

Powering Business Worldwide

SAFETY NOTE

ONLY A COMPETENT ELECTRICIAN SHOULD CARRY OUT ELECTRICAL INSTALLATION, REPAIRS OR MAINTENANCE.

Ensure that the conveyor is electrically isolated and stationary before carrying out any work on any conveyor equipment.

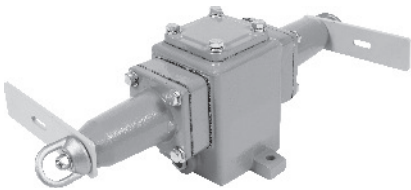
Operation

The conveyor belt trip switches are used in conjunction with other accessories along side conveyor systems to provide a fail-safe stop mechanism for emergencies. They are installed along the entire length of the conveyor or where ever persons could have access. Once activated these switches isolate the control circuits of the motors driving the conveyors and other process equipment.

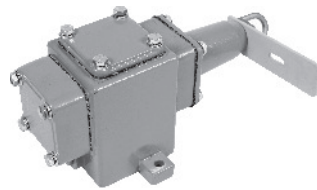
In an emergency, pull on the wire rope, attached at either end to the conveyor safety switch, to trip / stop the conveyor. Should your application require slack or broken rope detection please have a look at our slack rope switches part No. CHW53198A and CHW53197A.

Installation

CHW53197



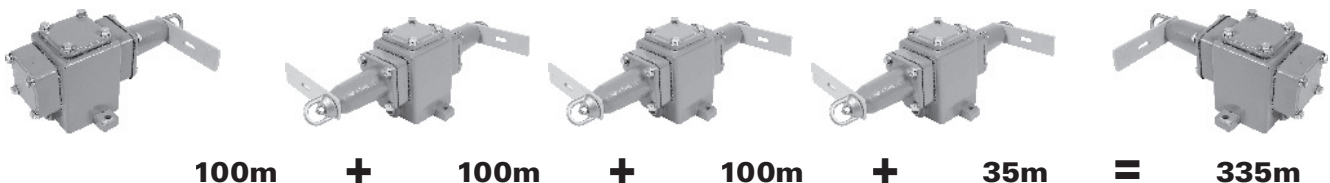
CHW53198



- CHW53197 - Double end conveyor safety switch
- CHW53198 - Single end conveyor safety switch

Both the single and double ended conveyor safety switches are mounted using two M10 bolts. Distance between two switches must not exceed 100 metres however they may be less. Depending on the length of exposed area you may require only two single end conveyor safety switches or combination of double and single end conveyor safety switches. Always ensure that your design allows for pulling in any direction and on both the horizontal and vertical plane to the wire rope. Never design your system to pull against an anchor point as this will have no effect on stopping the conveyor. The example below uses two single and three double ends to cover 335m.

Example selecting switches for a slack rope system of 335 metres:



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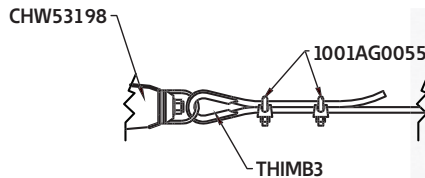
1. Mount the double and single switches as per example on page 2 ensuring the distance between switches never exceeds 100m although may be less.
2. Gland and terminate each switch electrically before proceeding with the installation. For details on electrical termination see section on wiring diagrams that follows on page 5.
3. Drill and mount pigtails 1.8 m apart between the switches. You will require a 10 mm hole to secure each pigtail. Mount the pigtails in line to guide the wire rope from one switch to the next with the wire rope passing through the centre of the eye on the pigtail.

PT12SCW5000



Pigtail, M10 x 125, 1,5 turns 80mm thread

4. Thread the wire rope through the eye of the pigtails between switches.
5. Attach the wire rope to all ends on the conveyor safety switches as shown below using one thimble and two Crosby clamps.



