1% of reading, whichever is the highest  
Flow: as for differential pressure + valve deviation  
Temperature: <0.2°C

### 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: 0 – +40°C  
During storage\*: -20 – +60°C  
\*) 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 = 426x290x159 mm  
TA-SCOPE case:  
LxWxH = 335x290x150 mm

## Construction

TA-SCOPE consists of two main components:

**Handheld unit** – computer-based unit programmed with the IMI 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.

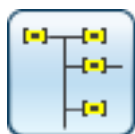
TA-SCOPE automatically performs calibration when needed. The design of the sensor unit and a short flow-through during calibration eliminate measurement errors caused by insufficient venting of the measuring device.

## 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 ( $\Delta p$ ), Kv 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.

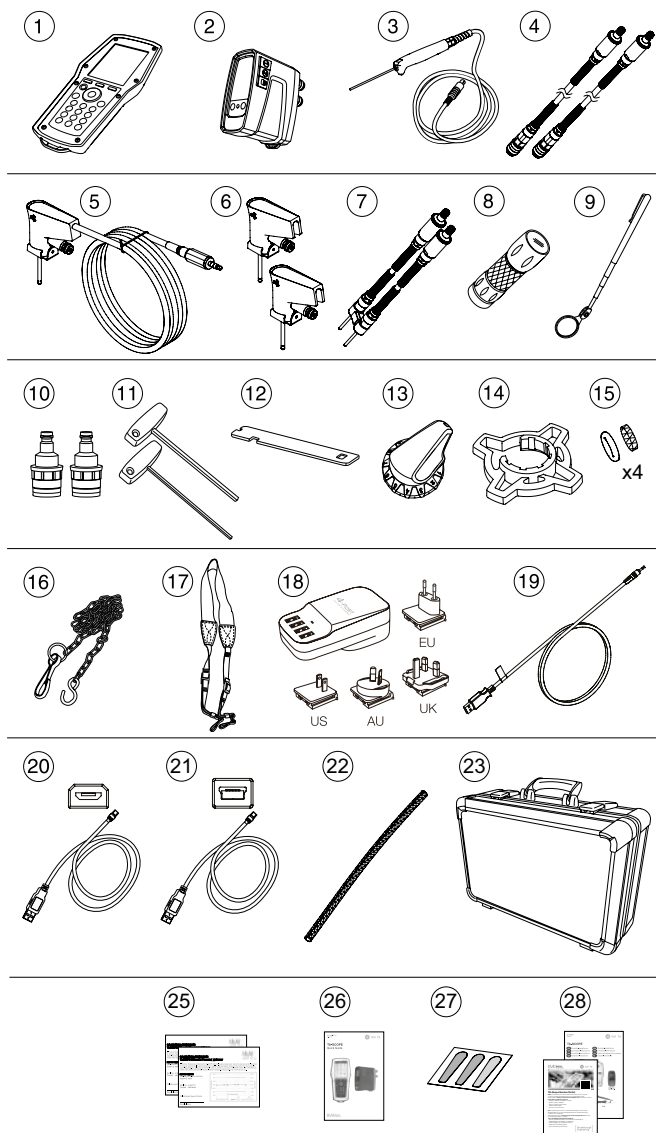
## Case contents

### 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, 500 mm, red/blue
5. Safety pressure and temperature probe (SPTP)
6. Safety pressure probes (SPP)
7. Measuring hoses with twin needle, 150 mm
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 10-32)
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
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

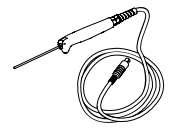
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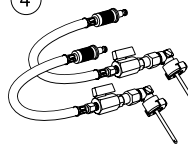
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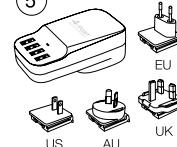
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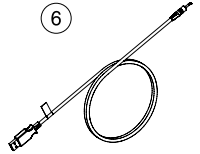
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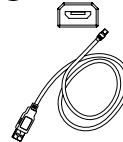
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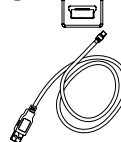
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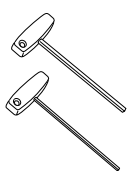
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⑧



