

*Sinn*

SPEZIALUHREN ZU FRANKFURT AM MAIN

# SERIES U50 HYDRO

DIVING WATCHES MADE OF GERMAN  
SUBMARINE STEEL WITH HYDRO TECHNOLOGY.





**U50 HYDRO S:** solid, expandable stainless-steel bracelet and Black Hard Coating on a TEGIMENT Technology basis.  
Warranty 3 years. ø 41 mm (scale: 1:1)



**U50 HYDRO SDR:** olive grey textile strap.  
Warranty 3 years. ø 41 mm (scale: 1:1)



**U50 HYDRO:** grey silicone strap with large folding clasp or butterfly folding clasp.  
Warranty 3 years. ø 41 mm (scale: 1:1)



**U50 HYDRO S** – back and side view.  
(scale: 1:1)



**U50 HYDRO S** – luminous design.  
(scale: 1:1)

## Series U50 HYDRO

Diving watches made of German Submarine Steel with HYDRO Technology.

Case and crown made of high-strength seawater-resistant German Submarine Steel

Waterproof and pressure-resistant up to 5,000 m diving depth (= 500 bar), certified by DNV

Tested based on European diving equipment standards and certified by DNV

Thanks HYDRO Technology for perfect readability even under water and freedom from reflection at any angle and completely free from fogging

Bezel with TEGIMENT Technology and therefore especially scratch-resistant

**U50 HYDRO SDR:** Bezel with Black Hard Coating on a TEGIMENT Technology basis

**U50 HYDRO S:** Black Hard Coating on a TEGIMENT Technology basis

Functionally reliable from  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

Captive diver's bezel with minute ratcheting

Crown at 4 o'clock to prevent pressure on the back of the hand

Sapphire crystal glass

Low pressure resistant

### Benefit of HYDRO Technology

When impressive functionality, perfect readability and technological innovation come together, the result is versatile and robust timepieces such as the watches in the U50 HYDRO series – all of which have a comfortable diameter size of 41 mm!

One of the outstanding features of the U50 HYDRO, U50 HYDRO SDR (diver's bezel with Black Hard Coating on a TEGIMENT Technology basis) and U50 HYDRO S (case and diver's bezel with Black Hard Coating on a TEGIMENT Technology basis) is concealed inside the diving watches, meaning that its incredible effect becomes most evident under water: HYDRO Technology. The benefits never fail to impress experienced users: reflection-free underwater readability from any angle, absolute freedom from fogging and – thanks to the special oil filling – water-resistant and pressure-resistant up to a diving depth of 5,000 m (= 500 bar).

Large picture on the front:

**U50 HYDRO SDR, U50 HYDRO and U50 HYDRO S.**  
Warranty 3 years.





From practice for practice: The test set-up proves that both the U50 HYDRO (left) and the UX (EZM 2B) can be read under water without reflections from the same flat angles as other diving watches thanks to HYDRO Technology, just as users are used to from a diving watch when not diving.

### Top suitability for everyday use

All three watches focus on a striking design with a display that concentrates on the essentials. They owe their outstanding suitability for everyday use to high-quality features with special materials, which ensure that the watches can withstand even the most adverse conditions. The case and crown are thus made of high-strength seawater-resistant German Submarine Steel. It is characterised by its extreme strength and exceptional non-magnetic properties. Another advantage that stands out for connoisseurs is its outstanding resistance to seawater. As a result, we have designed the rotating bezel to be captive in the case. Thanks to the use of TEGIMENT Technology to harden the surface, it can also easily withstand high external stresses. The result: exceptional scratch resistance. The positioning of the crown at 4 o'clock also deserves special attention. This prevents pressure on the back of the hand – even during physically demanding activities.

### Ultra-reliable function

Due to the aforementioned oil filling, these three timepieces must be quartz watches, as the oscillation of the balance in a mechanical watch would be unable to overcome the high friction resistance of a liquid medium. Nevertheless, watch lovers needn't forgo the reliability typical of SINN – the long-lasting lithium battery used ensures reliable function at temperatures ranging from -20 °C to +60 °C. The battery also has an exceptionally long service life. The movement's integrated EOL (end of life) function prevents the watch from stopping suddenly.

### Tested and certified

Whether for professional use or to cope with the demands of diving, all three watches are perfect for such challenges – as has also been confirmed by independent classification company DNV. On our behalf, it tests and certifies pressure resistance to a diving depth of 5,000 m (= 500 bar) and temperature resistance and functionality in accordance with the European diving device standards.



All of the technical details of our watches are documented by tests. This system of assessment has been specially designed for certification of the pressure resistance of our diving watches by DNV, the world's largest classification society for maritime safety.

