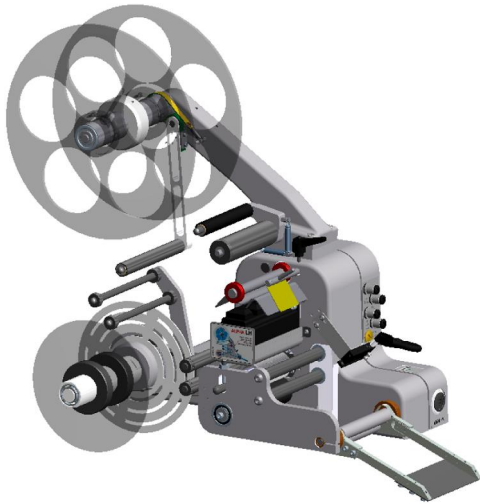


Alpha Compact Plus



Technical Specifications:

Label size:	Min. 10 x 10 mm (W x H) Max. 250 x 300 mm (W x H) Higher label lengths can also be applied at reduced speed resp. application rate Minimum label gap 3mm
Label roll, outside diameter:	Maximum roll-Ø = 300 mm; maximum running length = 450 m Core = 76 mm (3 Ø)
Maximum application rate:	Up to 1100 rates/min (depending on label size)
Maximum liner width	= dispenser width + 4mm (e.g.: Alpha Compact 120 = max. 124mm liner width)
Application accuracy:	+/- 0,3 mm (related to the repeatability at the peeler bar)
Maximum application speed:	100 m/min, depending on label size and application rate
Dimension: (L x H x D in mm)	710 x 600 x 330
Weight:	22kg depending on version (without label roll)
Power connection:	85 ~ 264 V / 47 ~ 63 Hz
Power consumption:	300 Watt
Ambient temperature:	10 ñ 38 °C
Environmental conditions:	20 ñ 90 % relative humidity (non condensing)
Protection class:	IP 40
Cabinet:	Aluminium cast metal housing, powder coating RAL 9006, consisting of two parts

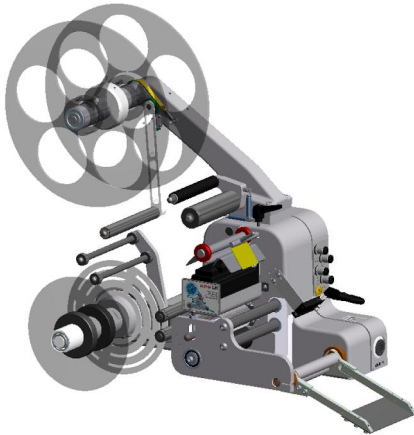
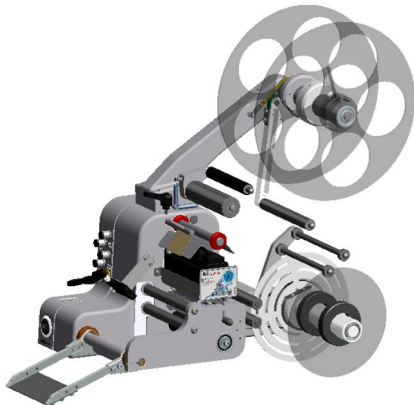
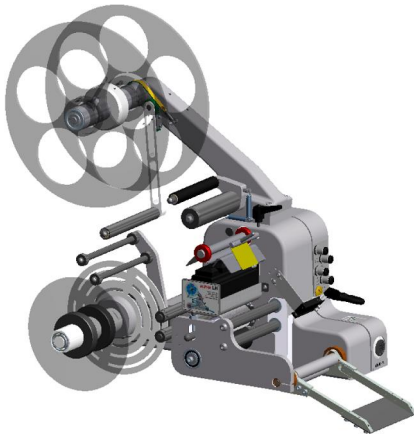
Charateristics:

- infinitely shaft encoder regulation in the range of 0 ñ 100m/min
- performance peaks up to 1100 labels/min
- position accuracy up to +/- 0,3mm
- drive by servo motor
- integrated Zero Down Time function
- configurable machine
- fast change of label size due to a simple labeling calibration function
- Ethernet interface (M12 industry plug connector) enables up- and download of applicator setup
- automatic detection of bad tags (skip function)
- stroke-dependent positioning
- applicator control is integrated in cabinet

