Interspace divert and merge module

XBUT 180 C

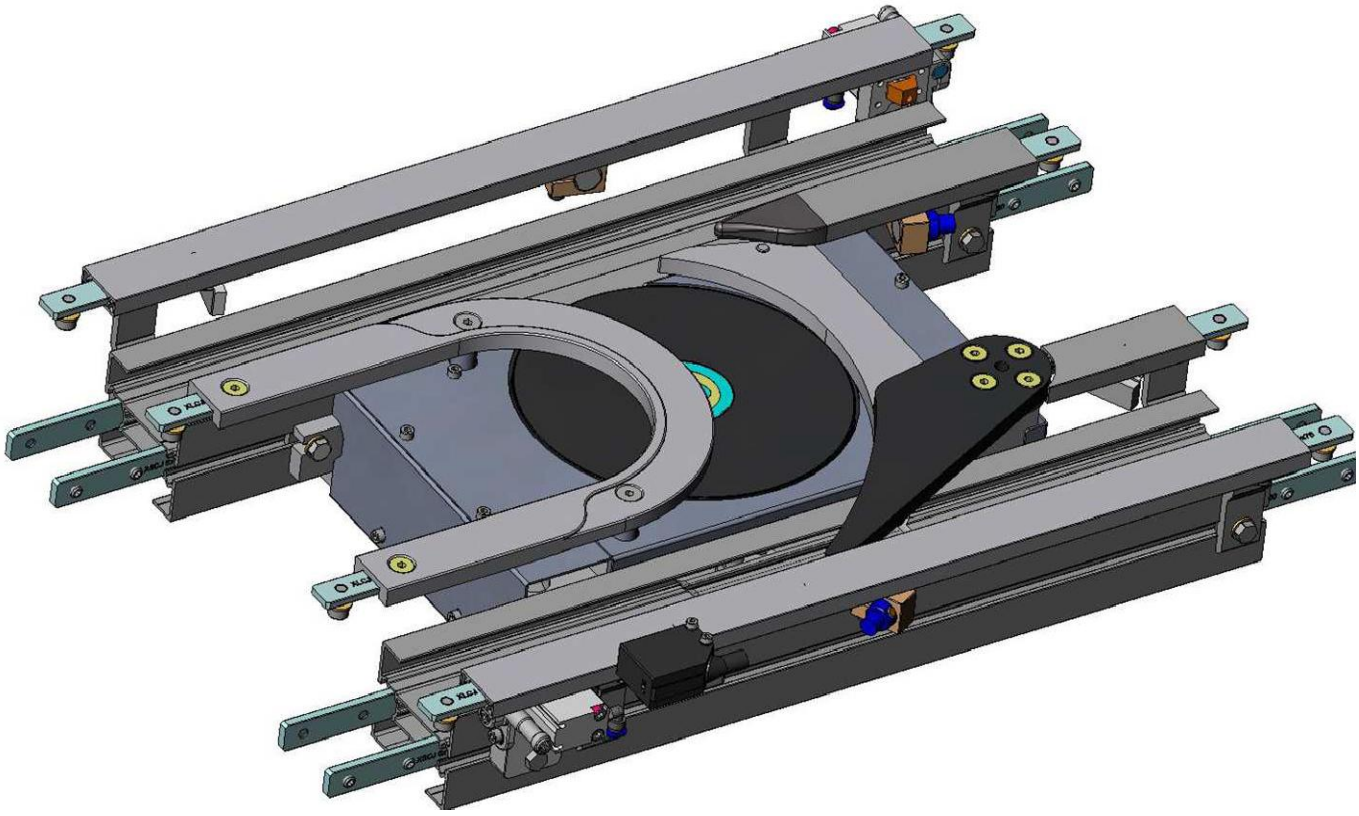
5110813-01

5110815-01

User documentation ver 1.1

QR 6621379

Interspace divert and merge module XBUT 180 C



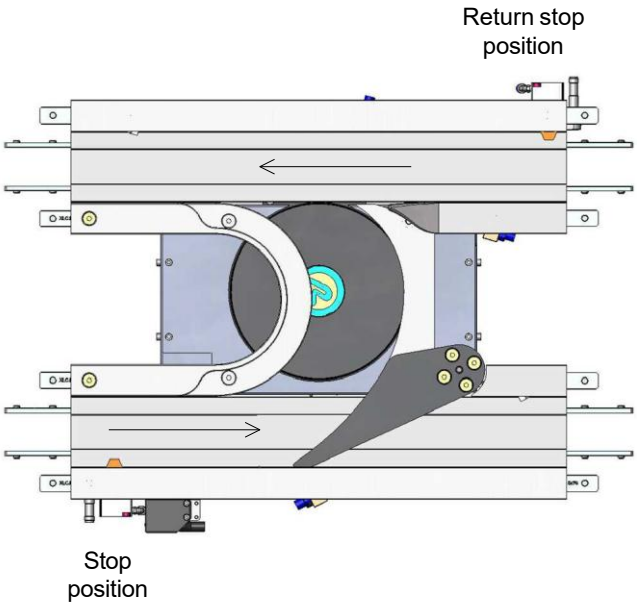
Observe! The sensor set-up depends on pallet size.

Interspace divert and merge module XBUT 180 C

Function description

The Interspace module is divided into Stop position and Return stop position.

This function supports ”non-memory transports”.(see below)



Internal positions

Stop position

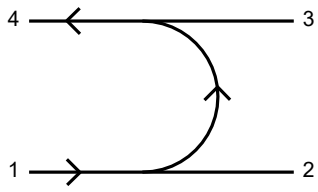
The RFID-reader of the Stop position identifies the pallet, which is necessary for deciding whether the pallet should go straight or go through the short-cut.
Single pallets or multiple simultaneous pallets are allowed to be released downstream the straight flow, while single pallets are allowed through the short-cut one at a time.

Return stop position

Single or multiple pallets are let downstream along the return flow when no other pallet is on the way from the Stop position.

Cycle time at conveyor speed 5 m/min

1-2	5 sec
3-4	8 sec
1-4	10 sec



Data:

- Pre-stop queue pressure limit: 100 kg

Notes:

