

ProPak flow meter for oil and gas

For applications without straight upstream and downstream pipes

Model FLC-HHR-PP

WIKA data sheet FL 10.07

Applications

- Custody Transfer acc. API 22.2
- Oil production and refining
- Power generation
- Gas processing and transport, LNG, FLNG
- Chemical and petrochemical industries

Special features

- Highest accuracy
- Energy-efficient
- Flexible installation
- No need for straight upstream and downstream pipes
- Wide variety of applications

Description

Innovative technology and design

ProPak is a technological advancement in differential pressure flow metering redefining performance standards in critical applications in the Oil & Gas Industry. Designed from the innovative velocity profiling technology of the Translineal Flow Plate and the field proven performance of the HHR Series, the HHR ProPak consistently outperforms other flow measurement technologies to meet today's toughest flow measurement challenges.

No need for straight upstream and downstream pipes

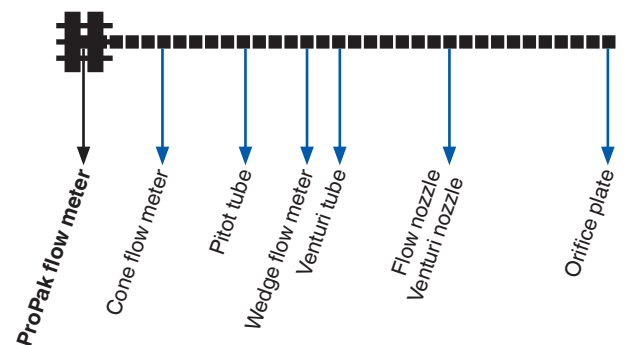
The HHR ProPak's unique design ensures that the flow velocity profile is well developed and properly defined prior to measurement. Test results show the HHR ProPak maintains its high accuracy and performance with no additional upstream and downstream piping, even in disturbed flow applications.

Maximized performance

Low permanent pressure loss (PPL) equates to energy efficiency and reduced operating cost. The HHR ProPak has a lower permanent pressure loss than the orifice plate or cone meter thanks to its smooth, contoured, obstruction free entrance with a pressure recovery cone for enhanced pressure recovery



ProPak flow meter, model FLC-HHR-PP



No need for straight upstream and downstream pipes

Tested in accordance with API 22.2

The High Head Recovery ProPak has been laboratory flow tested following the protocol of Manual of Petroleum Measurement Standards Chapter 22 – Testing Protocol, Section 2 by the American Petroleum Institute.

API 22.2 states the objectives for the Testing Protocol such as meter performance characteristics, Reynolds number ranges, quantifying the uncertainty and defining the installation and operating conditions for which the uncertainties apply.

Constant flow coefficient and accuracy

Installation Effect Tests (IET) have been carried out to evaluate the meter performance under worst case non-ideal conditions including various configurations upstream, downstream and both upstream and downstream of the meter to create swirl and asymmetric velocity profiles.

Test results shown the coefficient of discharge of the HHR ProPak to be constant, independent of Reynolds Number, and within ±0.75% (uncalibrated) of the predicted value, even when installed directly after two elbows out of plane and a halfmoon plate.

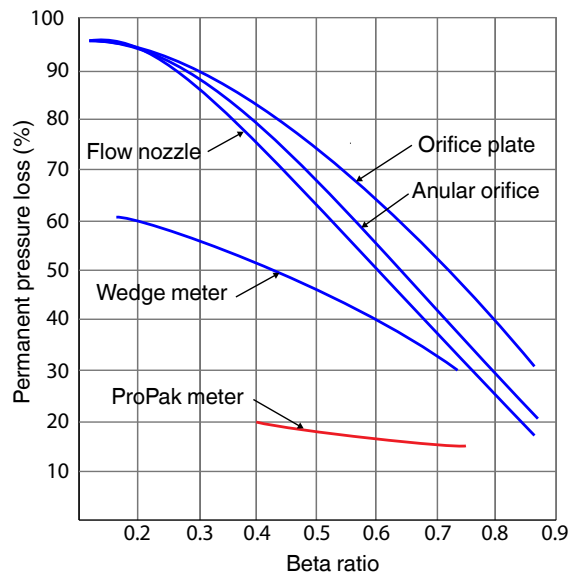
Should an accuracy of ±0.25 % or higher be required, a calibration via a certified laboratory can be carried out.