⑨



⑩



⑪



⑫



⑬



⑭



⑮



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



### TA-SCOPE Premium

Version*		EAN	Article No
AT/DE	Austria/Germany	7318793982605	52 199-006
AU/NZ	Australia/New Zealand	7318793986603	52 199-023
BE	Belgium	7318793986702	52 199-024
CEE/CS	Central Eastern Europe	7318793982803	52 199-010
CEE/PL	Central Eastern Europe	7318793984609	52 199-011
CEE/RU	Central Eastern Europe	7318793984708	52 199-012
CEE/HU	Central Eastern Europe	7318793984807	52 199-013
CEE/EN	Central Eastern Europe	7318793986801	52 199-025
CH	Switzerland	7318793985309	52 199-022
DK	Denmark	7318793984104	52 199-003
ES	Spain	7318793984500	52 199-009
FI	Finland	7318793984302	52 199-005
FR	France	7318793982704	52 199-007
GB	Great Britain	7318793985002	52 199-015
INT	International version	7318793982506	52 199-002
IT	Italy	7318793985200	52 199-021
JP	Japan	7318793986207	52 199-016
KR	Korea	7318793999603	52 199-026
LAM	Latin America	7318793986405	52 199-018
MEA	Middle East	7318793986306	52 199-017
NL	Netherlands	7318793984401	52 199-008
NO	Norway	7318793984203	52 199-004
SAS	South Asia	7318793986504	52 199-019
SE	Sweden	7318793982407	52 199-001
TR	Turkey	7318793999801	52 199-027
US	USA	7318793984906	52 199-014
zh-CN	China (simplified Chinese)	7318793985101	52 199-020
zh-TW	Taiwan (traditional Chinese)	7318794001206	52 199-029

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

Quick Guide included. User manual available for download on [climatecontrol.imiplc.com](http://climatecontrol.imiplc.com).

**TA-SCOPE HP Premium**

Version*		EAN	Article No
AT/DE	Austria/Germany	7318793987709	52 199-106
AU/NZ	Australia/New Zealand	7318793989406	52 199-123
BE	Belgium	7318793989505	52 199-124
CEE/CS	Central Eastern Europe	7318793988102	52 199-110
CEE/PL	Central Eastern Europe	7318793988201	52 199-111
CEE/RU	Central Eastern Europe	7318793988300	52 199-112
CEE/HU	Central Eastern Europe	7318793988409	52 199-113
CEE/EN	Central Eastern Europe	7318793989604	52 199-125
CH	Switzerland	7318793989307	52 199-122
DK	Denmark	7318793987402	52 199-103
ES	Spain	7318793988003	52 199-109
FI	Finland	7318793987600	52 199-105
FR	France	7318793987808	52 199-107
GB	Great Britain	7318793988607	52 199-115
INT	International version	7318793986900	52 199-102
IT	Italy	7318793989208	52 199-121
JP	Japan	7318793988706	52 199-116
KR	Korea	7318793999702	52 199-126
LAM	Latin America	7318793988904	52 199-118
MEA	Middle East	7318793988805	52 199-117
NL	Netherlands	7318793987907	52 199-108
NO	Norway	7318793987501	52 199-104
SAS	South Asia	7318793989000	52 199-119
SE	Sweden	7318793987303	52 199-101
TR	Turkey	7318793999900	52 199-127
US	USA	7318793988508	52 199-114
zh-CN	China (simplified Chinese)	7318793989109	52 199-120
zh-TW	Taiwan (traditional Chinese)	7318794001305	52 199-129