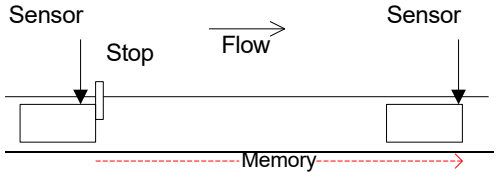
- The station is not equipped with any downstream maxqueue sensor as the design is only possible with an overview of the line as a whole.
- The sensor configuration is depending on the size of pallet. Mixed flow with reference to pallet length is not possible.

Non-memory transports

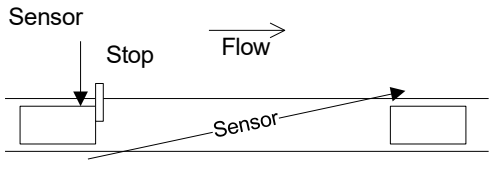
The ”Non-memory transport” design makes the module less sensitive to unnormal situations as when a pallet is by mistake lifted-off the module during a transport.

Independent of where a pallet is inside the module, it is always detected by a sensor. It is detected from the moment it leaves a stop. As the module monitors the sensors directly, if a pallet is lifted off, the module auto-recovers and release the second pallet downstream.

The alternative would be that the sensor placing is such that it requires a memory to remember the pallet-transport. While the memory is on, it stops the second pallet from being released by the stop. The disadvantage of this method is that if the pallet is lifted-off, the memory would stay on until forever, thus never releasing the second pallet. A situation is arisen which could be difficult to understand and solve.