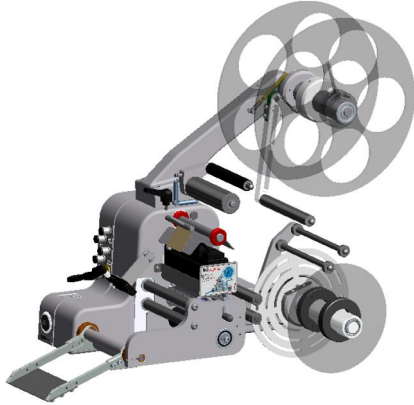
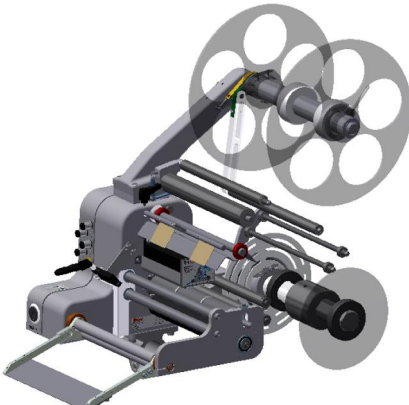
Classification of Alpha Compact Plus

Type	Description of the system
Pre-configured Alpha (basic version)	Wipe On label applicator, 120mm, 150mm, 200mm or 250 width, right and left version, is the Standard Alpha which is available immediately.
Field Installable Options	Field Installable Options are available ex stock and can be installed by the customer on-site with the help of an installation instruction.
Factory Installable Options	Options that are installed and tested ex-factory after placing the system order.
Modular construction	The Alpha Compact Plus can be assembled modular. It will be assembled ex-factory according to the appropriate instructions.

Pre-configured Alpha Compact Plus Variants

Variant	Mat.-No.	Description
120mm width/ LH	32100066	 Alpha Compact Plus 120mm LH - working width 120mm - lefthand version - speed range 0-100m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to ø 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German
120mm width/ RH	32100065	 Alpha Compact Plus 120mm RH - working width 120mm - righthand version - speed range 0-100m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to ø 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German
150mm width/ LH	32100068	 Alpha Compact Plus 150mm LH - working width 150mm - lefthand version - speed range 0-80m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to ø 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German

Pre-configured Alpha Compact Plus Variants

Variant	Mat.-No.	Description
150mm width/ RH	32100067	 Alpha Compact Plus 150mm RH - working width 150mm - righthand version - speed range 0-80m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to $\varnothing$ 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German
200mm width/ LH	32100070	 Alpha Compact Plus 200mm LH - working width 200mm - lefthand version - speed range 0-70m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to $\varnothing$ 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German
200mm width/ RH	32100069	 Alpha Compact Plus 200mm RH - working width 200mm - righthand version - speed range 0-70m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to $\varnothing$ 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German

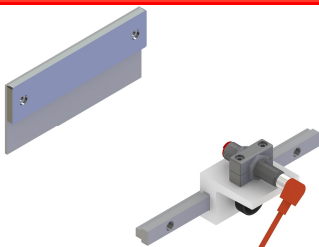
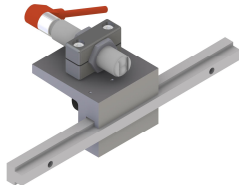
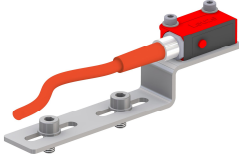
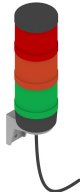
Pre-configured Alpha Compact Plus Variants

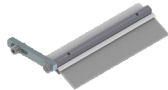
Variant	Mat.-No.	Description
250mm width/ LH	32100072	 Alpha Compact Plus 250mm LH - working width 250mm - lefthand version - speed range 0-60m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to $\varnothing$ 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German
250mm width/ RH	32100071	 Alpha Compact Plus 250mm RH - working width 250mm - righthand version - speed range 0-60m/min, infinitely variable - Wipe On peeler plate, 150mm length, pendular - label detection by opacity fork sensor from Disoric - unwinder for label roll diameter up to $\varnothing$ 300mm - connector for HMI - connector for product sensor (PNP o. NPN simple adjustment) - connector for alarm lamp - connector for low label sensor - connector for shaft encoder - connector for I/O - connector for Ethernet - FK40 mounting bracket with screws - Documentation German

Field Installable Options

Field Installable Options are simple assembly groups that are available pre-configured ex stock. The options can be easily adapted and installed by the customer with enclosed installation instruction.

Depending on customer's requirement it is also possible to complete the applicator with the Field Installable Options in our headquarter.