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

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## TA-SCOPE / TA-SCOPE HP



### TA-SCOPE

Version*		EAN	Article No
AT/DE	Austria/Germany	7318794006805	52 199-206
AU/NZ	Australia/New Zealand	7318794009806	52 199-223
BE	Belgium	7318794009905	52 199-224
CEE/CS	Central Eastern Europe	7318794007208	52 199-210
CEE/PL	Central Eastern Europe	7318794008601	52 199-211
CEE/RU	Central Eastern Europe	7318794008700	52 199-212
CEE/HU	Central Eastern Europe	7318794008809	52 199-213
CEE/EN	Central Eastern Europe	7318794010000	52 199-225
CH	Switzerland	7318794009707	52 199-222
DK	Denmark	7318794006508	52 199-203
ES	Spain	7318794007109	52 199-209
FI	Finland	7318794006706	52 199-205
FR	France	7318794006904	52 199-207
GB	Great Britain	7318794009004	52 199-215
INT	International version	7318794006409	52 199-202
IT	Italy	7318794009608	52 199-221
JP	Japan	7318794009103	52 199-216
KR	Korea	7318794010109	52 199-226
LAM	Latin America	7318794009301	52 199-218
MEA	Middle East	7318794009202	52 199-217
NL	Netherlands	7318794007000	52 199-208
NO	Norway	7318794006607	52 199-204
SAS	South Asia	7318794009400	52 199-219
SE	Sweden	7318794006300	52 199-201
TR	Turkey	7318794010208	52 199-227
US	USA	7318794008908	52 199-214
zh-CN	China (simplified Chinese)	7318794009509	52 199-220
zh-TW	Taiwan (traditional Chinese)	7318794010307	52 199-229

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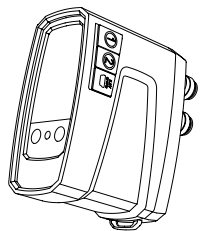
### TA-SCOPE HP

Version*		EAN	Article No
AT/DE	Austria/Germany	7318794007802	52 199-306
AU/NZ	Australia/New Zealand	7318794011601	52 199-323
BE	Belgium	7318794011700	52 199-324
CEE/CS	Central Eastern Europe	7318794008205	52 199-310
CEE/PL	Central Eastern Europe	7318794010406	52 199-311
CEE/RU	Central Eastern Europe	7318794010505	52 199-312
CEE/HU	Central Eastern Europe	7318794010604	52 199-313
CEE/EN	Central Eastern Europe	7318794011809	52 199-325
CH	Switzerland	7318794011502	52 199-322
DK	Denmark	7318794007505	52 199-303
ES	Spain	7318794008106	52 199-309
FI	Finland	7318794007703	52 199-305
FR	France	7318794007901	52 199-307
GB	Great Britain	7318794010802	52 199-315
INT	International version	7318794007406	52 199-302
IT	Italy	7318794011403	52 199-321
JP	Japan	7318794010901	52 199-316
KR	Korea	7318794011908	52 199-326
LAM	Latin America	7318794011106	52 199-318
MEA	Middle East	7318794011007	52 199-317
NL	Netherlands	7318794008007	52 199-308
NO	Norway	7318794007604	52 199-304
SAS	South Asia	7318794011205	52 199-319
SE	Sweden	7318794007307	52 199-301
TR	Turkey	7318794012004	52 199-327
US	USA	7318794010703	52 199-314
zh-CN	China (simplified Chinese)	7318794011304	52 199-320
zh-TW	Taiwan (traditional Chinese)	7318794012103	52 199-329

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

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## Additional equipment

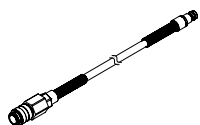


### Dp sensor unit (DpS-Visio)

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.

