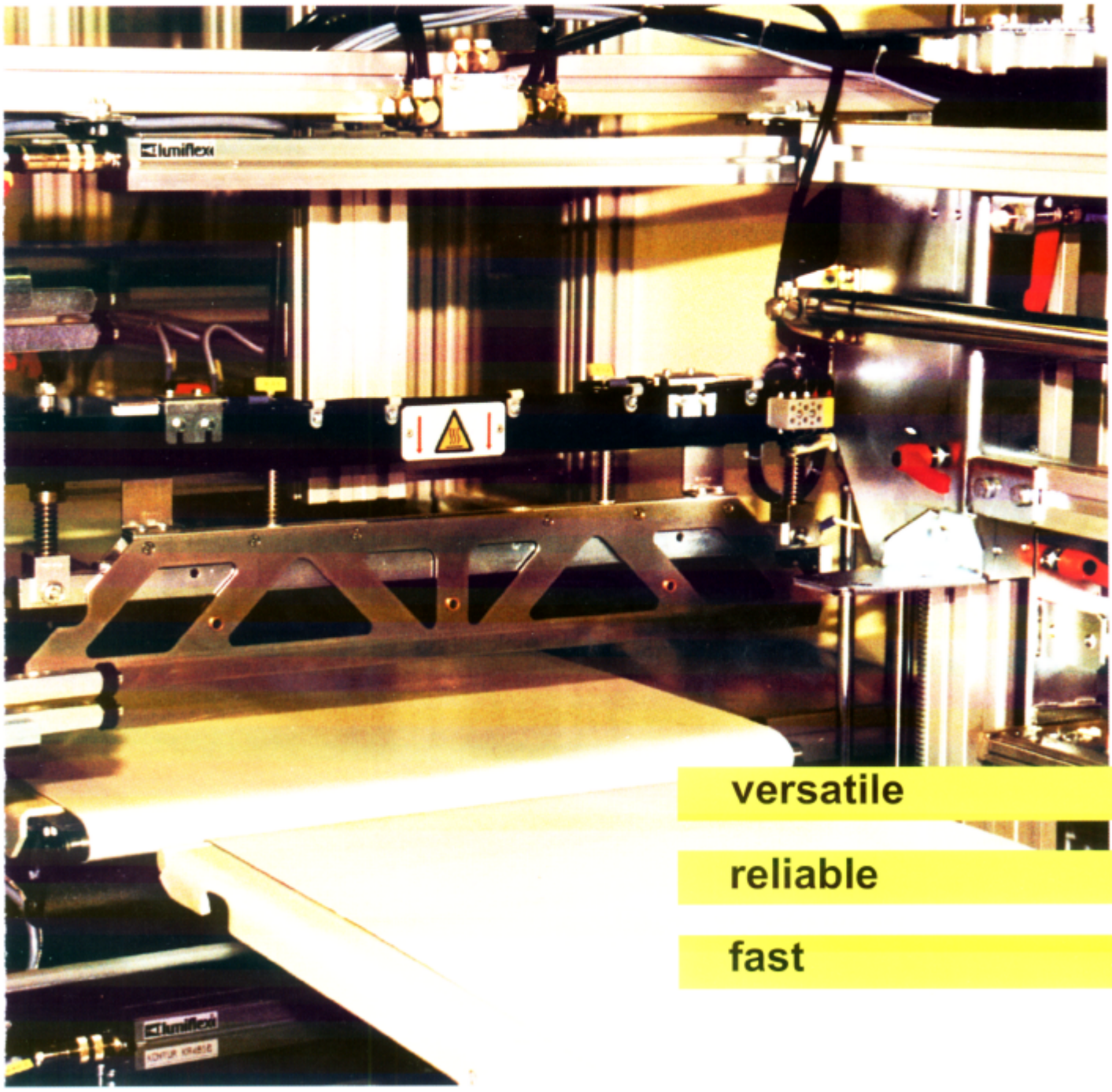
KONTUR

The measuring light curtain designed for the rapid gauging of
dimensions, positions, gaps, contours ...