THIMB3

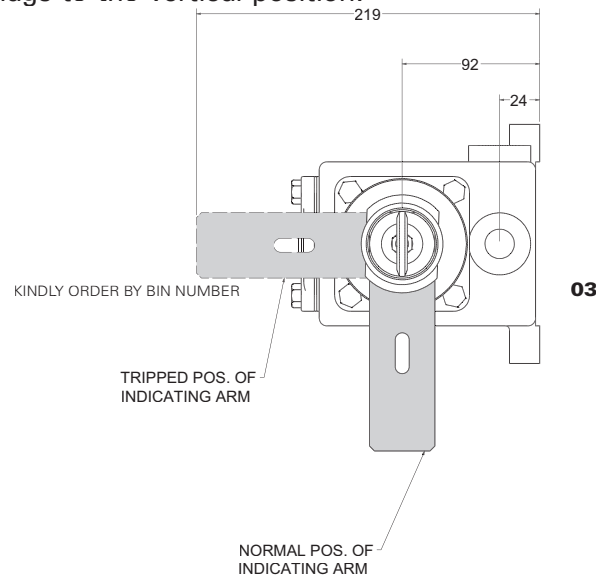


1001AG0055



3-5/33 - Wire Rope

6. Ensure that all the conveyor safety switches are in the healthy position, the yellow trip flags must be vertical. If it's horizontal, it's in the tripped position. See diagram below. Reset all by moving the yellow trip flags to the vertical position.



7. Before fixing the Crosby clamps pull up the slack in the wire rope so that no more than 10mm slack exists anywhere along the wire rope. This ensures minimal travel of the wire rope to trip.

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Reset after Conveyor Safety Switch Trip

Tripped conveyor safety switches are easy to identify as their trip flags move from the vertical position to the horizontal position. Simply move the yellow trip flag from the horizontal position back to the vertical position.

While resetting both switches do a visual check of the rope, pigtails, thimbles and Crosby clamps on the tripped section to make sure the installation has not been compromised by what ever activated the wire rope, rock falling off the conveyor.

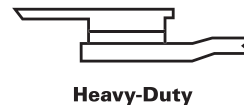
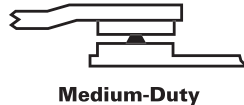
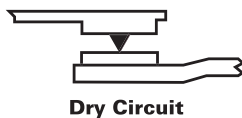
Electrical Connection

Each double end conveyor safety switch has two normally open contacts that will be open in the trip position and closed in the healthy position as well as two normally closed contacts that will close in trip position and open in healthy position to ensure fail-safe operation. Each single end conveyor safety switch has one normally open contact that will be open in the trip position and closed in the healthy position as well as one normally closed contact that will closed in trip position and open in healthy position to ensure fail-safe operation.

Contacts	Description	Bin No
2NO / 2NC	Double End Conveyor Safety Switch	CHW53197
1NO / 1NC	Single End Conveyor Safety Switch	CHW53198

All these contacts must be wired in series to ensure continuity of control circuit.

Maximum Ampere Rating (A)	AC				DC	
	120	240	480	600	125	250
VOLTS						
Make and Emergency Interrupting Capacity	60.0	30.0	15.0	12.0	1.1	0.55
Normal Load Break	6.0	3.0	1.5	1.2	1.1	0.55
Continuous Current	10.0	10.0	10.0	10.0	5.0	5.0

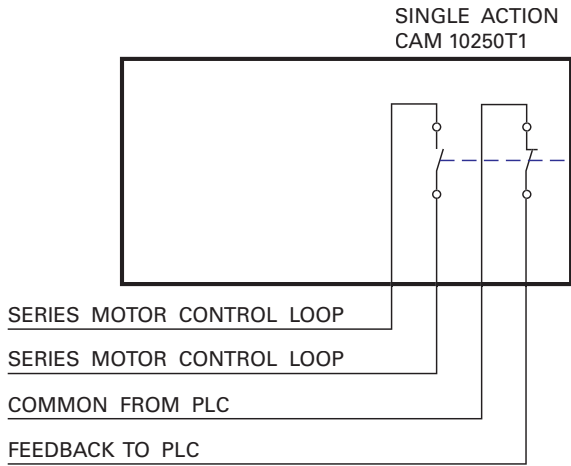


Contact blocks have one or two mechanically and electrically isolated contacts for greater protection against arcing and carbon tracking. The contact nibs combine a scrubbing action with high-pressure density when the contacts are closed. The nibs are very reliable and self-adjusting to the application dry, normal or heavy duty. Moulded from high impact phenolic, the contact structure provides superior resistance to moisture, heat and mechanical abuse. Foreign matter cannot reach the contacts to cause excessive wear and fatigue resisting stainless steel springs ensure a uniform arc gap at all times. When load is applied, the contact tips adjust to an exact size to efficiently carry normal or heavy load current making them ideal for low voltage dc or high voltage ac applications.

