

PowerFlex - SmartFlow

Mobile/ Flexible Conveyors

Data Sheet:

Flexible Driven Conveyors – PowerFlex - SmartFlow

Applicable Models: PF15-SF / PF19-SF



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Product Description

PowerFlex is designed to be a robust, flexible and reliable conveyor solution for almost any operation requirement. Using its integrated handles and intuitive design, the conveyor can be contorted and shaped to fit into infinite environments. Its braked castors, 240v power supply and renowned latching connections, make it an incredibly user-friendly piece of equipment.

The PowerFlex SmartFlow platform differs from traditional PowerFlex with its distinct controls functionality. SmartFlow allows for multiple flow control options within one conveyor. Different user operations call for different equipment functionality - SmartFlow puts them all in one place.

The selector switch, mounted on the conveyors self-contained control box, gives you the options to switch from 5 varying flow control modes. See below for further details. PF-SF also retains all PowerFlex's renowned functionality - simply connect multiple SmartFlow units together to create whatever length is required.



Technical Data

Structural Data

Expanded Unit Length	0.6m to 20m variable – Others available on request
Effective Width	450mm, 750mm, 900mm nominal – Others available on request
Roller Pitch	127mm, 102mm, 76mm, 55mm nominal – Others available on request
Module Height (TOR)	800mm to 1100mm adjustable height – Others available on request
Incline/ Decline	Max. 2° - Greater can be achieved on request
Side Plates	40mm or 50mm Ribbed Aluminium Construction
Legs	32mm or 38mm Fabricated steel
Castors/ Feet	150mm or 200mm Brakes Castors – Foot plates available on request
Physical Connection	Roller Stop Connector/ Anchor Frame – Alternatives available on request
Compaction Ratio	0.33 or 0.41



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Roller/ Drive Data

Roller	Ø40mm or Ø50mm Z/P steel tube, Precision bearings, Ø12mm Z/P axles - M8 female thread
Drives	Multiple DC motors, 90W each, 20Vdc-120Vdc
Drive Method	5mm Poly-cords (85° Shore hardness) – Alternatives available on request
Torque Transmission	Roller to roller
Variable Speed	5 to 36 m/min – Controlled from the onboard speed controller
Forward/ Reverse	Both are available – Controlled from the onboard speed controller
Load Capacity	150kg / linear meter
Flow Control	5x Selectable Run Modes

Electrical Data

Power Supply	230v, Single Phase, 50Hz, 16A (per Master Module)
Conveyor Connections	24Vdc – 16 Pin Harting Connection
Isolation	Localised onboard LOTO Isolator (per Master Module)
Start/ Stop Control	Push button stations at both ends
Emergency Stops	Options available on request
System Integration	Options available on request
Controls	Siemens S7 1200 PLC
Wiring	AS-i Bus

Efficiency Data

Noise	0 to 70dB(a)
Motor Rating	0.09kW
Max. Amperage	1.0A per motor - nominal
Sleep Modes	Options available on request
Efficiency Flow Control	5x Selectable Run Modes
Conveyor Speed	Potentiometer adjustable to precisely suit the operation.

Product Principles

PowerFlex – SmartFlow is an enhancement to our already renowned PowerFlex15 and PowerFlex19 models. The philosophy encompasses all required conveyor flow control options in one Flexible Conveyor. Using ASi Bus wiring, PLC control and state-of-the-art controls design, a PowerFlex SmartFlow can deliver multi-mode functionality in one machine.

Operationally identical to the existing PowerFlex range, a simple positional switch can determine whether your PowerFlex operates as a ZLP, Build Back, Electronic Package Stop, or even a standard (non-controlled) conveyor. Now, rather than having a collection of specific/ single-use machines, a stock of PowerFlex SmartFlow can become whatever the operation needs – all at the turn of a switch.

Needing only a 16A power feed, the PowerFlex's onboard control box and speed controller support the whole conveyor. If a situation calls for a PowerFlex that is longer than standard, 2 units can be connected and the communications pass between them – they will function as one. Adding more PowerFlex and even varying styles of BestConnect Modules, makes it possible to create larger, more complex and variable systems.

For more information and a visual demonstration, please see the below video link.

<https://www.youtube.com/watch?v=jZGAbAQU624>

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- **Mode 01 - ZLP Singulation Release.** Providing a singulated and controlled flow of products along the conveyor line. Once the upstream zone is free, the product will move individually forward.
- **Mode 02 – ZLP Train Release.** This mode functions in much the same way, but with a distinct difference when products advance upstream. When the end zone is cleared (the product has been taken off the end of the PowerFlex), all zones release simultaneously. This results in a train release that progresses all zones at once.
- **Mode 03 – Build/ Die Back.** The conveyor initially looks to function as if there is no control present. All products move upstream undisturbed. Once one product reaches the final zone though, the conveyor begins to systematically stop the zones up the length of the conveyor to reach maximum parcel density. Once the end zone is cleared, the products progress again.
- **Mode 04 – Package Stop.** The conveyor is in an ‘All Run’ mode and operates in a low controlled state. In much the same way as the Build Back operates, once a product gets to the final zone, the whole conveyor line stops. Products do not advance until the final zone is cleared.
- **Mode 05 – All Run.** The All Run mode allows the conveyor to bypass its controls functionality and operate as a standard PowerFlex unit. Useful for achieving high, uninterrupted throughput or for larger product handling.

Performance Options



Side Guides

Preventing the transported goods from running off the edges of the modules. Various options and other product flow assist devices are available on request.



Roller Stop Connection

Provides a simple mechanical connection between conveyor sections to allow longer lines to be built. This also acts as a drop-down stop at the end of lines.

The Roller Stop Connector allows the integration of other catalogue products too. SVL's, BestConnect Modules and even Telescopic's, can all be connected to a PowerFlex to create the perfect operation.



Impact Loading Table

A fabricated steel side frame is braced throughout to create an Impact Loading section to handle the increased abuse and wear normally associated with the loading point of a conveyor. Adding this item will significantly prolong the life of this area of a PowerFlex conveyor.



Axle Centres

In addition to the standard axle centre of 127mm options of 102mm and 76mm are available on request to handle smaller packages.

Often used in the post/ packing sector, reduced axle centres (roller pitch) can allow PowerFlex to function almost identically as a standard rigid conveyor, but with its exceptional flexible functionality.

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