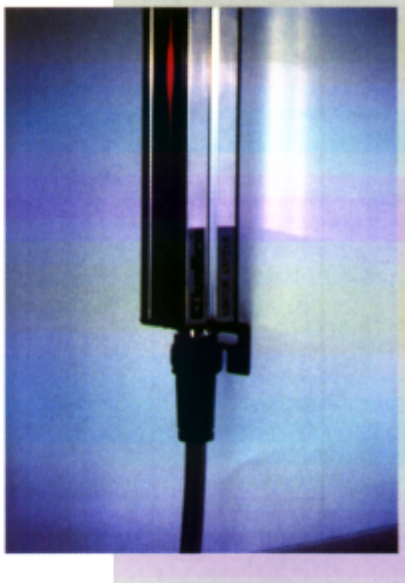
versatile

reliable

fast

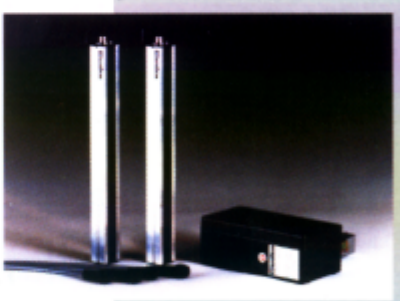
The Advantages

- **Various beam intervals available**
  10 mm, 20 mm or 40 mm
- **Large selection of lengths available**
  120 mm up to max. 3000 mm
- **Up to 3 measurement axes per system**
  e.g. for the joint measurement of object width and height
- **High degree of operational safety**
  Functions and parameters are programmed into the EPROM of the control unit and offer a high level of functional safety for everyday operation
- **High rate of measurement - fast measurements**
  Cycle time of a 60-beam system: approx. 5 ms
- **Automatic scanning**
  Fast, ready results for simple objects - easy to use
- **A wide variety of results to choose from**
  For every measurement axis, the appropriate results and/or evaluations can be selected from among seven types.
- **Controlled scanning**
  This flexible operating mode provides, among others, detailed single-beam information for complex objects.

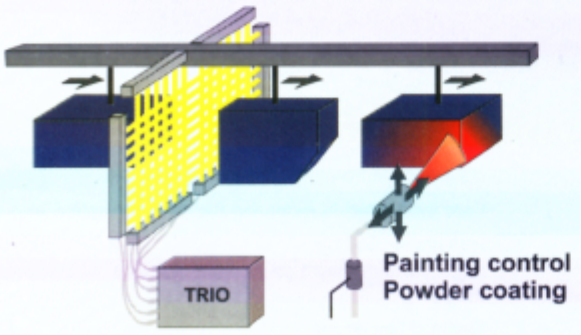


Brief Description

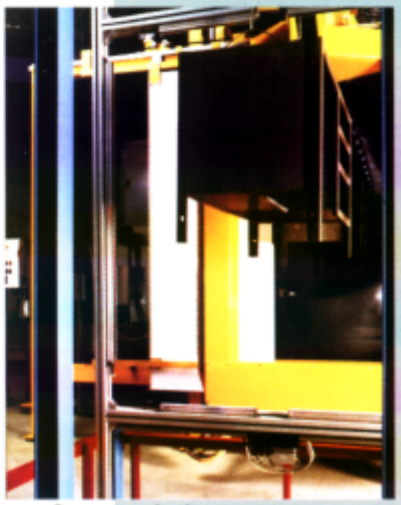
KONTUR is the product line of measuring light curtains from Leuze lumiflex. This extremely variable and versatile technology has proven its excellent performance in diverse industrial applications. A single system consists of a maximum of three pairs of transmitter-receiver strips, a corresponding control unit (SOLO/P, SOLO/XL or TRIO) and the necessary cables. The raw data cyclically generated by the light curtain are conditioned in the control unit and transmitted to the superordinate PLC as finished measurement values or single-beam information. Depending on the task, the data then undergo further processing by the PLC.