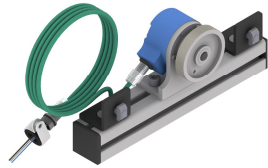
Field installable options	Mat.-No.	Description	Figure
Trigger sensor Light barrier adjustable	32700070	Incl. bracket, mirror and T-rail (PNP)	
Trigger sensor Reflective sensor adjustable	32700071	Incl. bracket and T-rail (PNP)	
Trigger sensor Cable for external start	35001812	5m cable with plug for connection to customer's PLC. Open cable end	
Low label warning	35001817	For connection to Alpha Compact. Axial scanning of the label roll. Signal available by alarm lamp and I/O interface	
Alarm lamp 3-colored	22702287	Green, yellow, red light incl. cable. Light diameter 71mm, height 172mm, IP65, LED	

Field installable options	Mat.-No.	Description	Figure
HMI Display	35002681	Cable length: 1,9m	
Pusher roller 120mm width 150mm width 200mm width 250mm width	35081019 35081028 35081044 35081047	PU-roller diameter 40mm. To push labels onto flat product surfaces	
Pusher brush 120mm width 150mm width 200mm width 250mm width	35081020 35081029 35081043 35081046	Brush with bristle length of 25mm. To push labels onto uneven product surfaces.	
Power cable EU Power cable USA Power cable UK Power cable Switzerland	33709377 33709375 33709378 33709376	Power cable for connection to Alpha Compact Plus. Length of power cable 2m.	
Power cable open cable end	29801903		

Field installable options	Mat.-No.	Description	Figure
User manual German	32708900	User Manual Alpha Compact Plus	
User manual English	32708901		
Other languages on demand	99999999		
Connection cable to IO socket	35002078	5m cable length, open cable end, 8-pins	
Connection cable to IO socket	35002080	10m cable length, open cable end, 8-pins	
Clamp terminal for IO interface and product sensor	32800034	Universal I/O clamp terminal for Alpha Compact Plus Rittal Box 200 x 150 x 80 according to wiring diagram -M12, 8 pin. cable, 5m, for I/O Interface X9 -M12, 4 pin. cable, 5m, for product sensor connection X2 -3x bolting M16, 1x M25	
Filter-regulator-unit	22800604	Is required additionally at each pneumatic unit to filter the air and to protect the pneumatics from dirt.	

Factory Installable Options

Factory Installable Options are assembly groups that are combined with the applicator in our headquarter and they have to be tested. These options can also be retrofitted on-site by an experienced technician.

Factory installable options	Mat. No.	Description	Figure
Shaft encoder fixed	22702443	Incl. bracket, friction wheel, connection socket and cable with 1024ppr	
Shaft encoder Spring loaded	22702444	Incl. bracket, friction wheel, connection socket and cable with 1024ppr	
Splitter box shaft encoder	99999999	For connection of two Alpha Compact Plus to one shaft encoder	

Modular construction Alpha Compact Plus

In modular construction, the Alpha Compact Plus will be fragmented in its single modules depending on width. It can then be assembled by the price list according to the customer's requirements.

The basic modules consist of:

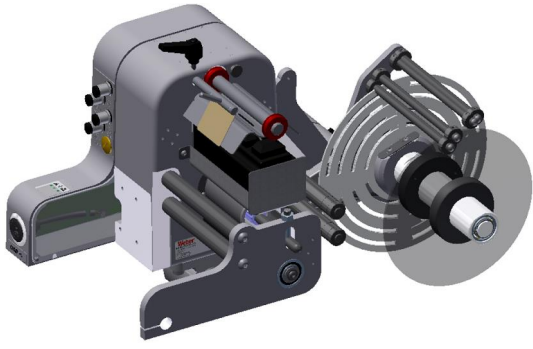
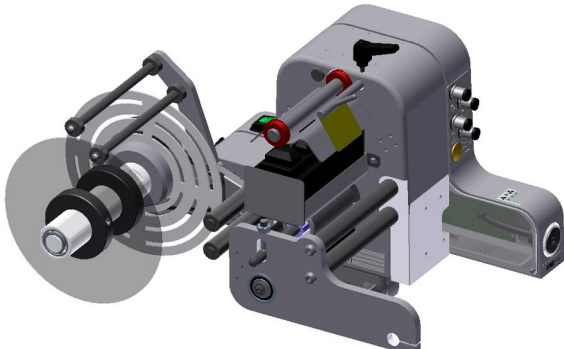
- Basic Alpha Compact Plus
- Label detection
- Applicator
- Unwinder

Besides these basic modules, also the suitable Field Installable Options or Factory Installable Options have to be/may be selected.

The Alpha configured on the basis of the modules will then be mounted, tested and supplied according to the customer's requirements.