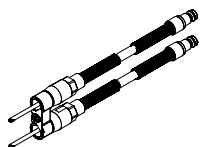
Version		EAN	Article No
Standard	0-500 kPa	7318794034204	52 199-971
HP (high pressure)	0-1000 kPa	7318794034303	52 199-972



### Measuring hose

For use with SPP and SPTP

Length [mm]		EAN	Article No
500	Red	7318793998507	52 199-953
500	Blue	7318793998606	52 199-954



### Measuring hose with twin needle

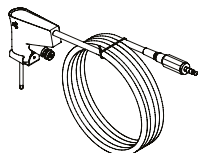
Length [mm]		EAN	Article No
150		7318793985903	52 199-999



### Safety pressure probe (SPP)

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

	EAN	Article No
	7318793998309	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.

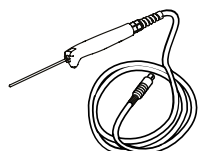
	EAN	Article No
	7318793998408	52 199-952



### Cable wrapping

To keep SPTP cable and hose together

	EAN	Article No
	7640161635791	310 355-01



### Digital temperature sensor (DTS)

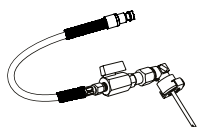
	EAN	Article No
	7318793983503	52 199-941

## Accessories



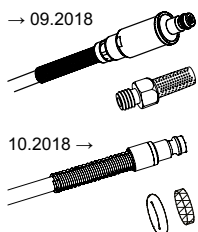
**Measuring hose**  
With shut-off valve

Length [m]		EAN	Article No
0.5	Red	7318793985507	52 199-995
0.5	Blue	7318793985606	52 199-996
3	Red	7318793985705	52 199-997
3	Blue	7318793985804	52 199-998



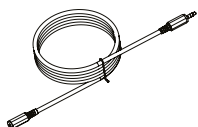
**Measuring hose with measuring needle, angle**  
Hose and needle can't be disconnected.

Length [m]		EAN	Article No
0.5	Red	7318794044906	311 074-61
0.5	Blue	7318794045002	311 074-60



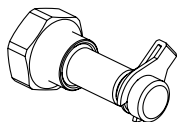
**Filter**  
Spare part to measuring hoses

		EAN	Article No
→ 09.2018	1 pc	7318793741301	309 206-01
10.2018 →	4 pcs	7318794044807	311 062-62



**Extension cable for digital temperature sensor**

Length [m]	EAN	Article No
5	7318793985408	52 199-994



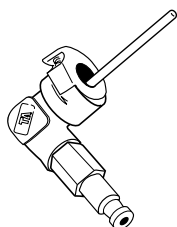
**Measuring nipple**  
Thread connections G1/2 and G3/4

	EAN	Article No
G1/2	7318793536808	52 197-303
G3/4	7318793536907	52 197-304



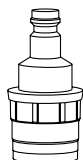
**Measuring point, extension 60 mm**  
Can be installed without draining of the system.  
AMETAL®/Stainless steel/EPDM

L	EAN	Article No
60	7318792812804	52 179-006



**Measuring needle, angle**

EAN	Article No
7318793787507	307 635-62



**Chucks**  
For older valves and TA-BVS

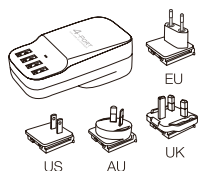
	EAN	Article No
Red	7318793786609	309 748-60
Blue	7318793786708	309 748-61



### Identification rings

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

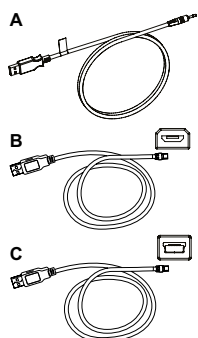
	EAN	Article No
DpS 1	7640161635807	310 399-01
DpS 2	7640161635814	310 399-02



### Multi-charger

With 4 USB plugs.  
Excl. charging cables.

	EAN	Article No
EU, UK, US, AU/NZ		311 100-01



### Cables

To connect or charging different devices.

	EAN	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	7318794045101	310 278-02
<b>Cable C</b>		
Handheld - PC / Handheld - DpS (up to 08.2017)	7318793996305	310 278-01