



MOVING FROM 'PRESSURE' TO 'FLOW'



Merseyside Fire & Rescue Service covers the county of Merseyside in north-west England and is the statutory fire and rescue service responsible for all 999 fire and service related special incident calls in Sefton, Knowsley, St. Helens, Liverpool and Wirral.

Merseyside Fire & Rescue Service is dedicated to keeping the community safer and stronger through continuously improving its fire and rescue capabilities.

THE CHALLENGE

Merseyside Fire & Rescue Service are committed to constantly reviewing their current practices and procedures to ensure that they utilise technology in the most advantageous manner.

From an operational perspective, effective and efficient use of technology will ensure a greater degree of firefighter safety and enhance service delivery.

TSI FLOWMETERS SOLUTION

The operational equipment workshops within Merseyside Fire & Rescue Service use the principle of *'trailing technology, unless there is a compelling reason not to'*. This has proved beneficial for Merseyside Fire & Rescue Service over the years and helped in their decision to consider electromagnetic flowmeters for use across their operations.

By trialling TSI Flowmeters, Merseyside Fire & Rescue Service identified that flowmeters provided their operational personnel with immediate, accurate and easy to understand information.

It established that TSI Flowmeters enhanced the following:

- 1** Firefighter Safety
- 2** Improved Incident Command decision making
- 3** Assisted the role of the Water Officer, Operations Commander and Sector Commanders

KEY OPERATIONAL BENEFITS

Working with 'flow' is an essential element of fighting compartment fires in a safe and effective manner. Electromagnetic flow meters provide the required level of accuracy and reliability to achieve this, something that cannot be achieved by any other means e.g. relying on the interpretation of 'pressure' readings. The precise and simplified way of functioning on the fire ground by using electromagnetic flowmeters, removes the assumptions about:

1. How much water is available to fight the fire
2. How much water is being applied to a fire
3. Whether individual branches / monitors are operating or not

In addition, it eliminates the need to calculate pressure loss due to friction and height, as the flow rate set at the pump is the flow rate that will be received at the branch, no matter where the branch is.

Operating in this manner, led to a culture change in Merseyside from working with 'pressure' to working with 'flow', resulting in enhanced firefighter safety.



GENUINE PERFORMANCE GAINS

Firefighters and operational Officers find working with TSI electromagnetic flowmeters easy to understand. **Why? - Because there are no requirements for complex hydraulic calculations or the need to understand the impact of changing pump tones or other physical indicators such as the firmness of hose to measure water usage or water availability.** This is due to the digital displays on the flowmeters providing accurate and instantaneous information throughout the incident.

The adoption of 'flow' rather than 'pressure' by firefighters has demonstrated the value of 'trailing equipment unless there is a compelling reason not to'. This has led to other operational benefits such as Pump Operators and Incident Commanders being provided with instant and precise information about water availability. Prompt informed decisions can then be made about what can and cannot be done. This is particularly important during the first fifteen minutes of an incident, where resources may be limited and the understanding of how those resources can be used in the safest and effective manner possible is vital.

Merseyside Fire and Rescue Service have experienced no negative impacts of moving from 'flow' to 'pressure' and the equipment has proven easy to fit; easy to use and maintain.



"TSI Flowmeters have provided us with the technology to achieve what the fire service has known, and has stated in National guidance documents', for many years; that 'flow' extinguishes fire not 'pressure'. As the built environment becomes more complex, our firefighting techniques become more sophisticated to deal with these situations in a safe and environmentally sensitive manner. Accurate flow rates become a critical aspect of those techniques, and we appreciate the accuracy and reliability that TSI electromagnetic flowmeters provide us with in order to achieve this."

Dan Stephens,
Chief Fire Officer Merseyside Fire & Rescue Service