Modular Assembly Groups Alpha Compact Plus

Modular Basis

	
Mat.-No.: 40004417 (120mm)/ 40006498 (150mm)/ 40006206 (200mm)/ 40004419 (250mm)	Mat.-No.: 40004418 (120mm)/ 40013461 (150mm)/ 40008574 (200mm)/ 40004420 (250mm)
Alpha Compact Plus, 120/150/200/250mm, RH, Version, Basic	Alpha Compact Plus, 120/150/200/250mm, LH, Version, Basic

Module Label Detection

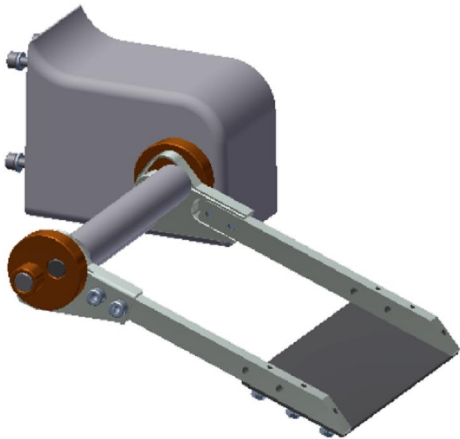
			
Mat.-No.: 35001789	Mat.-No.: 35001896	Mat.-No.: 35001895	Mat.-No.: 35002651
Standard Disoric opacity fork sensor LH/RH	For transparent labels with micro switch LH	For transparent labels with micro switch RH	For transparent labels with ultra-sonic sensor LH/RH

Module Unwinding

	
Mat.-No.: 35002544 (120mm)/ 40006345 (150mm) / 40005339 (200mm) / 40002890 (250mm)	Mat.-No.: 35002562 (120mm)/ 40013463 (150mm) / 40008584 (200mm) / 35002624 (250mm)
Standard, 310mm diameter plate, RH	Standard, 310mm diameter plate, LH

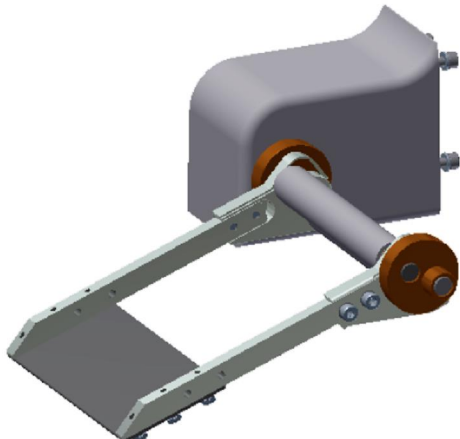
Module Application

Wipe On



Mat.-No.: 35002552 (120mm) / 40006357 (150mm) / 40005532 (200mm) / 40002913 (250mm)

Wipe On, RH, pendular
Width of peeler plate: 120/150/200/250mm
Length of peeler plate: 150mm



Mat.-No.: 35002579 (120mm) / 40013465 (150mm) / 40008576 (200mm) / 35002628 (250mm)

Wipe On, LH, pendular
Width of peeler plate: 120/150/200/250mm
Length of peeler plate: 150mm

Technical Details

HMI Display

- Handy four-line display (aluminium milled)
- Font height 5mm
- OLED-Display
- Multi-lingual
 - German
 - English
 - French
 - Spanish
 - Swedish
- Complete access to all configuration parameter
- Up to 10000 label sizes can be stored
- Status display
- Active configuration-data set
- Label counter
- Countdown-counter
- Dimension: 90x120x20mm (with rotary knob 35mm) (WxHxD)
- Weight: 430g
- Cable length: 1,9m
- Swiveling bracket

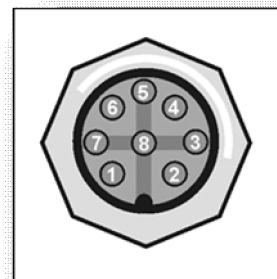


I/ O Interface

The I/O interface serves for the connection of Alpha Compact Plus with new system options or the customer's controller

Pin assignment:

1. Output signal: **Ready**, (n.o.) max:100mA, max. 30V
2. Output signal: **Roll end pre-warning**, (n.o.) max. 100mA, max. 30V
3. Output signal: **Sync**, (n.o.) max:100mA, max. 30V
4. Input signal: **Start** max. 10mA, Low < 3VDC, High > 15VDC
5. Com input signal
6. Com output signal
7. +24V
8. 0V



* all outputs which are supplied by (P 24) may consume together max. 250mA.

Ramps

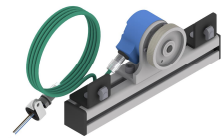
The ramp setting is not defined anymore as acceleration (g), but as distance (mm). The recommended standard ramp setting is max. speed range/10 e.g. max. speed range = 80m/min calculation: 80/10 corresponds to a ramp length of 8mm. This is valid for start- and stop ramp. Depending on application, it is also possible to adjust the stop ramp percentaged to the start ramp.

Skip-Function

The skip function allows that at maximum **three** labels may be missing in a row on the label liner. The resulting gap is compensated by the controller, so that the application process is not affected by the gap. The number of missing labels can be adjusted in system configuration. If more labels in a row are missing than adjusted in configuration parameters, it can no longer be compensated and the system will change to malfunction. Between peeler bar and label detection sensor there may exist also several gaps.