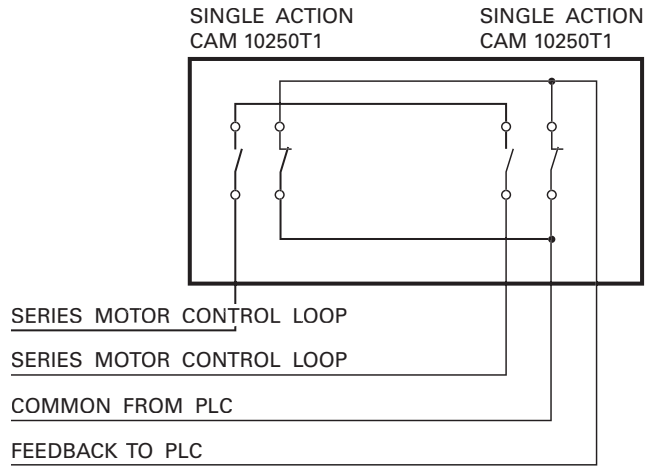
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Wiring Diagrams

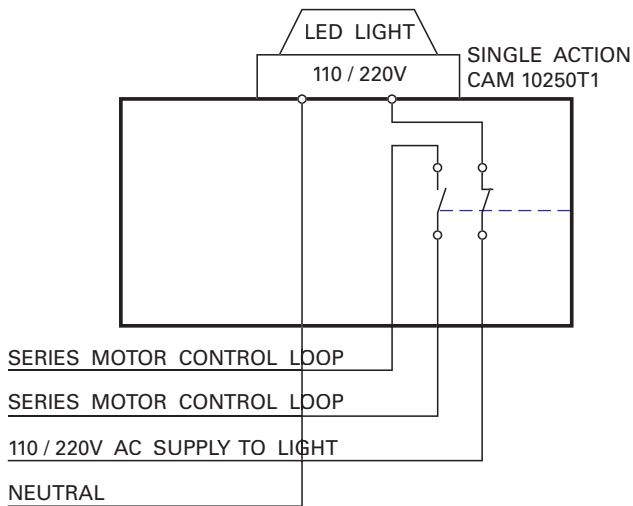
CHW53198 SINGLE BELT TRIP SWITCH WITH PLC FEEDBACK CONTACTS



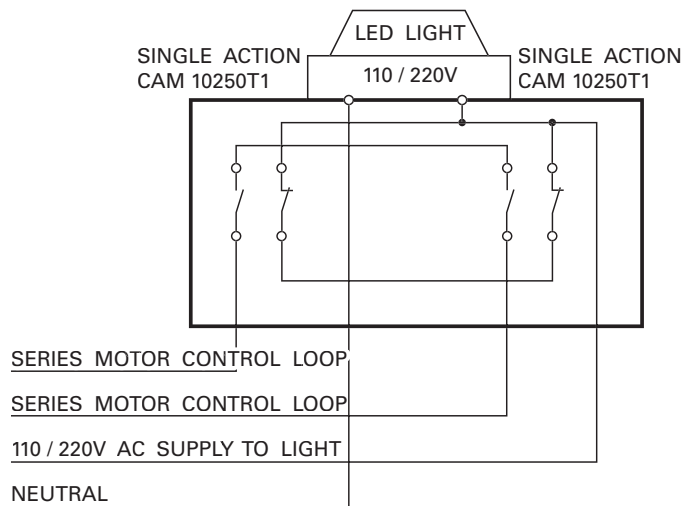
CHW53197 DOUBLE BELT TRIP SWITCH WITH PLC FEEDBACK CONTACTS



CHW53198 SINGLE BELT TRIP SWITCH WITH LED LIGHT



CHW53197 DOUBLE BELT TRIP SWITCH WITH LED LIGHT



Eaton Conveyor Standard Belt Trip Switch - Installation Manual

Technical Data

Due to the environment these switches operate in, they have been tested to Zone 21 specification by Explolabs. They are also manufactured to ISO 9001, ISO 14000 and ISO 18000 to ensure the highest quality at all times.