Double-Axis Dimension or Contour Gauging
horizontal axis divided



Controlled scanning
Output: single-beam information (vertical) combined with preprocessed measurement values (horizontal, e.g. 2 times HU)



Spray painting system

Method of Operation

A measurement zone is produced between the transmitter and receiver strips by an array of light beams projected in parallel. The light beams are scanned in rapid succession, evaluated and stored in a cache. These raw data, or single-beam information, provide the basis for further evaluation. The control units SOLO/XL and TRIO can operate in two modes: "automatic scanning" and "controlled scanning", which can be selected at a DIP switch. The SOLO/P control unit always operates in automatic scanning mode.

Automatic Scanning

In automatic scanning mode, after every scan the raw information or single-beam information is evaluated within the control unit, processed to obtain results, and jointly transmitted to the outputs in parallel. The superordinate PLC can read in the data from there.

Results

Depending on the task and the control unit, the desired output information can be selected from a list of pre-defined options and incorporated into the control program. The user can select among the following measurement results (8 or 9 bits each):

HU:	Highest interrupted beam
NHU:	Highest uninterrupted beam
TU:	Lowest interrupted beam
TNU:	Lowest uninterrupted beam
ZU:	Number of all interrupted beams
ZNU:	Number of all uninterrupted beams
STATUS:	e.g. all beams free, all beams interrupted, etc.

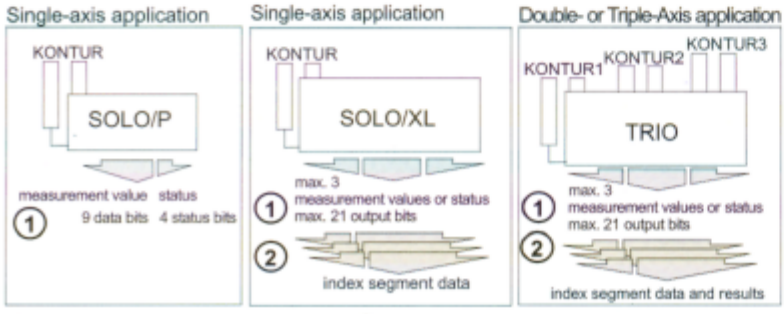
Controlled scanning

In addition to possible measurement results, in controlled scanning mode the single-beam information is output by the KONTUR-1. It is divided into segments, sequentially transferred to the PLC, reassembled and evaluated depending on the demands of the task. This operating mode is primarily suited for use with complex objects. When required, preprocessed measurement results can be output alongside the single-beam information. The segment or measurement value data are clearly identified by added output ID numbers (index). The output sequence is controlled by means of an external, flank-triggered signal from the PLC.

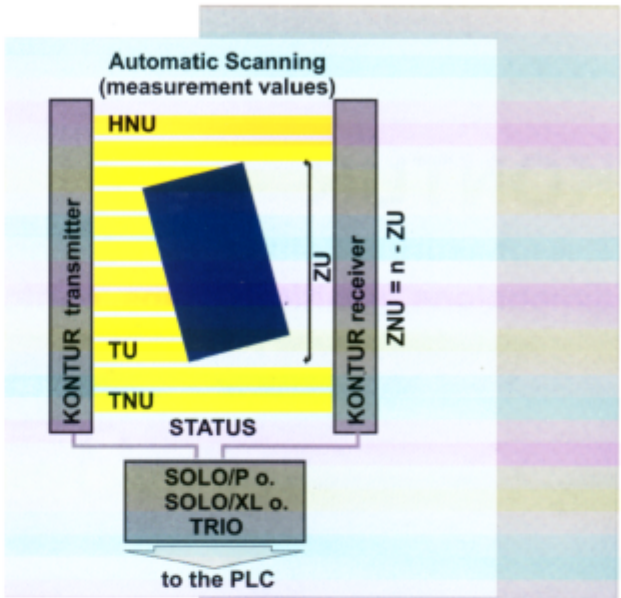
Designed for Use in the Fields of:

