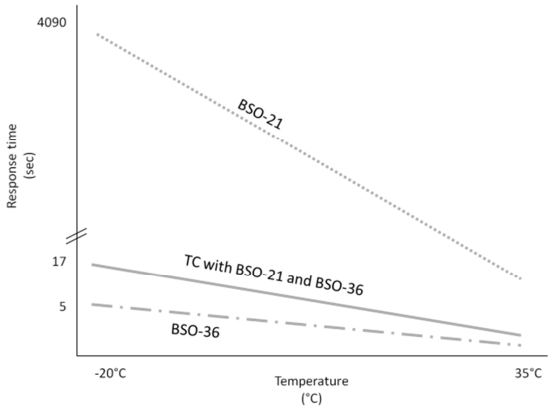
## INTRODUCTION

It is extremely complex to measure low pressures of at high process temperatures with Diaphragm Seals. The available fluids that can withstand these temperature and pressure conditions mostly have a very high viscosity. Additionally, when there is also a considerable capillary length (> 1 meter) required the viscosity of these fill fluids, certainly at lower ambient temperatures, becomes so high that the response time of the transmitter with Diaphragm Seal becomes unacceptable.




Example of Temperature Compensator with BSO-21 and BSO-36

The temperature compensator is available for all Diaphragm Seals to be combined with pressure transmitters.

## SOLUTION DEVELOPED

To overcome this problem Badotherm has designed a 'Temperature Compensator' solution. This description does not completely cover the functionality of the design because it not only compensates for temperature, but also for response time.

The compensator has a specially designed second diaphragm that is placed between the Diaphragm Seal and the transmitter. The first part between the Diaphragm Seal and the Temperature compensator is filled with high temperature fill fluid with a high viscosity. After the Temperature Compensator the process temperature is reduced to approximately ambient temperature and those conditions are acceptable for fill fluids with a low viscosity. The lower viscosity, even at lower ambient temperatures and longer capillary lengths, reduces the overall response time of the Diaphragm Seals System.