DNV		Certificate No. A1644393-1E
<b>TEST CERTIFICATE</b>		
<b>Particulars of Manufacturer</b>		
Manufacturer:	Sinn Spezialuhren AG Frankfurt am Main	
Address:	Winkelweg 21, 65936 Frankfurt am Main, Germany	
<b>This is to certify:</b>		
Type for the diving watch type line:	SINN U50 HYDRO	
representing the list of serial nos.:	1051.0001-1051.2000	
<small>8 diving watches have been tested on basis of the relevant requirements of DNV Rules for Classification of Underwater Technology, DNV RJ UWT. Diving apparatus: Open circuit self-contained compressed air diving apparatus EN250:2014. Self-contained rebreathing diving apparatus EN 1443:2013.</small>		
<small><b>Temperature resistance and functional testing</b> The proper function of the watches could be determined directly after 3 hours of conditioning at -30°C as well as at +70°C and 95% relative humidity, respectively. Examinations were carried out in accordance with the requirements of the European standards EN250:2014 and EN14143:2003, as applicable to the EU Type-Examination of diving apparatus and were performed at the Zentrum für Sicherheitstechnik der BG Bau in Haan, Germany, as confirmed by test report no. ZS-16076, dated on 2023-10-26.</small>		
<small><b>External pressure testing</b> Hydraulic pressure tests have been performed under supervision of an authorized representative of DNV GL SE using officially calibrated pressure gauges on 2023-09-12. Testing was carried out as stated below. Test pressure / Corresponding water depth: 500 bar / 5000msw Cycles x Holding time: 1 x 1h Test media: Fresh water</small>		
<small>After pressure testing, no watch case deformations could be noticed. The proper function of the watches has been determined and a subsequently performed examination proofed the leak tightness of the tested specimen during the pressure test.</small>		
<small>Issued at Hamburg, Germany on: 2023-10-27</small>		
		<small>DNV</small> <small>DNV GL</small> <small>DNV GL</small> <small>DNV GL</small> <small>DNV GL</small> <b>Mohamed Khalife</b> <b>Inspection Engineer</b> <b>Underwater Technology</b>
		<small>Stamp: This document has been digitally signed and will therefore not have handwritten signatures.</small>
<small>Form code UWT-COC-01      Revision 2021-09      www.dnv.com      Page 1 of 1</small>		

DNV has confirmed and certified the pressure resistance and the type-based test of temperature resistance and functionality in accordance with the European diving device standards EN250 and EN14143.

## The long history of HYDRO

The use of HYDRO Technology in the U50 HYDRO series is just the culmination of more than 25 years of development and innovation. Indeed, we look back on an extremely successful history with this technology, not least because it is inextricably linked with such renowned names as the GSG 9. After all, in the case of the UX, professional users in particular appreciate the practical benefits of HYDRO Technology. The first model to unveil the technology was the 403 HYDRO in 1996. As well as setting the benchmark, this watch provided the inspiration for the next milestones, which were reached in 1997 with the launch of today's legendary mission timers: the EZM 1 – equipped with a mechanical movement – for the special unit of the Central Customs Support Group ZUZ (Zentrale Unterstützungsgruppe Zoll) and the EZM 2 – with HYDRO Technology – for the maritime unit of the German Border Protection Group 9 (GSG 9). Further highlights included the UX (EZM 2B) series and, above all, the UX GSG 9 (EZM 2B) series for the maritime unit of a special German police task force (2004/2005). Our UX S model has been used by soldiers in Germany's commando frogman force KSM (Kommando Spezialkräfte der Marine) since 2016.



Pioneer and trailblazer: Our model 403 HYDRO was the first to utilise HYDRO Technology was used for the first time in 1996.



Legendary mission timer from 1997: The EZM 2 with HYDRO Technology for the maritime unit of the German Border Protection Group 9 (GSG 9).

### The HYDRO Technology

Reflection-free readability underwater, completely free from fogging, waterproof and pressure-resistant up to a diving depth of 5,000 m (= 500 bar): the diving watch equipped with HYDRO Technology, such as our U50 HYDRO model series, offer these unbeatable advantages.

In a HYDRO watch case, the movement, dial and hands are held in a crystal-clear bath of fluid. This unusual principle has brilliant consequences: The mirroring of the glass underwater, which is otherwise unavoidable for diver's watches, does not take place (see also experimental set-up on page 3)! HYDRO watches are therefore also readable underwater, even from any angle, just as users of diving watches are used to when not diving. What's more, the integrated filling liquid is incompressible, i.e. cannot be compressed, and replaces the air inside the case, which always contains moisture. The reason for the characteristic mirroring effect is the total reflection on the bottom of the crystal. If the optical medium of the sapphire crystal is succeeded by the medium of air (looking towards the dial), the light will only be reflected and no longer refracted from a certain angle. This prevents the light from penetrating the interface between the sapphire crystal and the air-filled space containing the hands. From this angle, the effect is similar to that of looking at a mirror. The hands are no longer visible. Replacing the air in the cavity containing the hands with a fluid which shares the same optical characteristics as the sapphire crystal glass neutralises this effect, making the watch face fully readable even at highly oblique angles.

For more information on this technology, please visit: [www.sinn.de/en/HYDRO.htm](http://www.sinn.de/en/HYDRO.htm)

