

2-way data pulley no. 2012.80

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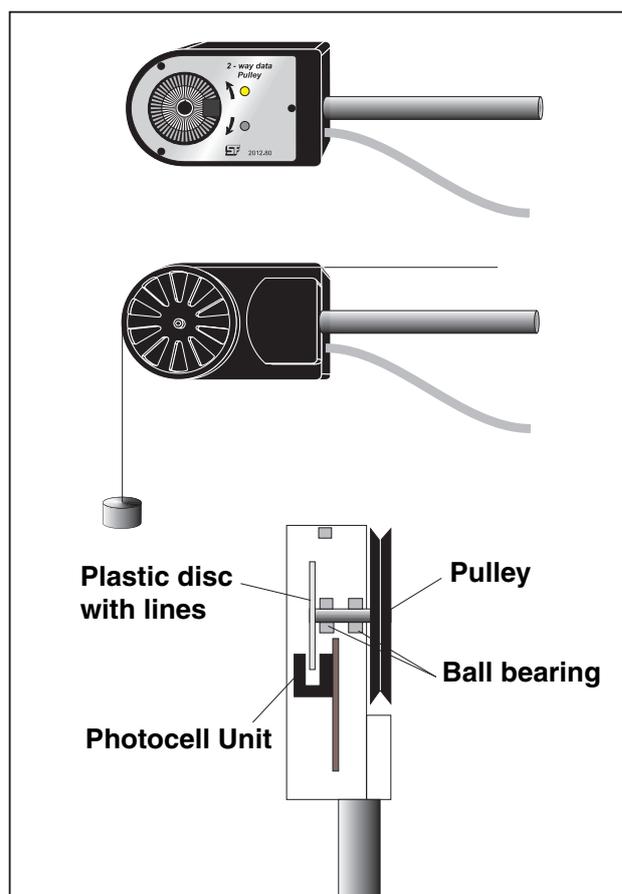


This pulley is useful for experiments concerning movements, for measurements of rectilinear movements in one dimension or swinging/rotating movements. The pulley can record both the movement and the direction of the movement, this makes the pulley useful for Collision experiments, on air track, Harmonic mechanic vibrations, Measuring g after Atwood and all types of measurements on rectilinear movements. The pulley is made of a chamber mounted on a 100 mm rod, an outer wheel and a cable with a 15-pin sub-D plug, that fits a Game-port. The pulley is especially developed for the communication with

the software "Datalyse". Under "technical data" the pin-connection is given, so it is possible to make software.

The design of the pulley makes it possible to mount a rubbering on the wheel, and the pulley can then measure on movements by rolling on a horizontal ground.

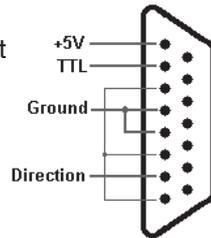
The wheel is 5 cm diameter and is mounted on an axle suspended in a high quality ball bearing in the chamber. In the chamber a plastic disc provided with 50 lines is mounted on the axle. These lines pass a photocell unit provided with two close-set detectors which makes it possible to determine both speed and direction. The pulley is, for the control of the function, provided with two light-diodes that indicates which way the wheel turns.



Technical data:

Plug-connections:

15-pin sub-D, for Game-port
Pin 1: +5V Earth
Pin 2: TTL
Pin 4 and 5: Earth Direction
Pin 7: Direction
Pin 3,6 and 8: Short-circuit with a louse



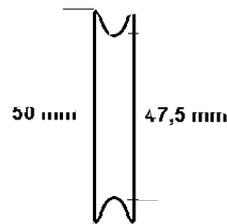
Diameter, Pulley:

Number of lines on the plastic disc: 50

Pin 2 is the frequency pin, a TTL-output, that gives a puls every time the lightbeam, is interrupted by a spoke.

When the circumference of the wheel and the number of spokes are known the distance covered between a number of pulses can be calculated.

Pin 7 is the directional pin.
High when the pulley turn one way, low when the pulley turns the other way.



Dimensions: Wheel:

Connection to PC:

The pulley is designed for communication with the software "Datalyse" via a game-port.

To make the communication work the right address must be chosen in the Joy-plug setup of the PC.

The right Port address is normally 201H.

In "Datalyse" is possible to chose every puls, every second or every fourth puls.

Suggested experiments with 2-way data pulley:

Newtons second law on Air Track.

Collision experiments on Air Track.

Measuring g after Atwood.

Harmonic vibrations, mass in a spring.

Muted vibrations.

Mathematical pendulum.

Frictional resistance in liquids for falling mass.

Frictional resistance in liquids measured on models-hip affected by constant force, e.g. pulled by a falling mass.