OPTALIGN smart EX

Технические характеристики

Precision laser alignment with a twist. Optalign it!

Thanks to its intuitive operation, ergonomic design and its many beneficial features, OPTALIGN® smart EX remains a sought-after measurement system in the maintenance of pumps, motors, gearboxes, compressors, and a variety of rotating machinery. If machines are precisely aligned, the load on the shafts reduces dramatically. This results in increased machinery life, extended machine availability and the keeping down of maintenance costs.

The high resolution backlit TFT screen, the low weight and the distinct positioning of the operating keys make it possible to carry out alignment jobs under extreme conditions. The secret behind the intuitive operation lies in the three blue round function keys for the main alignment steps, the context menu, the status line help text, and the clear depiction of alignment results. Uncomplicated and easy to comprehend.

The default configuration can be enhanced with powerful features as job demands grow, making OPTALIGN® smart EX an investment for the future that pays off.

reddot design award

Hot alignment check / Quick Check

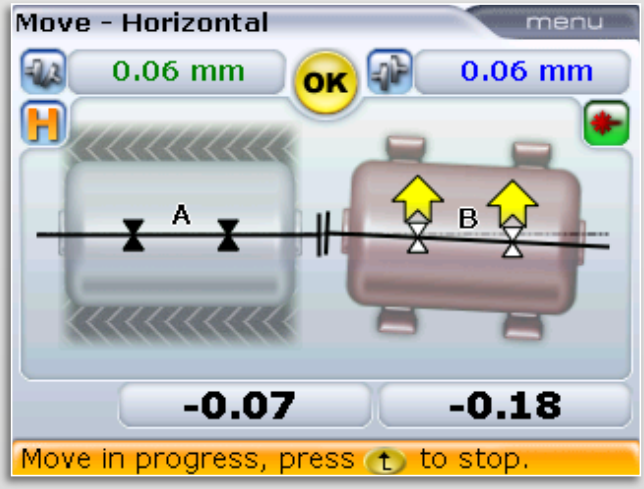
OPTALIGN® smart EX is used to take 'hot' alignment readings in a matter of minutes after machines are shut off. Components are mounted on the shafts quickly and rigidly using the pre-assembled brackets.
OPTALIGN® smart EX is switched on and shafts rotated. Dimensions are entered after measurement.

SWEEP measurement mode

In this exclusive and patented mode, measurement data is automatically and continuously collected as the shafts are rotated.
A shaft rotation of 60° captures a large number measurement points to accurately determine the alignment condition. Measurement can start at any position and in any direction.

Live Move

Both horizontal and vertical coupling and foot results are automatically calculated. The machine graphics show the direction and the correction value of feet to be moved. During alignment, OPTALIGN® smart EX continuously measures the corrections. The monitored changes are displayed live on the screen.



OPTALIGN® smart EX

Actual size

The OPTALIGN® smart EX **high resolution TFT colour display** is backlit. Due to its good contrast ratio, measurement values can easily be read in low light environments.

OPTALIGN® smart EX integrates a **RF module for wireless data transmission**, which is also available in an intrinsically safe version. This allows convenient and flexible wireless data transmission. The connection to a PC and other peripheral devices such as a printer is via a USB interface.

The alphanumeric keyboard and the navigations keys ensure comfortable operation of the measurement system. The alignment condition is monitored through the computer LEDs.
The batteries allow long operation.

OPTALIGN® smart EX has been constructed and manufactured for industrial applications, and can be used in **extreme working conditions**. The computer is dustproof and water spray resistant in accordance with IP 65.

The transducer and reflector are both submersible and dustproof in accordance with IP 67.

Optional brackets that extend application capabilities are readily available:

- The compact magnetic bracket provides quick and rigid mounting of measurement components on coupling flanges.
- The sliding magnetic bracket is suited for nonrotatable shafts. It glides around the outside of the coupling or shaft end from one measurement position to the next.

Alignment results in 3 steps:

1. Enter dimensions
Define machine by entering the required dimensions. The dimensions to be entered are clearly highlighted on the display.

2. Rotate shafts
After the on-screen laser beam adjustment, rotate shafts in their normal direction of rotation. Measurement can start and stop at any position.

3. Diplay alignment condition
The alignment condition at the coupling and the machine feet corrections are displayed on the screen in both graphical and numerical formats.

Standard features and powerful options

Standard features

- Alignment of horizontal, vertical and flange-mounted machines
- Alignment of coupled, uncoupled and nonrotatable shafts
- Soft foot check – measure, correct and save results
- UniBeam for quick adjustment of the single laser beam
- Continuous SWEEP measurement mode automatically activated as shaft is rotated – start and stop rotation at any position
- Automatic evaluation of alignment condition with TolChek® and user-defined tolerances
- InfiniRange® extends detector measurement range to handle gross misalignment
- QuickCheck – uses a single dimension to display both horizontal and vertical coupling values
- Static measurement mode – requires any 3 of the 8 available 45° measurement positions
- Live monitoring of horizontal and vertical machine corrections
- Result table to verify measurement repeatability
- Save up to 500 measurement files in the device
- Save measurement reports as PDF to a USB memory stick
- Data protection - auto save and resume capability
- Alignment of 6-foot machines
- Checking the effects of pipe strain on shaft alignment
- High resolution backlit colour TFT screen

Powerful options

- RF module for wireless data transmission
- 3-machine train alignment
- Enter alignment targets and thermal growth values including input of dial indicator readings
- Fixed feet selection – resolves base-bound and bolt-bound problems
- Multipoint mode – measurement at any 3 or more positions over 60° rotation or wider
- Alignment of cardan and spacer shafts
- PC software ALIGNMENT CENTER is used for preparing, analyzing, archiving measurement files and printing professional reports

ALIGNMENT CENTER – The PC partner for alignment professionals

ALIGNMENT CENTER is a PC software used for preparing, analyzing, organizing and archiving measurement files

ALIGNMENT CENTER is a Windows® based common PC software platform for current PRÜFTECHNIK alignment instruments and applications.