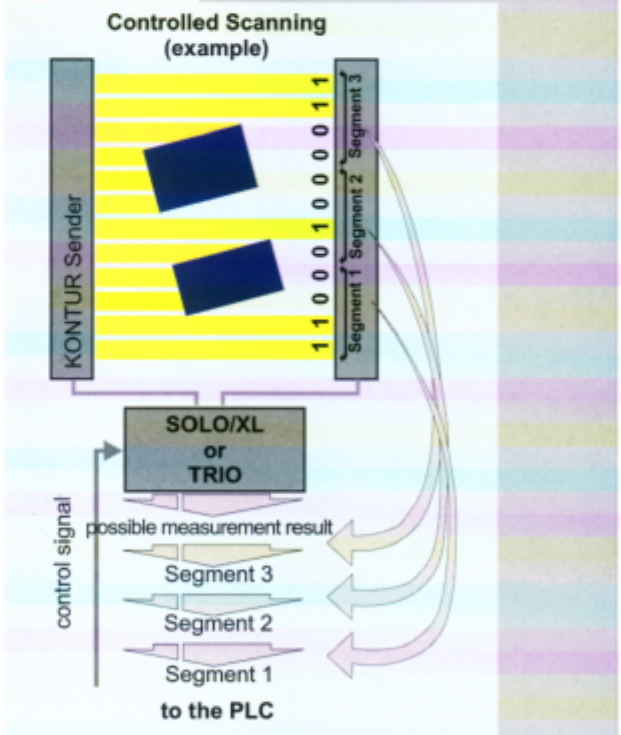
Control of Material Flow - Painting Systems - Quality Control - Logistics - Surface Technology - Packaging Technology - Positioning - Process Control - Measurement Technology - Handling Technology ...

The Control Units



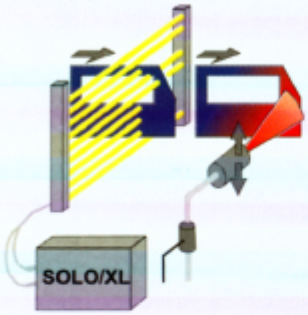
(1) Automatic scanning (2) Controlled scanning



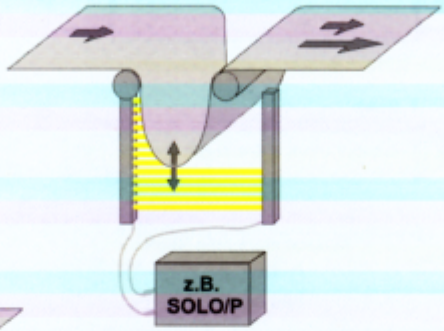


Sample Applications

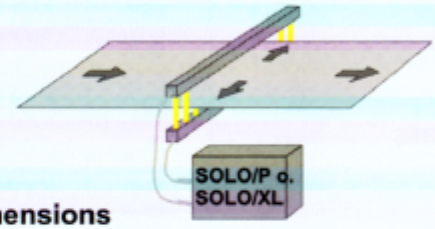
Contour or Form Gauging
controlled scanning
output: single-beam information



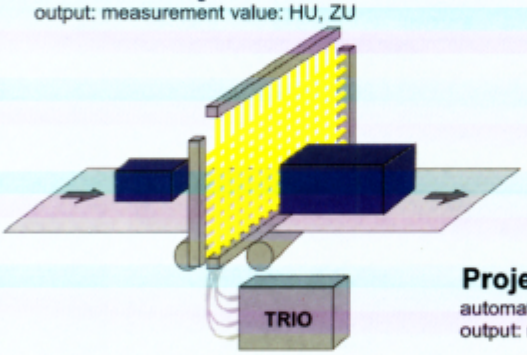
Sagging Control
automatic scanning
output: measurement value: TU e.g. SOLO/P