Shaft Encoder

For an optimal labeling result, the application speed of the labels must match with the transport speed of the products. If the products are always transferred with the same speed to the Alpha Compact Plus, a fixed setting of application speed will be sufficient. If the transport speed of the products varies, the application speed will have to be synchronized with the help of a shaft encoder.



For Alpha Compact Plus, shaft encoders with HTL interface (24 DC, push-pull output) are suitable.

TTL outputs (5V logic) are not suitable.

A parameterization of the shaft encoder can be either done by the HMI display or by PC software. Thus it is essential that the customer provides either one HMI display or the software.

Product Sensor

Product sensor 1 is adjusted to PNP. For readjustment to NPN, the setting has to be changed from PNP to NPN in the machine parameter.

Labeler Function

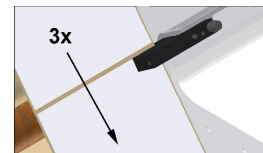
For initial setting of the labeler an HMI is necessary. In operation mode the labeler can be operated without HMI. The parameters are stored in the controller, so that an HMI is required only to change these parameters.

For example, a customer can control 5 labelers with one panel. If one labeler is adjusted by the panel, the labeler will have to be disconnected from it and the system will continue to run without HMI. This procedure can be repeated with the remaining 4 labelers. If the customer wants to change the settings on one labeler, the HMI will be connected again with this labeler and can be parameterized quickly.

Calibration

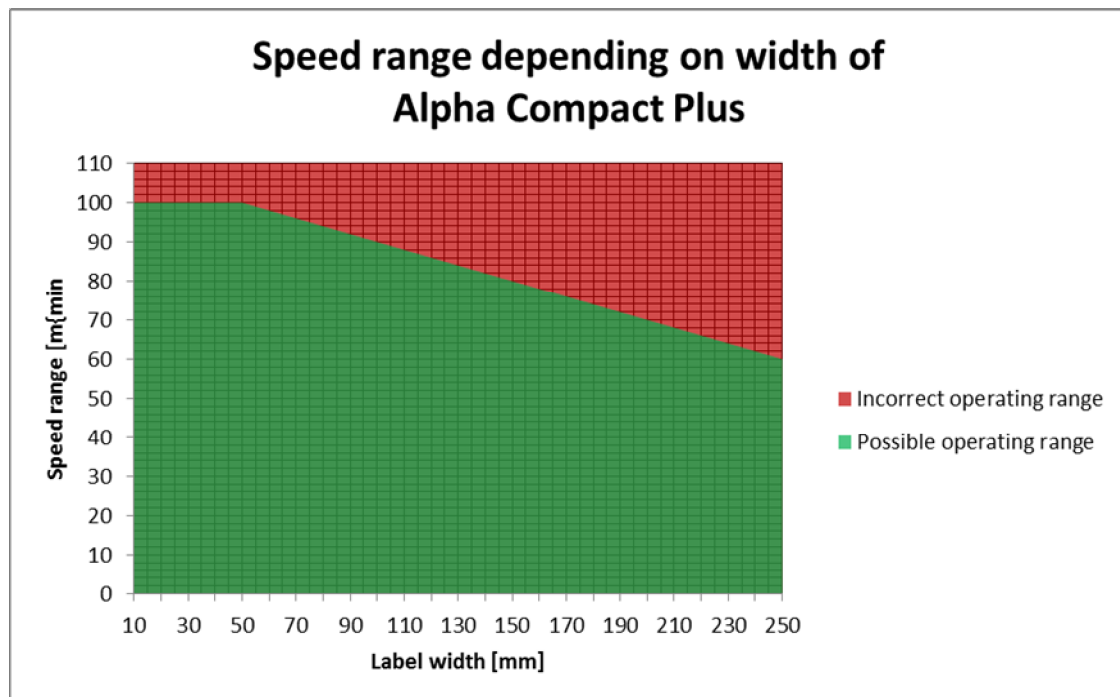
When changing the label size, a calibration is necessary. By a simple activation of the push-button, automatically several labels are fed and all necessary parameters are stored safely and quickly.

