



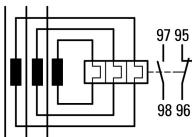
## Current transformer-operated overload relay, 110-160A, 1N/O+1N/C



Powering Business Worldwide™

Part no. **ZW7-160**  
 Catalog No. **007364**  
 Eaton Catalog No. **XTOT160C3S**  
 EL-Nummer **4131709**  
 (Norway)

### Delivery program

Product range			ZW7 current transformer-operated overload relays
Description			Test/off button Reset pushbutton manual/auto Trip-free release Protection with heavy starting duty
Mounting type			Separate mounting
<b>Setting range</b>			
Overload releases	$I_r$	A	110 - 160
Contact sequence			
<b>Auxiliary contacts</b>			
N/O = Normally open			1 N/O
N/C = Normally closed			1 N/C
<b>Notes</b>			
The main current parameters are defined by the main current wiring which is used.			

### Technical data

<b>General</b>			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +50
Enclosed		°C	- 25 - 40
Temperature compensation			Continuous
Mounting position			As required
Weight		kg	0.8
Mechanical shock resistance		g	10 Sinusoidal Shock duration 10 ms
Degree of Protection			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof

### Main conducting paths

Rated impulse withstand voltage	$U_{imp}$	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	$U_i$	V	1000
Rated operational voltage	$U_e$	V AC	1000
Safe isolation to EN 61140			
Between auxiliary contacts and main contacts		V AC	440
Between main circuits		V AC	440
Short-circuit protection Maximum fuse			With overload relay in conjunction with a transformer as required for the contactor
Current heat loss (3 conductors)			
Lower value of the setting range		W	3
Maximum setting		W	10
Push-through opening		mm	27

## Auxiliary and control circuits

Rated impulse withstand voltage	$U_{imp}$	V	4000
Overvoltage category/pollution degree			III/3
Terminal capacities		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 4)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	2 x (18 - 14)
Terminal screw			M3.5
Tightening torque		Nm	0.8 - 1.2
Stripping length		mm	8
Tools			
Poqidriv screwdriver		Size	2
Standard screwdriver		mm	1 x 6
Rated insulation voltage	$U_i$	V AC	500
Rated operational voltage	$U_e$	V AC	500
Safe isolation to EN 61140			
between the auxiliary contacts		V AC	240
Conventional thermal current	$I_{th}$	A	6
Rated operational current	$I_e$	A	
AC-15			
Make contact			
120 V	$I_e$	A	1.5
220 V 230 V 240 V	$I_e$	A	1.5
380 V 400 V 415 V	$I_e$	A	0.5
500 V	$I_e$	A	0.5
Break contact			
120 V	$I_e$	A	1.5
220 V 230 V 240 V	$I_e$	A	1.5
380 V 400 V 415 V	$I_e$	A	0.9
500 V	$I_e$	A	0.8
DC-13 L/R - 15 ms			
			Making and breaking conditions to DC-13, time constant as stated.
24 V	$I_e$	A	0.9
60 V	$I_e$	A	0.75
110 V	$I_e$	A	0.4
220 V	$I_e$	A	0.2
Short-circuit rating without welding			
max. fuse		A gG/gL	6

## Rating data for approved types

Auxiliary contacts			
Pilot Duty			
AC operated			B300 at opposite polarity B600 at same polarity
DC operated			R300

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	160
Heat dissipation per pole, current-dependent	$P_{vid}$	W	2.1
Equipment heat dissipation, current-dependent	$P_{vid}$	W	6.3
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°C	-25

Operating ambient temperature max.	°C	50
IEC/EN 61439 design verification		
10.2 Strength of materials and parts		
10.2.2 Corrosion resistance		Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures		Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat		Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects		Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation		Meets the product standard's requirements.
10.2.5 Lifting		Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact		Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions		Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES		Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances		Meets the product standard's requirements.
10.5 Protection against electric shock		Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components		Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections		Is the panel builder's responsibility.
10.8 Connections for external conductors		Is the panel builder's responsibility.
10.9 Insulation properties		
10.9.2 Power-frequency electric strength		Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage		Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material		Is the panel builder's responsibility.
10.10 Temperature rise		The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