Memory transport



Non-memory transport

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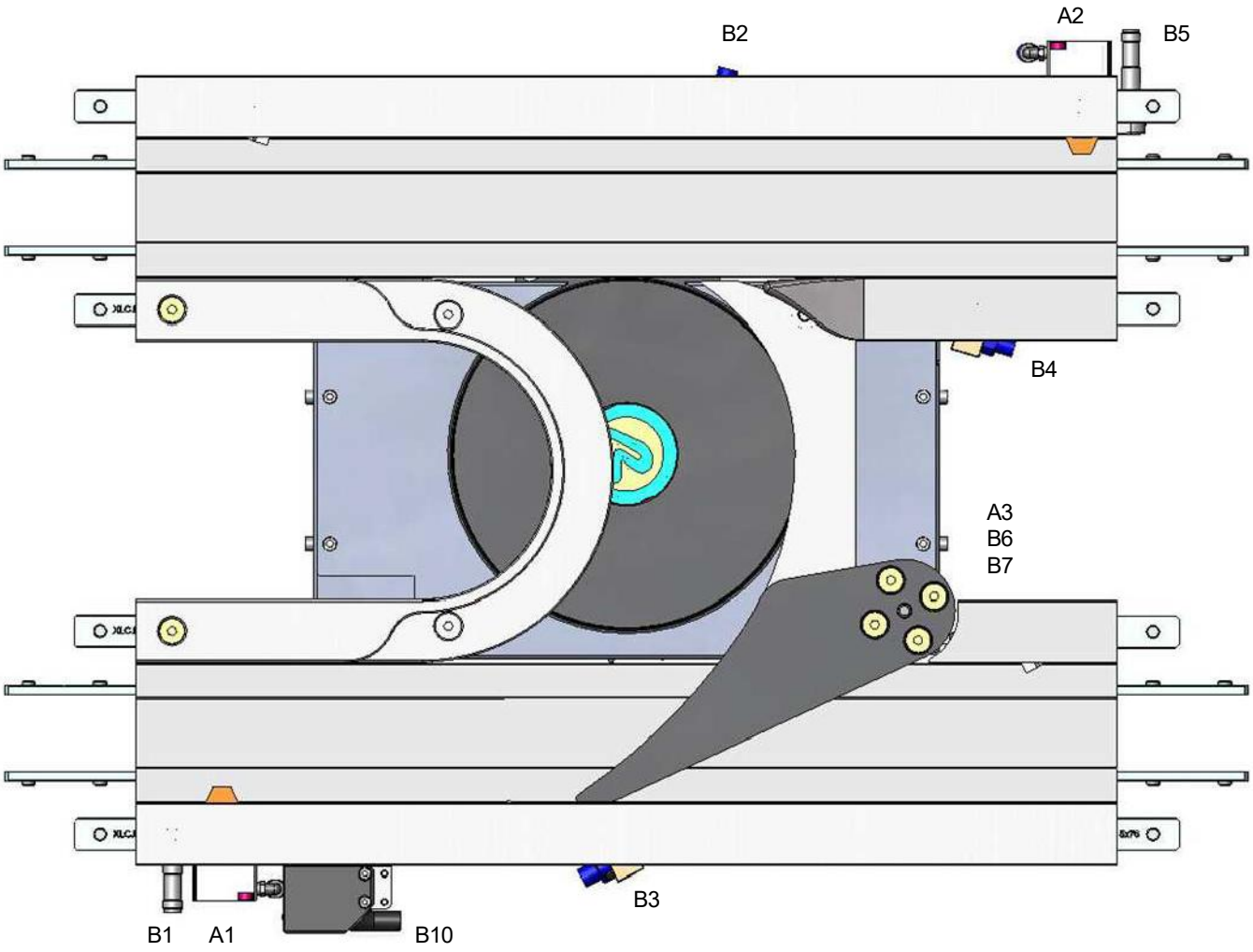
Initiators and actuators



Initiators

B1 Pre-stop
B2 Occupied 1
B3 Occupied 2
B4 Occupied 3
B5 Return stop
B6 Straight flow
B7 Short-cut flow

B10 RFID

Actuators

A1 Stop. Single acting.
A2 Return stop. Single acting.
A3 Arm. Double acting.