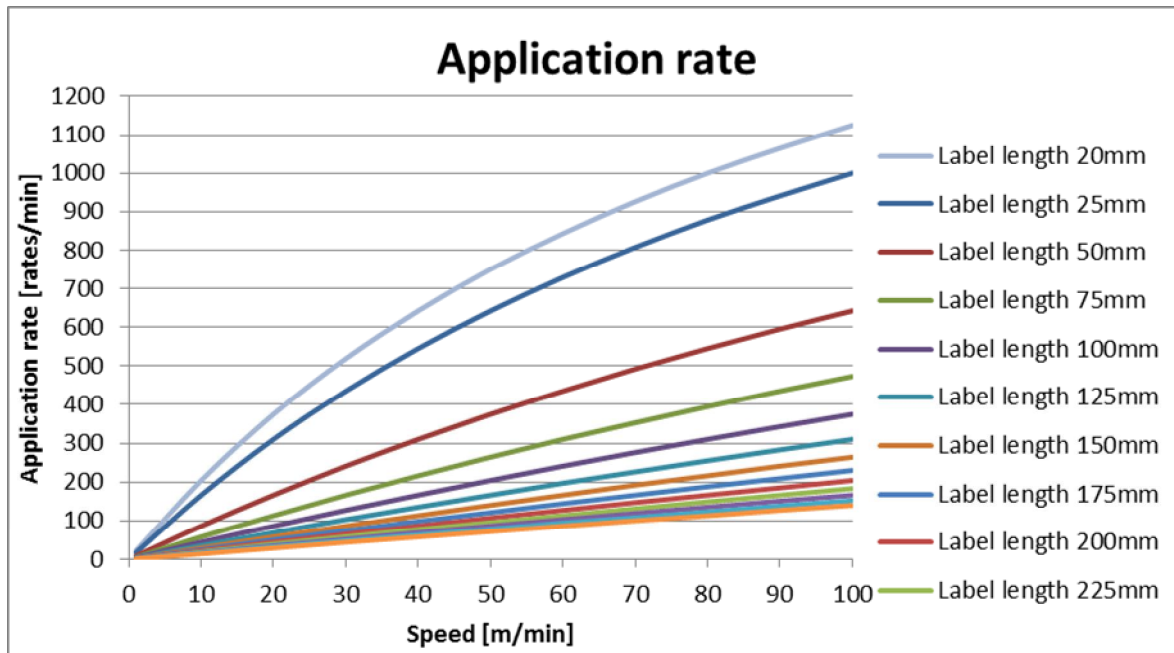
If a label roll of the same size should be changed, a calibration is not necessary anymore. It is sufficient, if few labels are applied manually so that the position of the labels corresponds again to the standard setting.



Performance Diagram

For an exact assignment of the application rates, a performance evaluation diagram is available.





Rates per minute														
		Label length [mm]												
		20	25	50	75	100	125	150	175	200	225	250	275	300
Speed range [m/min]	1	22	17	8	5	4	3	2	2	2	1	1	1	1
	10	204	166	86	58	44	35	29	25	22	19	17	16	14
	20	375	310	166	113	86	69	58	50	44	39	35	32	29
	30	519	435	241	166	127	103	86	74	65	58	52	48	44
	40	642	545	310	216	166	135	113	98	86	77	69	63	58
	50	750	642	375	264	204	166	140	121	107	95	86	78	72
	60	843	729	435	310	241	197	166	144	127	113	103	94	86
	70	926	807	492	353	276	226	192	166	147	131	119	108	100
	80	1000	878	545	395	310	255	216	188	166	149	135	123	113
	90	1065	941	595	435	343	283	241	209	185	166	151	138	127
	100	1125	1000	642	473	375	310	264	230	204	183	166	152	140

Result: rates per minute

Minimum Label Distance on Product

Distance leading edge label to leading edge label in mm at 3mm label gap														
		Label length [mm]												
		20	25	50	75	100	125	150	175	200	225	250	275	300
Speed range [m/min]	1	23	28	53	78	103	128	153	178	203	228	253	278	303
	10	25	30	55	80	105	130	155	180	205	230	255	280	305
	20	27	32	57	82	107	132	157	182	207	232	257	282	307
	30	29	34	59	84	109	134	159	184	209	234	259	284	309
	40	31	36	61	86	111	136	161	186	211	236	261	286	311
	50	33	38	63	88	113	138	163	188	213	238	263	288	313
	60	35	40	65	90	115	140	165	190	215	240	265	290	315
	70	37	42	67	92	117	142	167	192	217	242	267	292	317
	80	39	44	69	94	119	144	169	194	219	244	269	294	319
	90	41	46	71	96	121	146	171	196	221	246	271	296	321
	100	43	48	73	98	123	148	173	198	223	248	273	298	323

Result: distance leading edge label to leading edge label in mm

Formula: min. label distance = label length(HE) + label gap (A) + start ramp + stop ramp