DEVICE COMPLIES WITH	IEC / SANS 60079-0 2005 Ed3
	IEC / SANS 60079-1 2004 Ed3
	IEC 60947-5-1
MOUNTING	2 Bolts M10
AMBIENT TEMP	-20°C - 70°C
PROTECTION	IP66
CABLE ENTRY	3 x M20



Ordering Information

Complete Belt Trip Switches

Description	Part No
Double end belt trip switch with fail safe contacts	CHW53197
Single end belt trip switch with fail safe contacts	CHW53198

Accessories.

Description	Part No
Pigtail, M10 x 125, 1.5 turns 80mm thread	PT125CW5000
Crosby clamp for steel rope	1001AG0055
33m 2.5mm Steel rope covered to 6mm PVC	3 - 5/33
61m 2.5mm Steel rope covered to 6mm PVC	3 - 5/61
101m 2.5mm Steel rope covered to 6mm PVC	3 - 5/101
Turn buckle eye/ eye M10 x 125mm	1011CA0060
Thimble - 2.5mm wire rope	THIMB3
110/220V a.c. Flashing amber LED light c/w cover (50mA)	CHW53203A
110/220V a.c. Flashing red LED light c/w cover (50mA)	CHW53203B
Contact block 1N.O./1N.C.	10250T1



Eaton Conveyor Standard Belt Trip Switch - Installation Manual

Dimensions (mm)

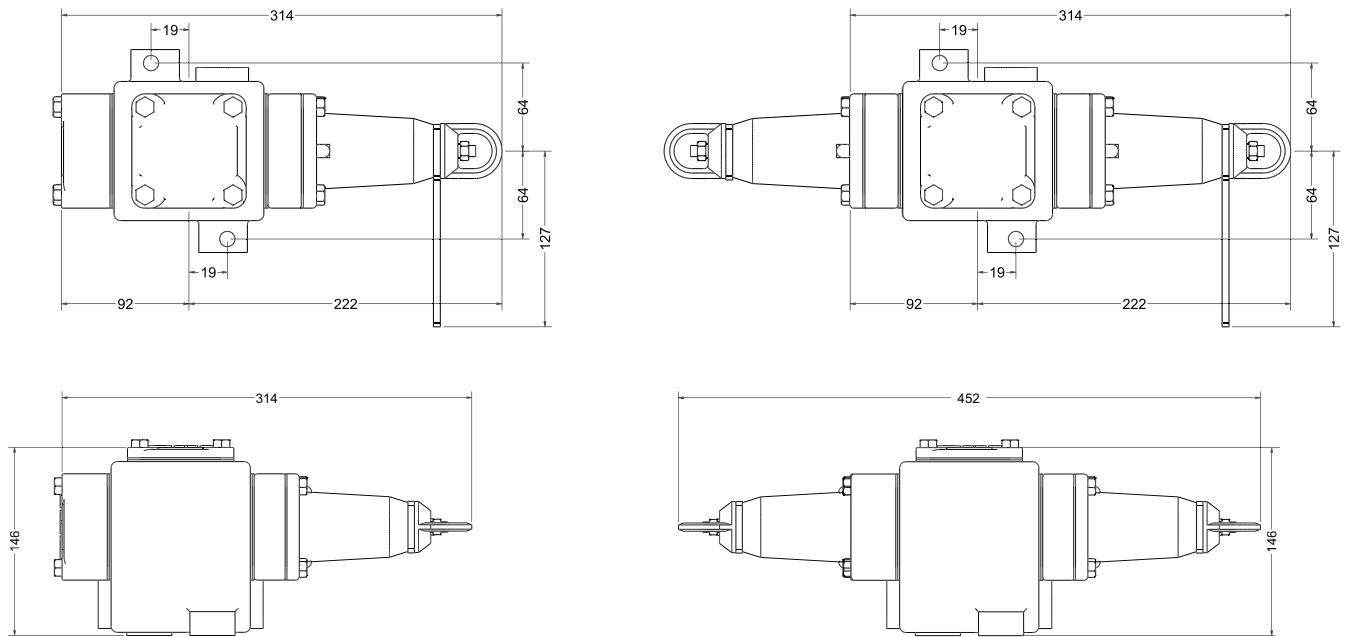
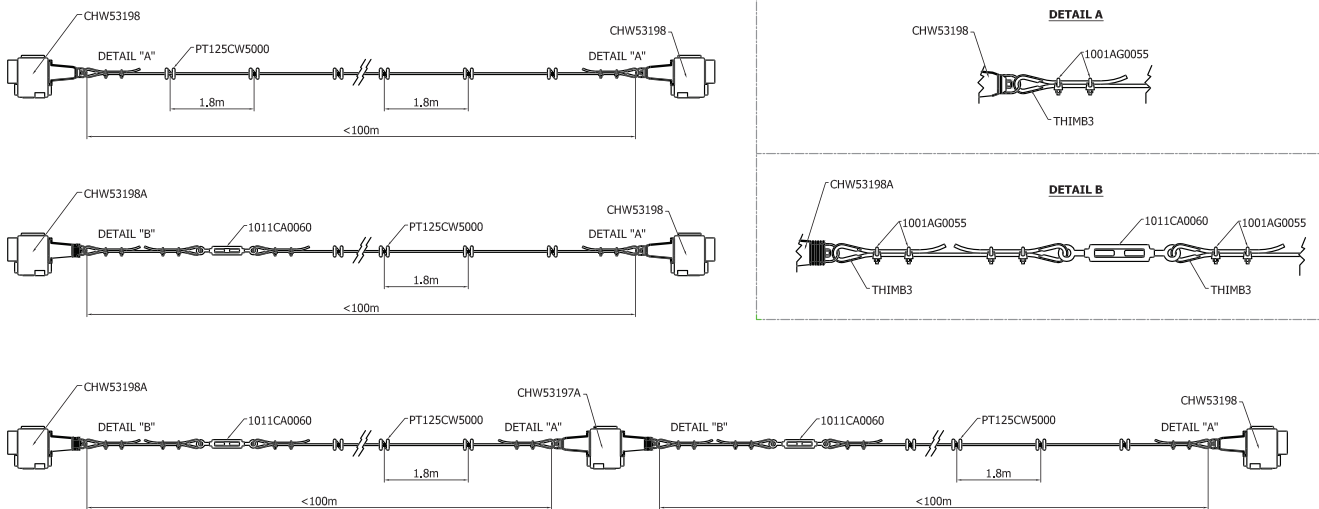


