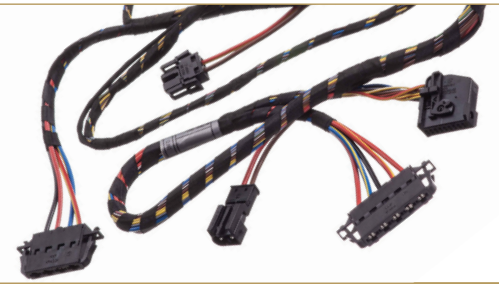


Cable Test Probes

Testing of Cable Harness

Contacting of Plug Connectors



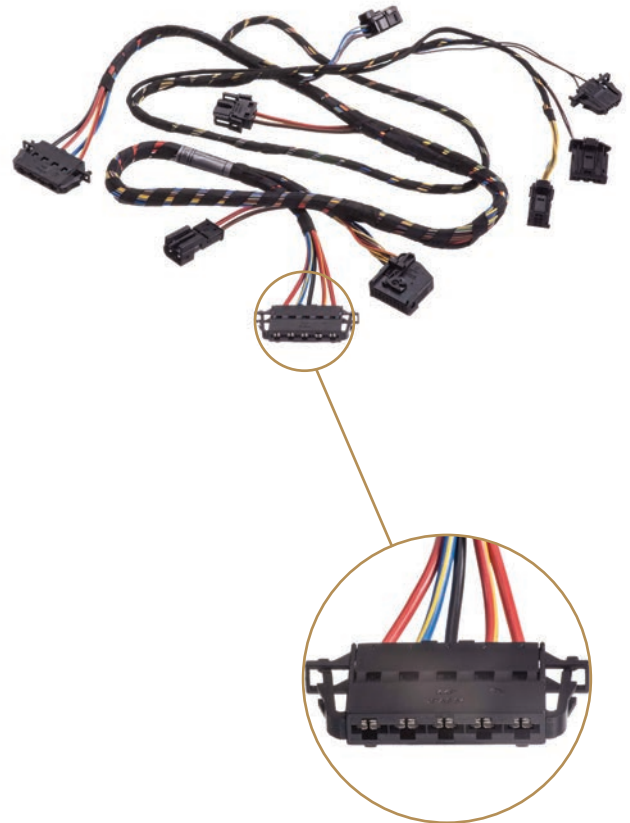
Cable Harness Testing

Connection Test, Position Test, Push-back Test, Function Test

Cable harnesses are the central connection elements between various components in the automotive industry and mechanical engineering, and supply these with either power or signals.



A cable harness consists of several cables with pre-wired plugs. The plugs connected with their contact terminals are responsible for secure contact.



To guarantee uninterrupted operation, high demands are placed on the cable harness. The cable harness has to pass various tests before it is fitted.

The connection test checks whether the pre-wired cable is connected in the correct position in the connector housing. The position test ensures the correct position of the contact terminals in the connector housing. The push-back test is carried out to verify whether or not the contact terminals can be pushed back.

During the function test the cable harness is tested according to its intended purpose, with the corresponding current and voltage.

INGUN offers a wide variety of cable test probes for the above mentioned test procedures. These are usually modules built into test benches, into which the plugs are inserted.



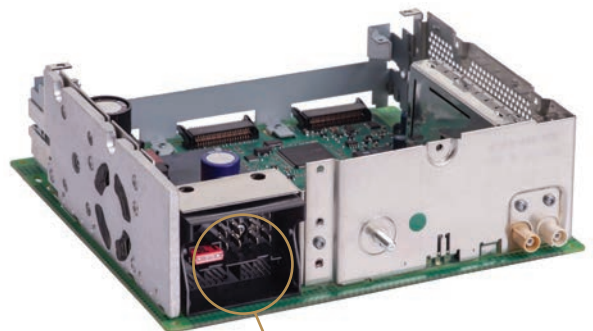
INGUN Test Solutions - Made in Germany

- Universal screw-in probes
- Step probes
- High current probes
- Switching probes
- Non-rotating test probes
- Push-back probes
- Dipole probes / 4-wire measurement
- High frequency probes
- Tools and accessories

Plug Connector Contacting

Flat Connector, Jacks and Pins, FAKRA, HSD, USB, RJ45

Plug connectors are not only on cables, but also mounted on various PCBs for electronic devices, for example, radio- and navigation systems, PCs, laptops, control units and smart devices. These can be various plug connectors, such as flat connectors, jacks, pins, FAKRA, HSD, USB or RJ45.



INGUN offers various test probes depending on the plug connector.

For example, non-rotating probes are used to test flat connectors. This ensures a correct alignment. Depending whether jacks or pins are used, there are many various tip styles and spring forces available.

The test probes are often installed in an approach mechanism to perform the tests.



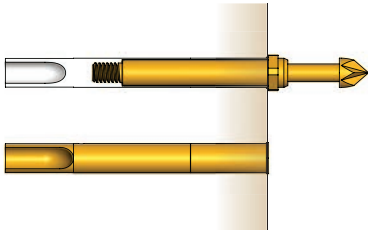
You will find a comprehensive overview of the cable test probes available in our current test probe catalogue.