Use ALIGNMENT CENTER to manage your measurement files and data, and use the two-way communication to transfer files from PC to instrument and vice versa.

ALIGNMENT CENTER simplifies job preparation as all alignment and measurement specifications including thermal growth compensation and tolerances are saved for future use. Measurement related data is also saved and the measurement history can also be followed. The software generates professional colour reports that include photos, company information and logo. Improve your alignment efficiency and productivity by utilizing this indispensible tool in your everyday alignment tasks.

Technical data

Computer	
CPU	Marvell PXA270 running at 312 MHz
Memory	64 MB RAM, 32 MB Flash
Display	Type: TFT, transflective (sunlight-readable), 65 535 colours, backlit LED
	Resolution: 320 x 240 Pixel; Dimensions: 3.5 inch diagonal
	Keyboard elements: Navigation cursor cross with up, clear and menu keys; Alphanumeric keyboard with dimensions, measure and results hard keys
LED indicators	4 LEDs for laser status and alignment condition
	2 LEDs for wireless communication and battery status
Power supply	Operating time: 18 hours typical use (based upon an operating cycle of 25% measurement, 25% computation and 50% 'sleep' mode)
	Disposable batteries: 6 x 1.5 V IEC LR6 ("AA")
	1.5 V "AA" MN 1500 from Duracell or AccuCell AC 1800 rechargeable batteries
External interface	USB host
	USB slave
	RS232 (serial) for transducer
	Integrated wireless communication, class 1, transmitting power 100 mW
	AC adapter/charger socket
Environmental protection	IP 65 (dustproof and water spray resistant), shockproof
	Relative humidity 10% to 90%
Intrinsic safety	II 2 G Ex ib [ib] IIC T4, Zone 1 Certificate numbers: TÜV 08 ATEX 554162, IECEx TUN 08.0006
Temperature range	Operation: -10°C to 50°C [14°F to 122°F]
	Storage: -20°C to 60°C [-4°F to 140°F]
Dimension	Approx. 214 x 116 x 64 mm [8 7/16" x 2 1/2"]
Weight	865 g [1.9 lb]
CE conformity	EC guidelines for electric devices (2004/108 EWG) are fulfilled
Transducer	
Particulars	Measurement principle: Coaxial, reflected laser beam
	Environmental protection: IP 67 (submersible, dustproof)
	Ambient light protection: yes
	Storage temperature: -20°C to 80°C [-4°F to 176°F]
	Operating temperature: 0°C to 55°C [32°F to 131°F]
	Dimensions: approx. 107 x 70 x 49 mm [4 1/4" x 2 3/4" x 2"]
	Weight: approx. 177 g [6 1/2 oz.]
Intrinsic safety	II 2 G Ex ib op isb IIC T4, Zone 1 Certificate numbers: TÜV 07 ATEX 554148, IECEx TUN 08.0003
Laser	Type: Ga-Al-As semiconductor laser
	Wavelength (typical) 675 nm (red, visible)
	Safety class: Class 2, FDA 21 CFR 1000 and 1040
	Beam power: < 1 mW
	Safety precautions: Do not look into laser beam
Detector	Measurement area: unlimited, dynamically extendible (U.S. Patent 6,040,903)
	Resolution: 1 µm; Accuracy (avg): > 98%
Inclinometer	Measurement range: 0° to 360°; Resolution: <1°

Reflector	
	Type: 90° roof prism; Accuracy (avg): > 99%
	Environmental protection: IP 67 (submersible, dustproof)
	Storage temperature: -20°C to 80°C [-4°F to 176°F]
	Operating temperature: -20°C to 60°C [-4°F to 140°F]
	Dimensions: approx. 100 x 41 x 35 mm [4" x 1 5/8" x 1 3/8"]
	Weight: approx. 65 g [2 1/2 oz.]
Carrying case	
	Standard: ABS, drop tested 2 m [6 1/2 ft])
	Case dimensions: approx. 470 x 400 x 195 mm [18 1/2" x 15 3/4" x 7 3/4"]
	Weight, including all standard parts: approx. 5.8 kg [12.8 lb]
Wireless technology	
	For wireless communication with transducer (optional)
	Class 1 connectivity, transmitting power 100 mW
	Transmission distance: 10 m [33 ft.]
	Complies with FCC rules part 15.247

Package content may vary depending on the version

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72
Астана +7(7172)727-132
Белгород (4722)40-23-64
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сайт: www.pruftechnik.nt-rt.ru || эл. почта: pkh@nt-rt.ru