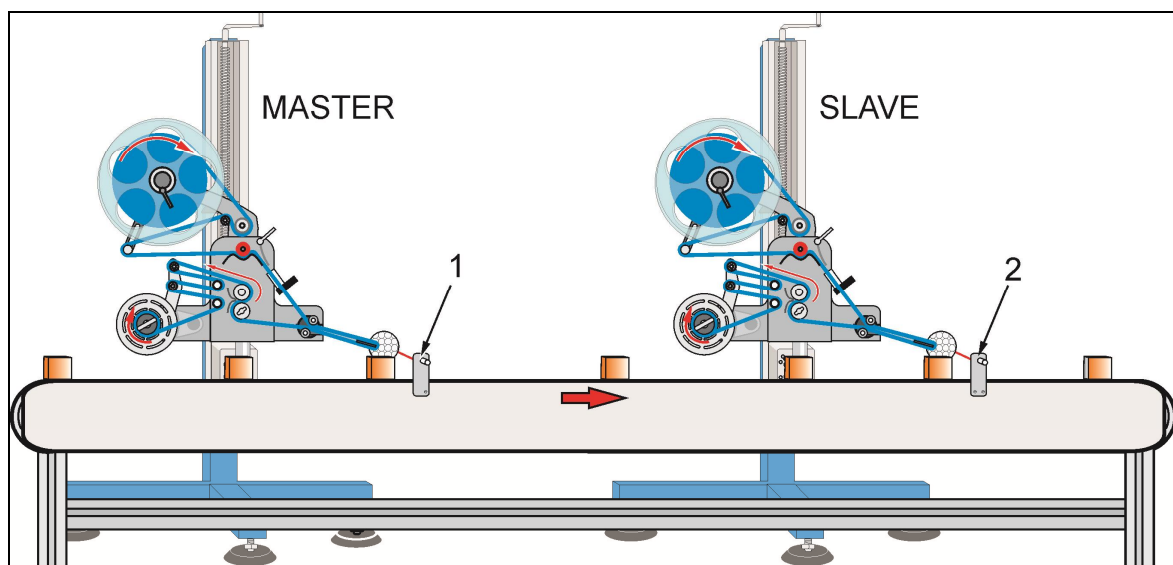
Zero Down Time

The Zero-Down-Time-function is used for labeling without system shutdown (e.g. at label roll change or web break) and it is established by a network connection between two labelers.

Both labelers are located in series at production line. In production running direction, the forward system is the active labeler (Master) and the backmost system is the standby labeler (Slave) that continues labeling the products when the master system has a breakdown.

The master-system reports permanently the status of the products that have been detected from first product sensor to the slave system. The products are though not only counted but the slave system receives also the information if a product was labeled by the master system or not. The shaft encoder mounted at the conveying system tracks the position of each product.

If the master-system stops during running production (e.g. roll end or web break), the slave system is automatically connected and thus a missing labeling of the products is impeded.



No.	Description
MASTER	ACTIVE LABELER
SLAVE	STANDBY-LABELER
1	PRODUCT SENSOR 1 TO MASTER-SYSTEM
2	PRODUCT SENSOR 2 TO SLAVE-SYSTEM

Function

Product sensor 1 detects a product which is then labeled by the master-system. The slave-system receives an appropriate information and ignores the already labeled product if the product is detected by product sensor 2.

Product sensor 1 detects a product which is not labeled by master-system (e.g. label roll end). The slave-system receives an appropriate information and expects after a certain stroke the product detection of product sensor 2, the slave-system labels thereupon the product.

An unlabeled product can be locked in the conveying system not only by the master-system but also by the slave-system (between the labelers). The slave-system labels then this product as the master-system has not sent any information.

The single operating conditions of the labelers are shown by a 3-colored alarm lamp.

Requirements:

Two labelers.

Both labelers receive their start signal by an own product sensor.

Connection of the labelers by network connection (X20 Ethernet).

A shaft encoder that is connected by a splitter box to both labelers or 2 .

For each labeler a separately connected shaft encoder.

Connections

The labeler provides different electrical connections depending on machine configuration that are located laterally at the cabinet.

If optional connections belong to the scope of supply, the configuration of the inputs are adapted accordingly.