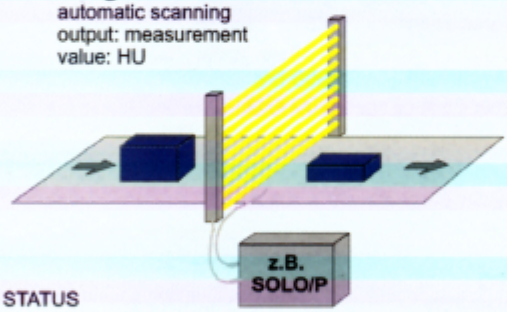
Width Measurement
automatic scanning
output: measurement value: ZU (SOLO/P)
or TU and HU (SOLO/XL)



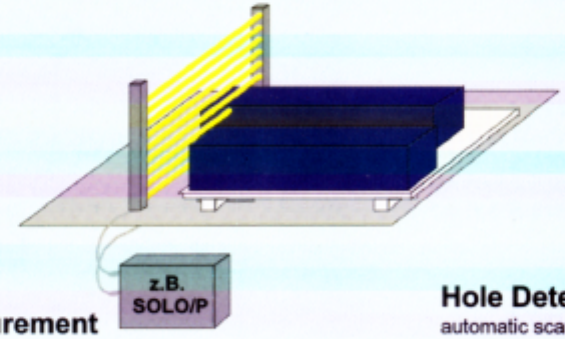
Double-Axis Gauging of Dimensions
automatic scanning in two axes
output: measurement value: HU, ZU



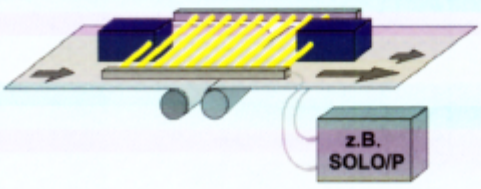
Height Measurement
automatic scanning
output: measurement
value: HU



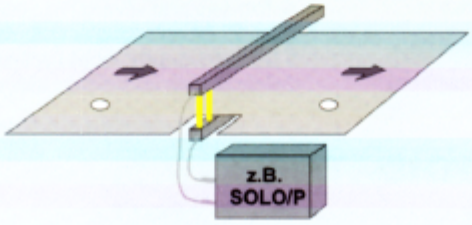
Projection Control
automatic scanning
output: measurement value: ZU or STATUS



Interval or Distance Measurement
automatic scanning
output: measurement value: ZNU

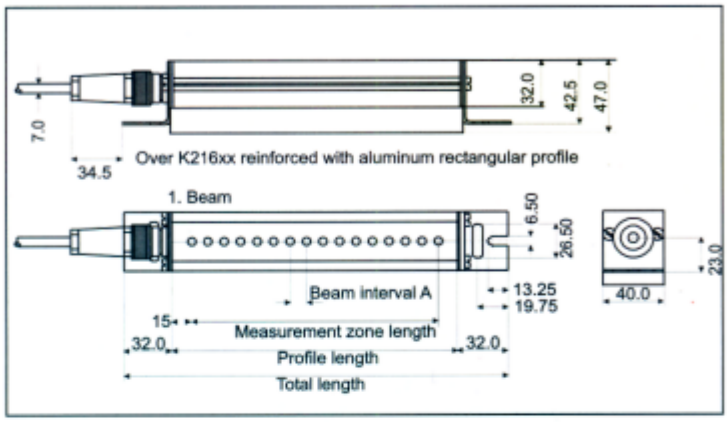


Hole Detection
automatic scanning
output: measurement value: ZNU or STATUS



Ask us about your application needs!