Specifications	ProPak flow meter
Uncalibrated accuracy	±0.75 %
Flow coefficient (KV value)	0.985
Repeatability	±0.1 %
Adjustment ratio	limited only by lower boundary of Reynolds Number
Up/downstream piping requirements	none
Line size	2", 3", 4", 6", 8"
Beta value	0.4 and 0.75 as standard
Pipe schedule	40/Std standard, others on request
Rating	#600 as standard, others on request
Piping connection	Flanged

Highest energy efficiency reduces operating costs

Each piece of equipment or pipe integrated into an existing piping system will result in an increase in the pressure loss. With higher pressure losses, pumps and compressors must work harder in order to keep the flow rate stable. Pressure loss is synonymous with higher energy costs that must be spent for normal operation.

The lowest possible pressure loss, thus, assists in reducing the operating costs to a minimum. The ProPak flow meter displays the lowest permanent pressure loss of all orifice measuring system. The smoothest possible inlet contour and surface together with unique designed outlet diffuser section ensures pressure recovery optimization.



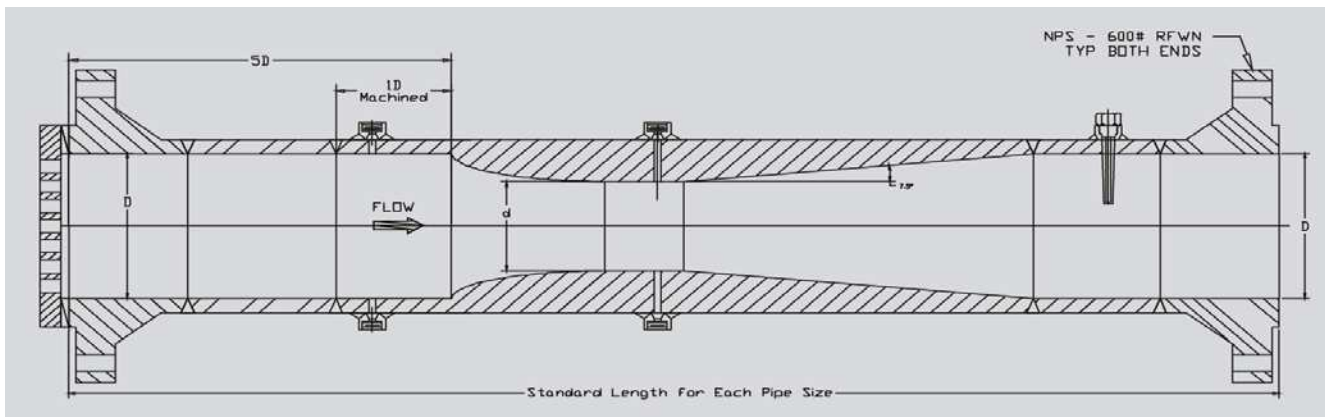
Dimensions in inch

The ProPak is designed to be sold as line size 2", 3", 4", 6", or 8" at schedule 40. The meters are manufactured in two variations, a high beta of 0.75 and a low beta of 0.40. Regardless of the beta selection, the meters will be the same length. This allows users to quickly and easily swap a high beta meter for a low beta meter or vice versa without having to redesign their piping system.

Additionally, all ProPaks come standard with a thermowell connection downstream of the metering section and 600# RFWN Flanges. Other pressure ratings may be provided upon request.

Nominal size	Inner diameter	Beta ratio	Bore diameter	Length Flange - flange	Overall length incl. flow straightener and seals
2"	2.067	0.40	0.827	24.36	25
2"	2.067	0.75	1.550	24.36	25
3"	3.068	0.40	1.227	34.23	35
3"	3.068	0.75	2.301	34.23	35
4"	4.026	0.40	1.610	43.10	44
4"	4.026	0.75	3.020	43.10	44
6"	6.065	0.40	2.426	62.84	64
6"	6.065	0.75	4.549	62.84	64
8"	7.981	0.40	3.192	80.59	82
8"	7.981	0.75	5.986	80.59	82

Shorter lengths on request



Options

- Mounted differential pressure gauge or transmitter
- Mounted thermowell with thermometer
- Flat gaskets and valve manifold seal in Graphoil (standard: PTFE)
- Studs and nuts for pipelines in accordance with customer requirements

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