FK-5 PRO

Break tank station for maximum protection against
backflow of category 5 non-potable water into drinking water systems

KEMPER

DRIVING PROGRESS

Health risk from non-potable water!

How to protect your drinking water system from category 5 fluids

Clean drinking water is central to our daily lives, health and well-being. A clear separation of drinking water and non-potable water is essential to maintain the quality of our most important foodstuff.

Drinking water and non-potable water: breakdown into fluid categories

Fluids are divided into categories 1 to 5, where categories 1 and 2 represent drinking water and do not pose a threat to health. Whereas, non-potable water, which is assigned to categories, 3, 4 and 5, can be harmful to human health!

Fluid category 5: Particular risk from microbiology!

Protecting against category 5 fluids is extremely important because they contain pathogens of infectious diseases. Not even tiny amounts of these fluids may come into contact with drinking water because they can cause serious illnesses. The microorganisms in these fluids can reproduce rapidly (even against the direction of flow in the installation) and contaminate the drinking water system on a large scale.

Maximum protection by strict separation of the drinking water system

According to DIN 1988-100 in conjunction with DIN EN 1717, a strict separation of category 5 fluids from the drinking water system is required here – a real challenge for the safety device! Type AB break tank stations are the perfect solution here: they meet the relevant requirements and ensure the greatest possible protection of the drinking water.

The safe solution: FK-5 PRO

The innovative FK-5 PRO break tank station guarantees a complete atmospheric separation by free drain into an open container. If there is backflow, back pressure or siphon backflow of non-potable water, the fluid is diverted via an overflow so that it does not come into contact with the drinking water connection. You can therefore be sure that you drinking water remains clean and there is no contamination.

Find out more about fluid categories and safety valves in our guidebook:

Typical applications of break tank stations with examples of danger zones with fluid category 5 in accordance with DIN 1988 Part 100, Application Table A1:

01 Underground irrigation
02 Drinking troughs
03 Outside taps
04 Process water
05 Watering roof gardens
06 Laboratories

Break tank station FK-5 PRO

Benefits at a glance

// Demand-based water supply and low-noise operation thanks to modulating pump
// High performance: flow rate up to 6 m³/h
// Increase the supply volume to up to 18 m³/h by means of parallel connection
// Promotes drinking water hygiene through programmable flushing cycles for the drinking water supply pipe
// Automation of the operating time via time control program
// Optional connection of external medium sources via a second supply pipe
// Easily view operating and plant data via BMS connection
// Can be connected to other PRO components for a digitised drinking water installation