Dimensions



KONTUR Types

Measurement zone lengths (mm)	KONTUR Type Beam interval of 10 mm	KONTUR Type Beam interval of 20 mm	KONTUR Type Beam interval of 40 mm
140	K1210	K1220	K1240
260	K2410	K2420	K2440
380	K3610	K3620	K3640
500	K4810	K4820	K4840
620	K6010	K6020	K6040
740	K7210	K7220	K7240
860	K8410	K8420	K8440
980	K9610	K9620	K9640
1100	K10810	K10820	K10840
1220	K12010	K12020	K12040
1340	K13210	K13220	K13240
1460	K14410	K14420	K14440
1580	K15610	K15620	K15640
1700	K16810	K16820	K16840
1820	K18010	K18020	K18040
1940	K19210	K19220	K19240
2060	K20410	K20420	K20440
2180	K21610	K21620	K21640
2300	K22810	K22820	K22840
2420	K24010	K24020	K24040
2540	K25210	K25220	K25240
2660	K26410	K26420	K26440
2780	K27610	K27620	K27640
2900	K28810	K28820	K28840
3020	K30010	K30020	K30040

Technical Data - Optical Components

Height of measurement zone	120 mm ... 3000 mm in increments of 120 mm
Width of measurement zone	4000 mm
Resolution	15 mm, 25 mm, 45 mm
Beam interval	10 mm, 20 mm, 40 mm
Maximum number of beams	510
Time required per beam	75 µs (up to 255 beams) 100 µs (over 255 beams)
Transmitter wavelength	900 nm
Modulation frequency	200 kHz
Measurement zone indicator	LEDs in receiver
Supply voltage	From SOLO or TRIO control unit
Connective cabling (optical components)	7-pin cable, shielded, max. 20 m
Housing	Continuous cast aluminum
Cover plate	Red plexiglas
Enclosure rating	IP 65
Interference immunity	IEC 801, Intensity 4
Ambient operating	0 ... 55 °C

Technical Data - SOLO/p

Supply voltage	19 ... 40 V DC/1.7 A
Compatible light curtains	1 KONTUR with up to 510 beams
Modes of operation	automatic scanning
Interface	max. 13 bit optocoupler outputs (open emitter)
Connection (interface)	16-pin plug-in connection with screw connector

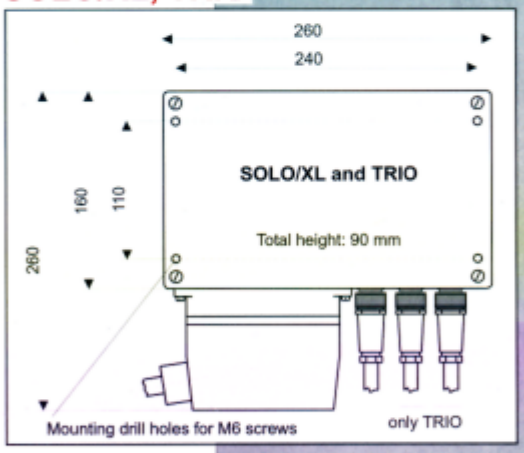
Technical Data - SOLO/XL

Supply voltage	19 ... 40 V DC/1.7 A
Compatible light curtains	1 KONTUR with up to 510 beams
Modes of operation	automatic and controlled scanning
Interface	max. 21 bit optocoupler outputs (open emitter) 1 bit optocoupler input (open anode)
Connection (interface)	24-pin plug-in connection with screw connector

Technical Data - TRIO

Supply voltage	19 ... 40 V DC/1.7 A
Compatible light curtains	max. 3 KONTUR: 1 KONTUR (up to 510 beams) plus 2 KONTURs (with max. 63 beams each) or 1 KONTUR (with max. 255 beams)
Modes of operation	automatic or controlled scanning
Interface	max. 21 bit optocoupler outputs (open emitter) 1 bit optocoupler input (open anode)
Connection (interface)	24-pin plug-in connection with screw connector

SOLO/XL, TRIO



SOLO/P