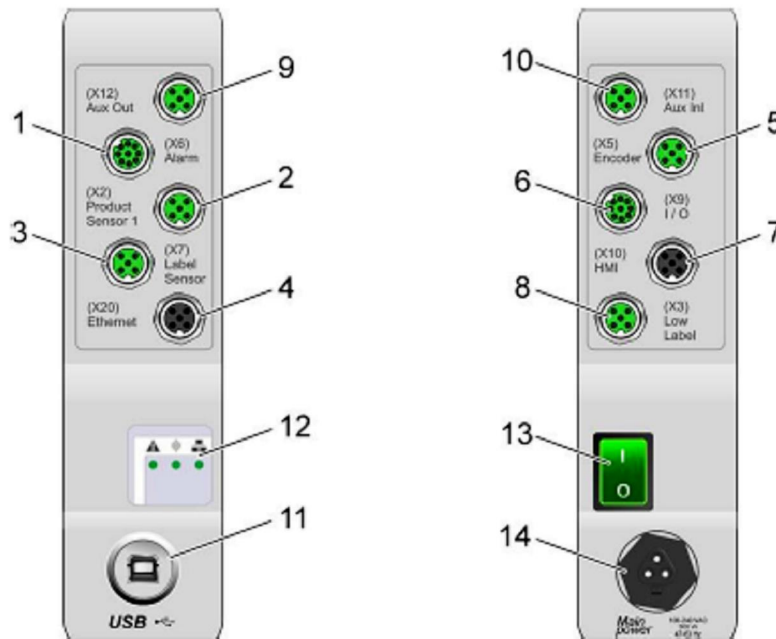


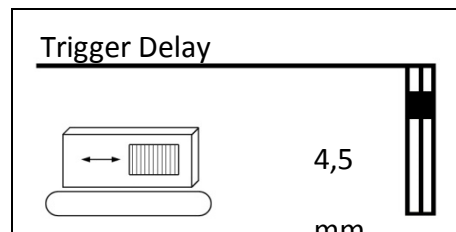
Fig. 6-1 Electrical connections

No	Description
1	(X6) SIGNAL LAMP
2	(X2) PRODUCT SENSOR 1
3	(X7) LABEL SENSOR
4	(X20) ETHERNET
5	(X5) SHAFT ENCODER
6	(X9) I/O
7	(X10) HMI
8	(X3) LOW LABEL WARNING
9	(X12) AUX OUT OUTPUT FOR: PNEUMATIC PEELER PLATE, MARKOPRINT-PRINTER,
10	(X11) AUX IN INPUT FOR: PRODUCT SENSOR 2, WEB BREAK SENSOR
11	USB
12	ALARM LAMPS
13	ON- / OFF SWITCH
14	POWER SUPPLY

Functions

Trigger Delay (Trigger Delay)

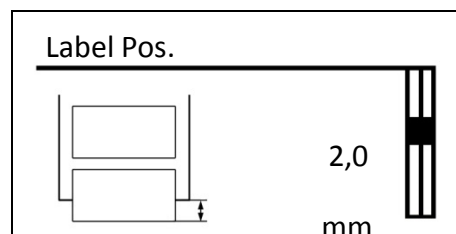
This parameter can be used to delay the labeling procedure, i.e., by how many millimeter the label is applied displaced on the product from trigger signal on. The adjustment range is 0 to 999,9 mm



Label Position

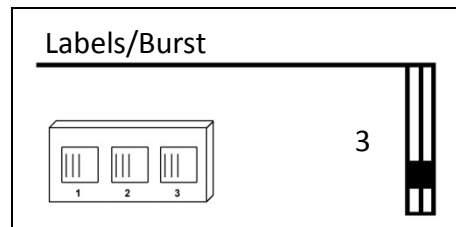
The application position is a value that ensures that a label stops flush with the peeler bar. Here the value can be adjusted and the label can be placed back or forward. The adjustment range is -20,0 to 20,0 mm.

This value is automatically determined with calibration function



Labels Burst (Labels/Burst)

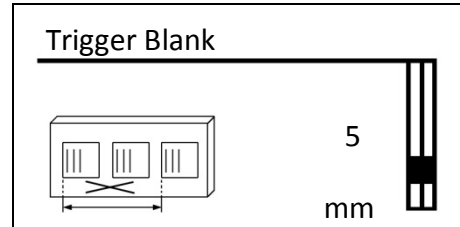
This parameter determines the number of labels per application cycle (Trigger signal). The adjustment range is 1-100.



Functions

Trigger Blank (Trigger Blank)

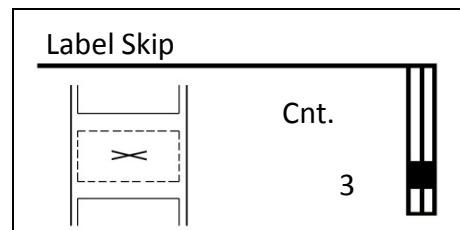
This parameter determines the way where incoming trigger signals are ignored and no application procedures are tripped. This adjustment is particularly useful for products with irregular shapes or foil packagings whereby multiple triggerings per product may arise. The adjustment range is 5-1800 mm.



Label Skip

This parameter determines the number of missing labels. The labeler is able to compensate a missing label by feeding the gap to the next label. The adjustment range is 0-20.

The display of the parameter **Label skip** in configuration menu can be activated or deactivated by the machine parameter **Lab. Skip Confóin** system menu.



Label Distance (Label/Distance)

If in parameter **Labels per triggering** more than one label was selected, here the distance between the labels can be adjusted. The distance refers to the labels' leading edges. The adjustment range is 5-1800 mm.

The min. label distance is calculated from the parameters **Label length** + **label gap** + **ramp** + **stop ramp**