kiwa CERTIFIED KUKreg4 ATS 3

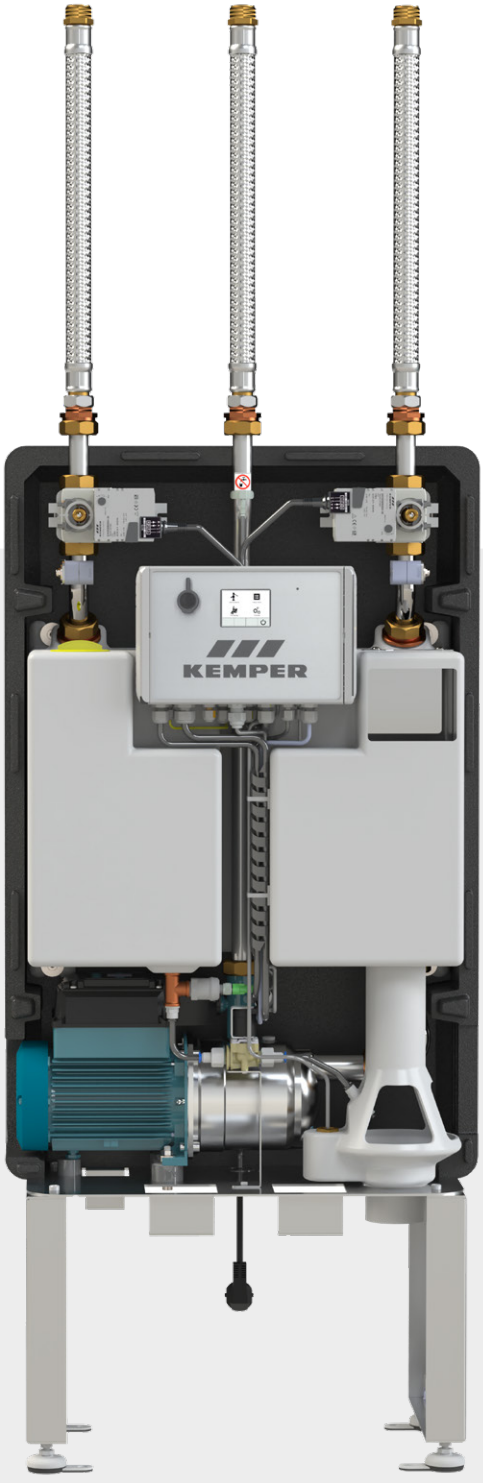


Figure 369 35 including accessories
(see page 11)

The all-rounder: strong performance and energy-efficient operation

The break tank station FK-5 PRO is the high-performance and versatile solution for your requirements. Designed for large heads and high volume flows, the device masters every challenge. Despite the compact dimensions, the FK-5 PRO allows an increase of the water supply flow rate from 3.6 m³/h to up to 6 m³/h thanks to a second supply connection per station.

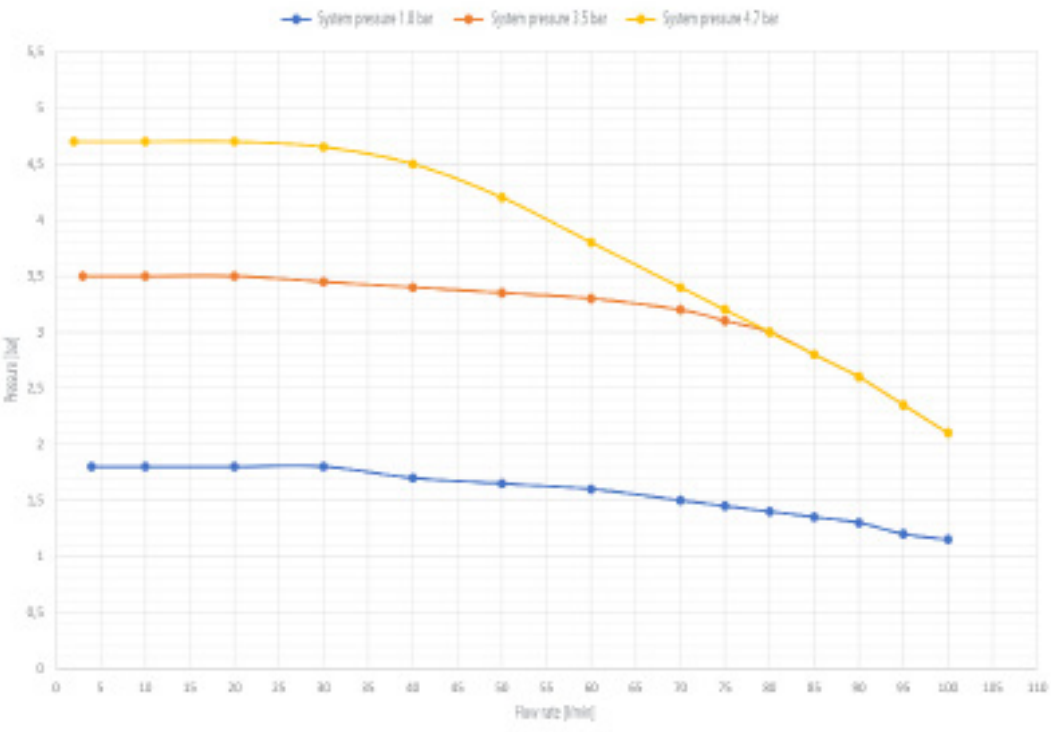
And the modulating pump ensures that the pressure always remains constant – irrespective of the current consumption flow rate. The pump regulates the supply pressure according to demand and continuously up to 4.7 bar.

