

Application data sheet

Measurement of minimum acceptable flow for "la Vire" river

Customer: Conseil Général d'Alençon (Alençon Departmental Council)
Site: "La Maugeautière" Pumping Station (France)

Definition:

Minimum acceptable flow is the minimum flow rate to be maintained in a water course perpendicular to a structure to preserve biological balance and water usage downstream. Consequently, sampling authorisations are limited. Minimum acceptable flow is not a hydrological concept; it is a regulatory requirement in Europe.

Description of the application:

To meet this regulatory requirement, the Alençon Departmental Council asked us (through the company Jousse) to install a flow meter on the Vire river, slightly upstream of "La Maugeautière" pumping station.

The water course at this point is around 7 to 8m wide. During low water periods, the depth of the water barely exceeds 30cm. Furthermore, the only available place to install the flow meter is located just after a large bend.



Description of the supply:

To meet all of these requirements, we installed a flow meter for small rivers made up of the following components:

- 1 UF322-CO/S converter,
- 2 interwoven chords made up of SM-1527 ultrasound probes,
- 1 pressure level measuring device.

Analysis of technological choices and advantages:

Measurements are taken using a SOFREL controller via an RS232 serial link. The choice of interwoven chords enabled the effects of the upstream bend in the river on the velocity profile to be offset.

The advantages of transit time measurements mean that:

- The full measurement scope could be covered, from low to high water levels
- Reliable and mean measurements could be ensured across the entire length of the chord, even though the velocity profile is not stable during low water periods.

The probes cleverly installed by Jousse are well protected and require little maintenance.