Diagram to detail where the thimbles, Crosby clamps, turnbuckle, pigtails and wire rope are to be used with suggested distances.



HEAD OFFICE & FACTORY

Eaton Electric (South Africa) (Pty) Ltd
Cnr. Esandar & Osborn Road, Wadeville 1428
Private Bag X019,
Wadeville 1422, Gauteng, South Africa
Tel: +27 11 824 7400
Fax: +27 86 681 9302
www.eaton.co.za

CAPE TOWN BRANCH

Unit 1, 8 Thor Circle, Viking Place, Thornton
Cape Town, 7465, Western Cape, South Africa
Tel: +27 21 531 5852
Fax: +27 21 531 9953

DURBAN BRANCH

99 Intersite Avenue, Umgeni Business Park
Durban, 4051, KwaZulu- Natal, South Africa
Tel: +27 31 263 0502
Fax: +27 31 263 0756

EMALAHLENI BRANCH

108 Langenhoven Street,
Emalahleni, 1034, Mpumalanga, South Africa
Tel: +27 13 692 3066
Fax: +27 13 697 3246

GEORGE SALES OFFICE

PO Box 1947, George 6529
Western Cape, South Africa
Tel: +27 44 870 0920
Fax: +27 86 543 3070

PORT ELIZABETH SALES OFFICE

66 Pickering Street, Newton Park,
Port Elizabeth, 6055, Eastern Cape, South Africa
Tel: +27 41 364 1049
Fax: +27 41 364 2180

RUSTENBURG SALES OFFICE

Office 9A, 95 Ridder Street, Rustenburg, 0299
North West Province, South Africa
Tel: +27 14 596 7600
Fax: +27 14 596 6197

VAN DER BIJLPARK SALES OFFICE

Mittal Site, Vanderbijlpark, 1911
Gauteng, South Africa
Tel: +27 16 889 2476/7
Fax: +27 16 889 2266



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