Choose your break tank station FK-5 PRO according to your individual requirements from two versions with a uniform connection pipe size of DN 25:

// **Version with one feed:**
Performance range up to 3.6 m³/h; increase to up to 6 m³/h possible by expansion with feed set for FK-5 PRO

// **Version with two feeds:**
Performance range up to 6 m³/h

Do you need more supply volume? The solution: parallel connection!
If you need a higher flow rate, the performance range can be increased by parallel connection of multiple stations: this is how you can double the supply volume to 12 m³/h with two stations and achieve up to 18 m³/h with three stations.



All of the pump diagrams can be found on our website at www.kemper-group.com

Operate automated, control precisely: For more convenience and safety

The controller of the break tank station FK-5 PRO has a touch screen for extremely convenient operation. Practical icons guide you intuitively through the menu and allow simple execution of all functions.

Operate with time control
FK-5 PRO allows control of switching on and off times to the precise minute. One example of this application is fully automatic night-time watering in the summer. This relieves pressure during peak times, is easy on the plants and helps to save resources in public areas (both personnel and drinking water resources).

Define operating times – prevent vandalism
Reduce the risk of damage by unauthorised third parties during the absence of staff or the operator to a minimum: by making water tapping points supplied by the FK-5 PRO usable only at fixed defined times! In this way, you can actively prevent damage caused by vandalism.

Convenient datalogging
Data is stored both on a 48-hour short-term log as well as a long-time log for up to one year (overwriting according to the principle of "First in/First Out"). Alternatively, you can store the data from the device on a USB flash drive via a USB interface. For easy further processing in Excel, the protocols are saved on the USB flash drive as CSV files.

Equipment protection at temperatures below zero
Thanks to an integrated frost protection limit, when a temperature of approx. 5 °C is reached, a warning message appears on the touch screen, and at approx. 2 °C, the device shuts down completely. Start-up is only possible after the device has been specifically enabled again.

Maintaining hygiene – even when not used for a long time

Flushing drinking water feed pipes
Our break tank station FK-5 PRO automates this process with programmable flushing cycles – they can take place up to three times a day and remain active, even in the interruption to service mode.

Cleaning the tanks
Even if the water in the tank and in the downstream network is no longer drinking water: high germ contamination from the formation of biofilm in the tanks is undesirable in many applications. For this reason, regular cleaning of the tanks, both during operation and, in particular, after longer standstill times, is vitally important.

For this, FK-5 PRO has the "tank cleaning" function, in which a cleaning agent (for example, a tried and tested product for water tanks in camping vehicles) is added to the tank manually after the start of the program. The program cannot be interrupted and ends with a complete flushing of the tank. The break tank stationFK-5 PRO cannot be used during cleaning.

Simply smart.
And with more expertise.

The demands on your drinking water installation? High. Strict hygiene standards for drinking water must be met at all times. Reliable, resource-efficient, and effective—without compromise. Wouldn't it be great if there was a solution that made all this effortless? That's why we're making our expertise easily accessible—with our innovative spirit, smart ideas, and digital technology. We call it PRO.

How PRO works:
Our connected products continuously collect all relevant operating data from your drinking water installation. We analyse and interpret this data, then turn it into actionable insights through our digital services. The result? Issues are resolved faster, and your installation becomes safer, more sustainable, and cost-effective.

Intelligent solutions that create real value.

Enhanced operational reliability
Prevent malfunctions before they arise: the recording, visualisation and analysis of operating data allows a rapid reaction to irregularities

Improved control
Constant overview of the drinking water installation with the capability to react to automatic discrepancy notifications – at any time and from anywhere

Increased productivity
Relief of the operating staff and more efficiency in business operations due to simple implementability of recommendations for action and optimisation

Direct support
KEMPER becomes an active partner and problem solver with concrete recommendations for action in the event of a malfunction – or even a full-service provider

