
Hidrometrija - Uporaba brezdotičnih metod za merjenje hitrosti toka na vodni površini in ugotavljanje pretoka (ISO/DIS 24577:2026)

Hydrometry - Use of noncontact methods for measuring water surface velocity and determining discharge (ISO/DIS 24577:2026)

Hydrometrie - Einsatz berührungsloser Verfahren zur Messung der Wasseroberflächengeschwindigkeit und zur Bestimmung der Abflussmenge (ISO/DIS 24577:2026)

Hydrométrie - Emploi de méthodes sans contact pour mesurer la vitesse de surface de l'eau et pour déterminer le débit (ISO/DIS 24577:2026)

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Hydrometry — Use of noncontact methods for measuring water surface velocity and determining discharge

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This document was prepared by Technical Committee ISO/TC 113, *Hydrometry*, Subcommittee SC 1, *Velocity area methods*.

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Introduction

This document presents non-contact techniques for measuring water surface velocity and liquid flow in open channels. Water surface velocity can be measured with different technologies, such as radar or video images and then to be converted into discharge. These methods can be used either in the form of permanent installations at a gauge or as episodic measurements requiring human labor in actual field measurements. Especially for the episodic case the advantage of all non-contact types consists in including a safe distance from the water and thus serves to increase the safety of staff. Because of the availability of different measurement techniques, the user needs to select the most appropriate system in terms of site conditions, such as type of flow field, width of the channel or river, and installation conditions. To obtain discharge, the cross-sectional area of the flow field is also required. To estimate the cross-sectional area, the channel cross-sectional profile as well as water level should be measured. Whilst not covered explicitly in this Standard, care should also be taken in selection of the most appropriate bottom topography and water level measurement for the site conditions. For river flows, water surface and river flow conditions during target flood stages are key factors in selecting systems.

The structure of the following chapters reflects the typical order of any installation in practice, first acquiring the data which means choosing the method and installing the instruments. Gathering the first data will perhaps refine or redefine the measurement strategy. Then computational methods will be applied or improved. Finally regarding and reducing the uncertainties is an important consideration in order to provide quality-assured data from that measuring site.

The non-contact techniques for measuring water surface velocity are undergoing constant development. Therefore, this document can only aim to show the basic principles and their possibilities and limitations; a complete overview of all methods is not possible due to the dynamics in this area.

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