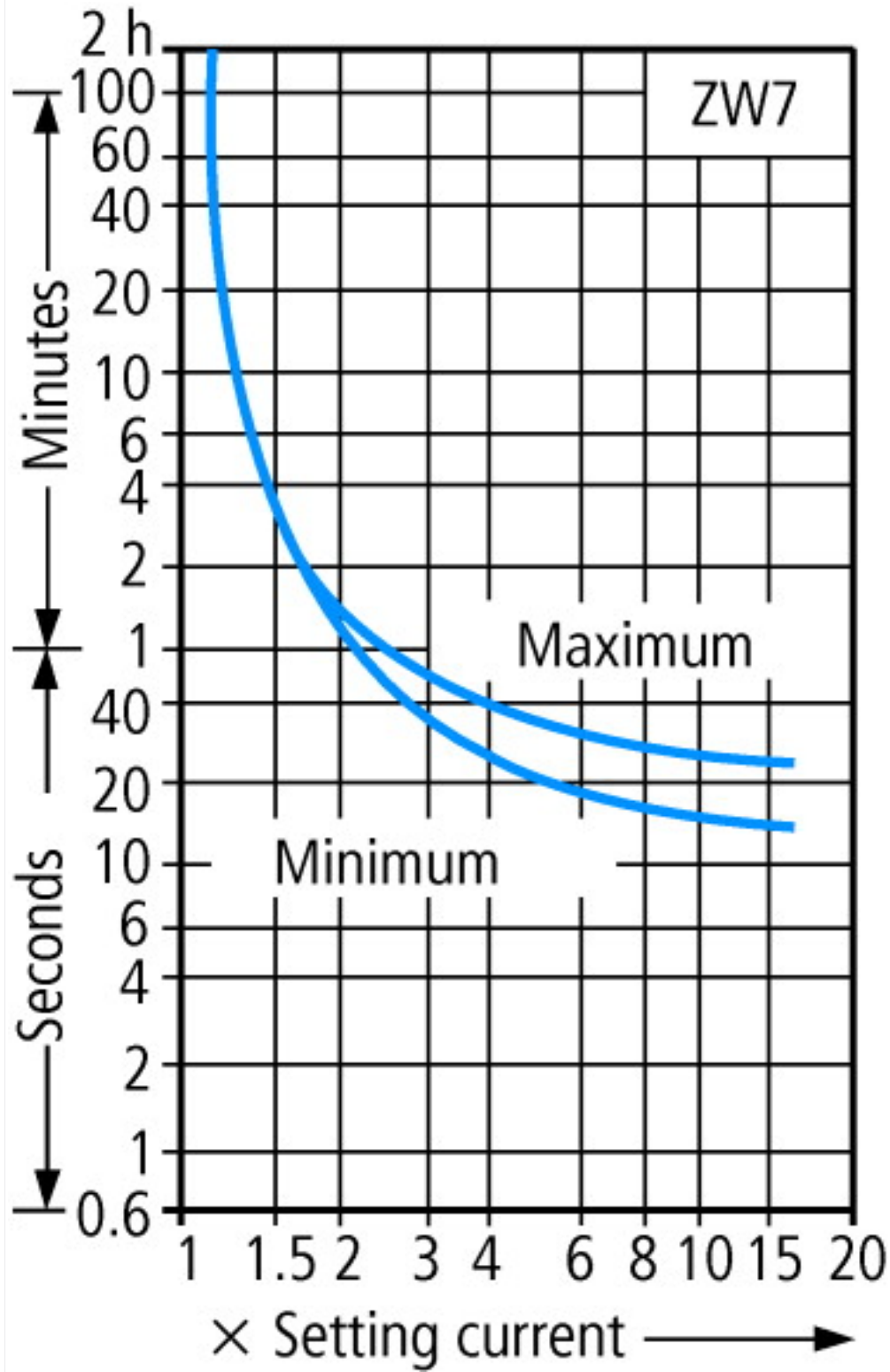
## Technical data ETIM 6.0

Low-voltage industrial components (EG000017) / Thermal overload relay (EC000106)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss8.1-27-37-15-01 [AKF075011])		
Adjustable current range	A	110 - 160
Max. rated operation voltage U <sub>e</sub>	V	690
Mounting method		Separate positioning
Type of electrical connection of main circuit		Screw connection
Number of auxiliary contacts as normally closed contact		1
Number of auxiliary contacts as normally open contact		1
Number of auxiliary contacts as change-over contact		0
Release class		-