Interfaces

Initiators

B1: M12-connector, 3-pin
B2: M12-connector, 3-pin
B3: M12-connector, 3-pin
B4: M12-connector, 3-pin
B5: M12-connector, 3-pin
B6: M12-connector, 3-pin
B7: M12-connector, 3-pin

B10: M12-connector, 4-pin (Asi)

Note: Sensors placed inside the housing is equipped with sensor cables (with the given connector type above), reaching outside the housing.

Actuators

Pneumatic cylinders
- A1: 6 mm
- A2: 6 mm
- A3: 6 mm (tubing)

Note: The A3 cylinder, placed inside the housing, is equipped with tubes (with the given size above), reaching outside the housing.

Spare parts

Standard name	Des.	Manufacturer	Type	Order number	FlexLink ID
Sensor	B1	SICK	IM12-08NPS-ZC1	7900045	5058572
Sensor bracket		FlexLink	XBPB 12 H		5110793
Sensor	B2	SICK	GLR 18S-P2336	1026129	5058929
Sensor bracket		FlexLink			5059001
Sensor	B3	SICK	GLR 18S-P2336	1026129	5058929
Sensor bracket		FlexLink			5059001
Sensor	B4	SICK	GLR 18S-P2336	1026129	5058929
Sensor bracket		FlexLink			5059001
Sensor	B5	SICK	IM12-08NPS-ZC1	7900045	5058572
Sensor bracket		FlexLink	XBPB 12 H		5110793
Sensor	B6	SICK	MZT7-03VPS-KR0	1070821	5058571
Sensor	B7	SICK	MZT7-03VPS-KR0	1070821	5058571
RFID Reader/Writer	B10	IFM	DTA100		5058152
Read/Write head bracket		FlexLink			5110840

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Read/Write head bracket		FlexLink			5110840

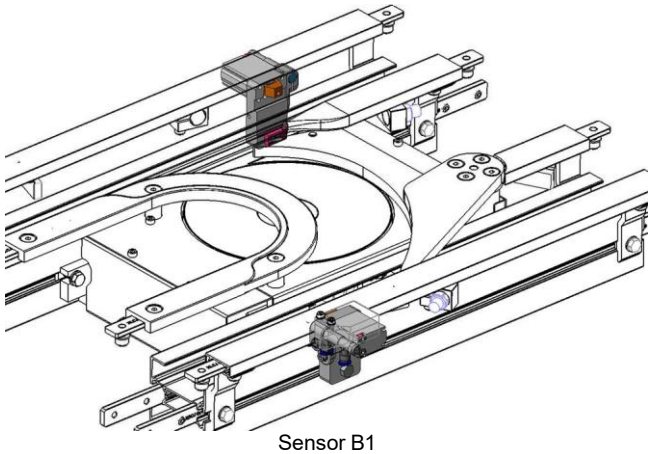
Sensor details

Sensor B1 ”Stop”

Type: Proximity switch, inductive

Position: Placed together with stop.
Function: Detects the initiator plate of the pallet before the pallet is stopped and stays active until the pallet leaves the stop.

The reason why the pallet is detected by the sensor before the pallet hits the stop, is to enchance the efficiency of the pallet flow. As the pallet is detected in advance, the controller has time to take a decision whether or not the pallet should be stopped. If it should pass, the stop change state to ”Release flow” before the pallet reach it.