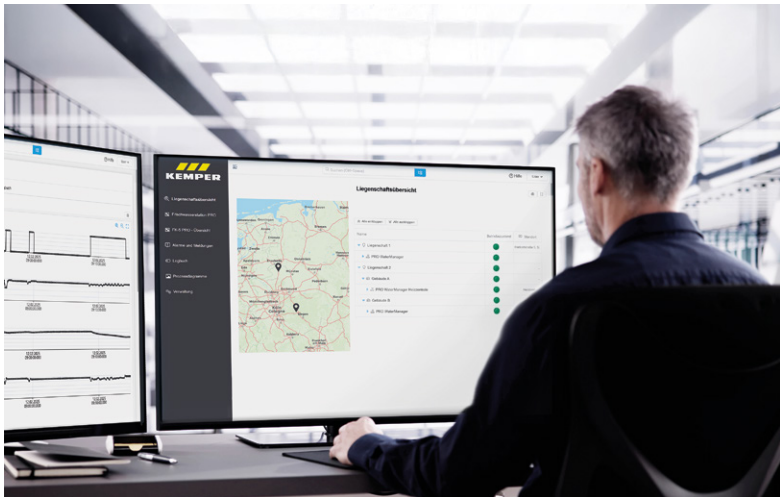
Lower operating costs
Energy savings from adaptation to analysed and evaluated actual requirements

More sustainable drinking water installations
New potential for saving energy, water and CO_2 emissions make it easier to meet sustainability goals that have been set and to comply with drinking water hygiene

Connected components that make your installation better.

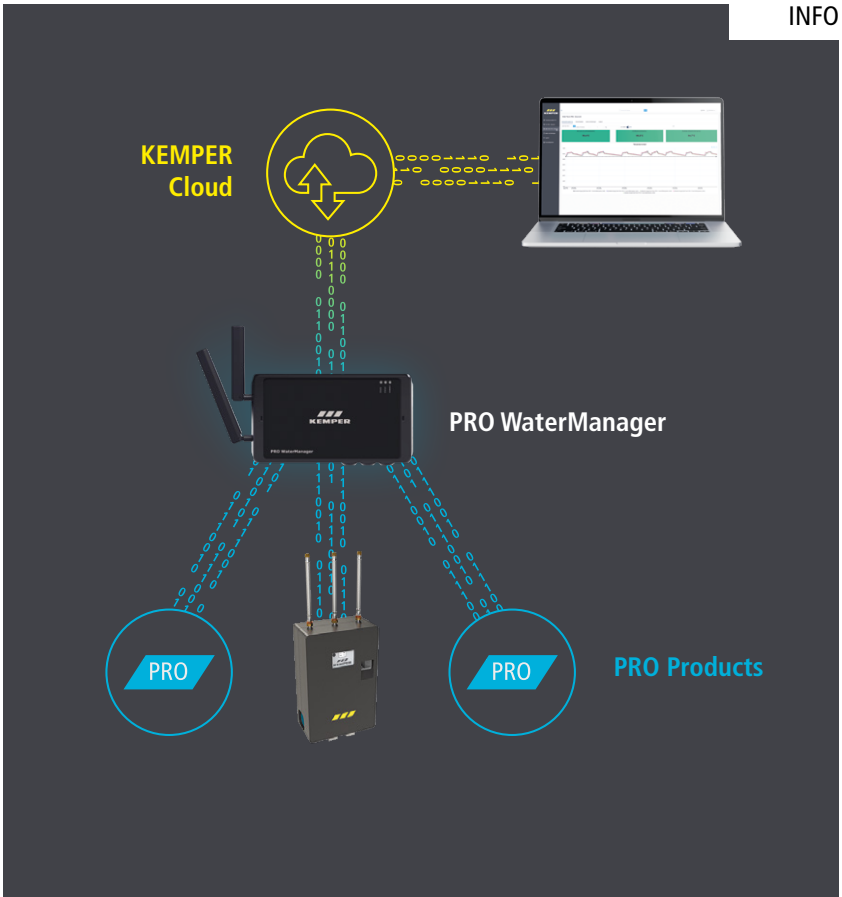
With PRO, you can make the most of your installation's potential: The break tank station FK-5 PRO calculates relevant operating data and transmits it to the KEMPER Cloud via PRO WaterManager. Here, we use our expertise to evaluate, interpret and clearly visualise the data for you. As a result, you are in a position to operate your installation with maximum efficiency, safely and sustainably.

Our digital service models can be matched individually to your requirements. By connecting to other PRO products, you can fully utilise all of the potential of your installation.