## Approvals

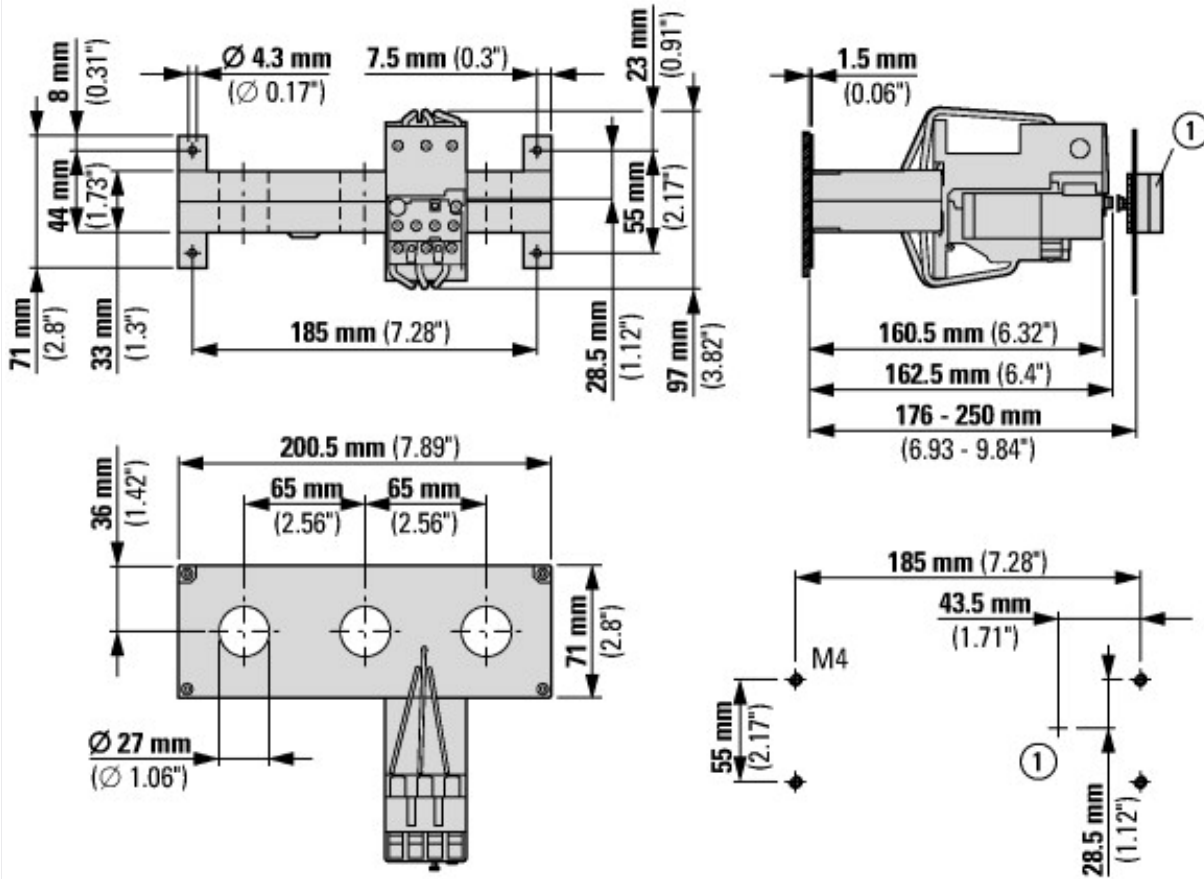
Product Standards		UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; CE marking
UL File No.		E29184
UL Category Control No.		NKCR
CSA File No.		12528
CSA Class No.		3211-03
North America Certification		UL listed, CSA certified
Specially designed for North America		No
Suitable for		Branch circuits
Max. Voltage Rating		600 V AC
Degree of Protection		IEC: IP00, UL/CSA Type: -

## Characteristics

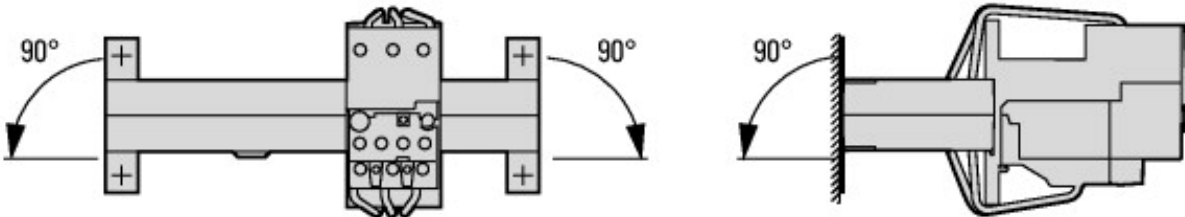


These tripping characteristics are mean values of the spread at 20 °C ambient air temperature in a cold state. Tripping time depends on response current. When the devices are at operational temperature the tripping time of the overload relay reduces to approx. 25 % of the read off value.

## Dimensions



① Reset/on



Permissible mounting positions

## Additional product information (links)

### IL03407124Z, Tripping characteristics

IL03407124Z, Tripping characteristics [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407124Z2017\\_08.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407124Z2017_08.pdf)

### IL04210001Z, Overload relay, Current transformer-operated overload relay

IL04210001Z, Overload relay, Current transformer-operated overload relay [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL04210001Z2015\\_03.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04210001Z2015_03.pdf)