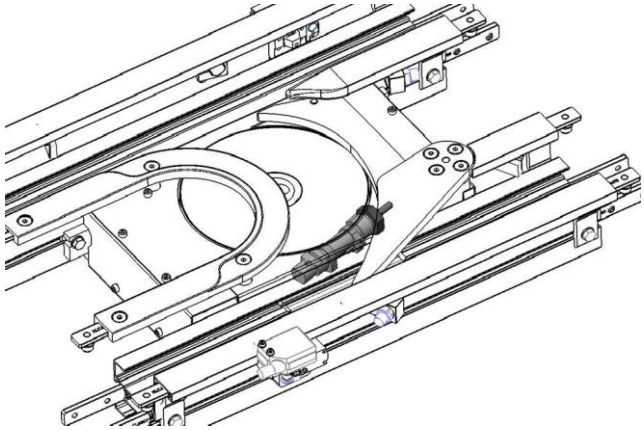


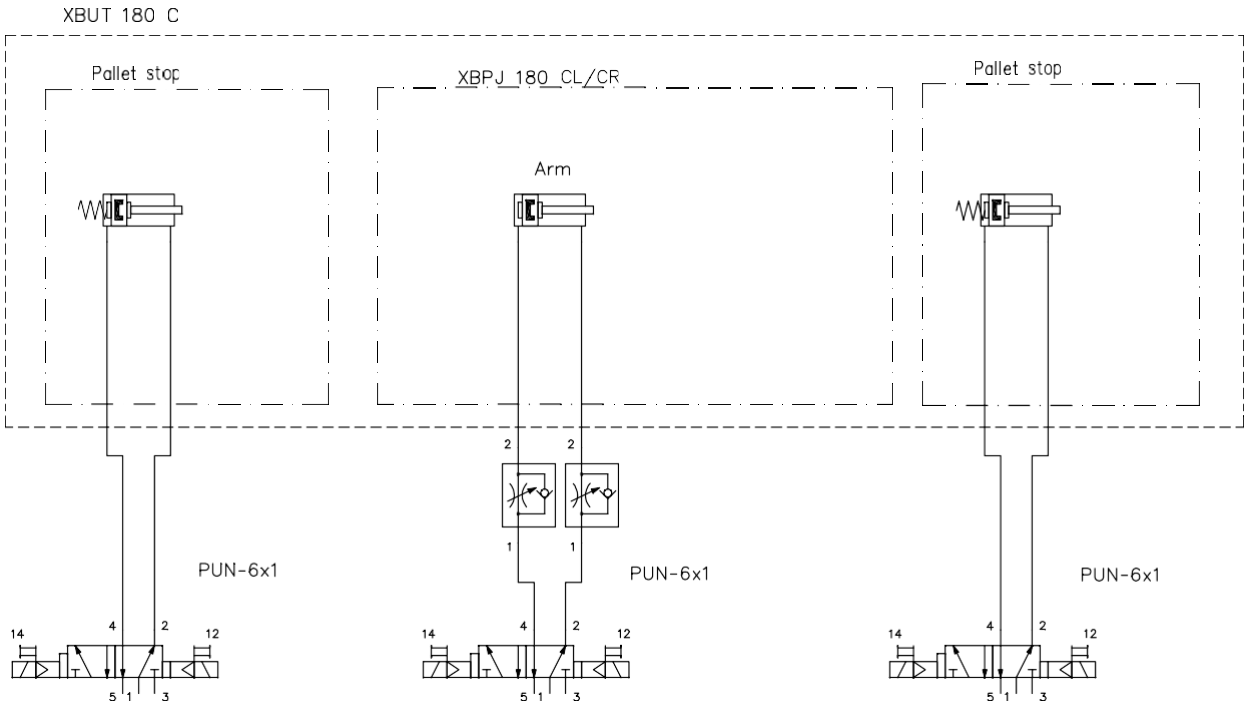
Sensor B1

Sensor B6 and B7 ”Arm”

Type: Cylinder sensor

Position: Placed on the arm cylinder.
Function: Detects the arm position



Sensor B6 and B7

Pneumatic drawing