FK-5 PRO: digital product features

// Live monitoring of readiness for operation via digital product twin
// Documentation of hygiene-relevant water change (flushing the feed pipe)
// Notification if the temperature falls below the frost protection level
// Analysis of the system parameters for early prediction of the necessary maintenance measures (Predictive Maintenance)
// Remote control of the operating modes (timed operation, automatic operation, blocking)



INFO

The operating data of the FK-5 PRO is initially transmitted to the PRO WaterManager via modbus-RTU. This then makes the data available to the KEMPER Cloud – classically using a LAN network or via the factory-fitted integrated LTE module using the IoT mobile network. Good to know: Your data is securely stored in Germany.

Find out more about our PRO Products & Digital Services

Further practical features for every application

Detect overflows quickly thanks to overflow sensor
The overflow sensor of the break tank station FK-5 PRO (see Accessories, page 11) is used to detect drain blockages or backflow from the sewer. If such malfunctions are detected, the inlet valve is automatically shut off and a notification is sent to the BMS.

BMS connection via modbus-RTU
The existing RS485 data interface can be used either to connect to the building management system or to connect to the PRO WaterManager. The data points are provided via modbus-RTU protocol. System data, fault messages and operational statuses can be read out at any time using them and device settings can be easily changed from a central location.

Connect external medium sources: FK-5 PRO supply set
The supply set for FK-5 PRO (see Accessories, page 11) enables supply of water to the break tank station FK-5 PRO via an external non-potable water source, e.g. rainwater.

Select individualised admixture
Standard commercial dosing pumps can be controlled using a dry contact. You can therefore operate an external rainwater or submersible pump (cistern) on a demand-based basis.

It is possible to control external pumps with the following specifications:

Nominal voltage	250 V AC
Max. continuous current	4 A
Max. switching capacity	AC1 1000VA

Support fault-free plant operation
Pressure fluctuations caused by temperature changes or micro leakages in the system can cause malfunctions or interruptions to service. The diaphragm expansion vessel from the FK-5 PRO connection set (see Accessories, page 11) absorbs these fluctuations in pressure, thus eliminating one potential source of disruption. At the same time, it reduces the number of cycles through tiny draw-offs of water on the pressure side. A high-quality dirt trap made of gunmetal completes the set.

IMPORTANT INFORMATION!
To optimise operation of the system, use of a diaphragm expansion vessel (expansion vessel) is essential.

To satisfy the manufacturer's requirements, the primary pressure of the diaphragm expansion vessel must be 0.5 bar below the set supply pressure.

Technical data and accessories

Part No.	Feed	ND	Max. head [m]	Max. flow rate [m³/h]	PWC connection	Pressure connection	Waste water connection [DN]	Dimensions (H x W x D) [mm]	Empty weight [kg]
3693402500	1	25	44	3.6	G 1¼	G 1¼	75	930 x 600 x 330	45.2
3693502500	2	25	44	6	G 1¼	G 1¼	75	930 x 600 x 330	47.4

NEW

FK-5 PRO supply set

Part No.	3695102500
Scope of delivery	Quarter turn stop valve with actuator and Connection accessories, DN 25

Tank cleaning unit for FK-5 and FK-5 PRO

Part No.	**3690200100**
Scope of delivery	Solenoid valve with connection accessories

NEW

FK-5 PRO connection set

Part No.	**3695700100**
Scope of delivery	Flow-through diaphragm expansion vessel, 33 litres, with 1¼ " dirt trap made of gunmetal

Overflow sensor for FK-5 and FK-5 PRO

Part No.	**3690400100**
Scope of delivery	Overflow sensor with connection cable

FK-5 rack for FK-5 and FK-5 PRO

Part No.	**3690300100**
Scope of delivery	2 x FK-5 racks with fastening parts

NEW

PRO WaterManager

Figure number	111 01 001

KEMPER

DRIVING PROGRESS

Kemper UK & Ireland Limited
Pond Barn
Mythe Business Centre
Tewkesbury
Gloucestershire, GL20 6FG
Great Britain

Phone +44 1684854930
sales-uk@kemper-group.com
www.kemper-group.com/en-uk/

07/25