Cable Test Probes

Applications and Products

Screw-in probes for universal use

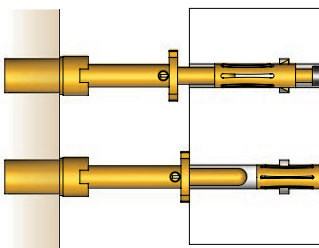


Many test probes to plug in offered by INGUN are also available as a screw-in version. Thus, a secure hold during testing is guaranteed. Screw-in probes are especially recommended for applications with possible vibrations or unwanted side forces and axial forces.

INGUN products

- GKS-050 M
- GKS-075 M
- GKS-100 M
- GKS-112 M
- GKS-113 M
- ...

Step probes for position test



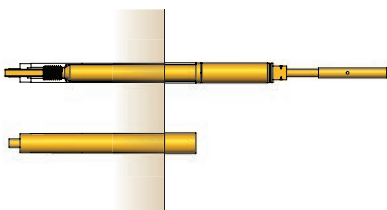
Step probes are inserted in the connector housings to test the correct position of the contact terminal (contact sheets). A contact will only be produced by the pin of the step probe when it is correctly positioned.

INGUN offers a wide variety of step probes with tip dimensions, stop collar (disk) dimensions, and pin lengths.

INGUN products

- T-112 M
- T-912 M
- T-899 M
- T-113 M
- T-888 M
- ...

Push-back probes for push-back test



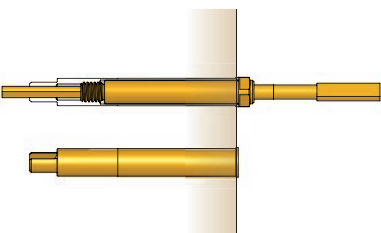
When finally plugging the plug connectors, it is important that the contact terminals (contact sheets) remain in the correct position and cannot be pushed back.

For this test, push-back probes with a spring force of up to 34 N are used.

INGUN products

- VF 25
- VF 3
- VF 4
- VF 5
- ...

Non-rotating test probes



For testing flat connector blades or jacks which can only be contacted in one position, non-rotating probes are used.

These probes are already aligned in the correct position during assembly.

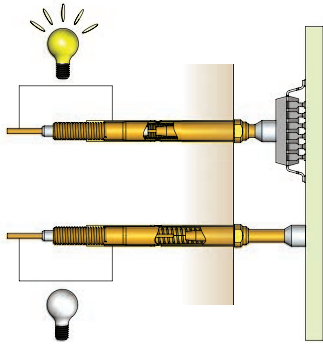
INGUN products

- GKS-098 M
- GKS-710
- GKS-746 M
- GKS-803 M
- ...

Cable Test Probes

Applications and Products

Switching test probes for universal component detection

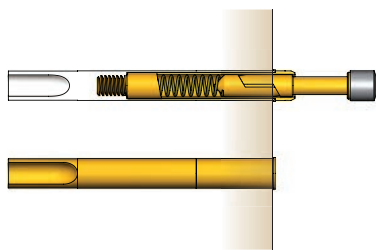


A wide area of applications is possible with the switching probes. When pressing the plunger the circuit is closed in the probe. Thus, the presence of components, open/closed checks and many more can be realised for instance.

INGUN products

- SKS-100
- SKS-215 MF
- SKS-415
- SKS-465 MF
- ...

High current probes for high current plug connectors

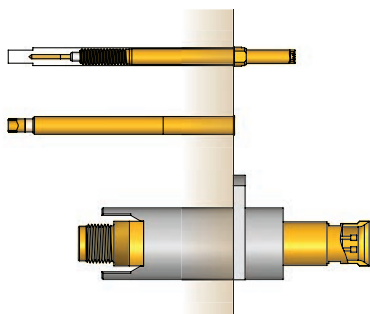


To transmit high currents, such as in function tests, high current probes are used. Due to their design, high current test probes have a very low internal resistance and warm only very slightly when loaded. The probes are also suitable for precise measurements.

INGUN products

- HSS-118 M
- HSS-120 M
- HSS-150 M
- HSS-621 M
- HSS-623 M
- ...

Dipole test probes and high frequency probes

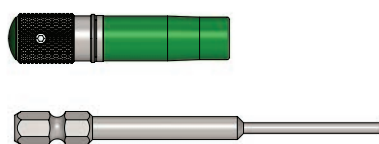


With dipole probes, 4-wire measurements to define resistance directly on the contact surface can be carried out. RF probes are used to securely transmit both analogue and digital signals, either directly on the PCB or plug connector, such as HSD or FAKRA.

INGUN products

- DPS-215 M
- DPS-465 M
- HFS-810
- HFS-819
- HFS-840
- ...

Tools and accessories for optimal test quality



Various tools, such as torque wrenches and bit inserts are available for optimal assembly of cable test probes. Secure testing can only be guaranteed with test probes which have been correctly screwed in.

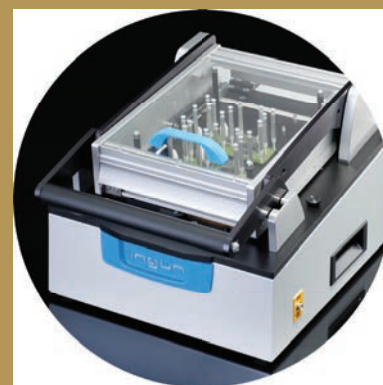
A wide variety of accessories are offered in order to realise the test requirements, such as side approach mechanism (SAM).

INGUN products

- DW-X-S
- Bit-GKS-xxx-M
- AW-KS-SET-CABLE
- SAM
- ...



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and
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by
INGUN



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