WR Series - Bi-Metallic

Thermal Overload Relays

An extended operational service life is one of the main features you can find in WR overload relays . WESTINGHOUSE's WR Thermal Overload Relays are designed for use with, and as perfect complement to, WESTINGHOUSE contactors . Effectively, WR overload relays can be mounted directly under WESTINGHOUSE contactors, assuring electrical and mechanical operation as an open across-the-line starter . Accessories are also available for separate mounting .

UL File No . E189202

Standard Features:

- 2 and 3 pole versions available
- Direct mounting to WESTINGHOUSE contactors with no accessory (Accessories also available for separate mounting)
- Phase loss & current unbalance sensitivity protection
- Class 10 Trip characteristics
- Selectable RESET button (auto or manual)
- Isolated 1NO & 1NC auxiliary contacts

WR Series Catalog Number Sequence

WR	27-1D	3	-	U004

Overload Relay Series
WR: Thermal Overload Relay

Power Pole
3: 3NO Power Poles
2: 2NO Power Poles

Frame, Size and Terminal Type
17-1D: to use with WCC07…016
17-2D: to use with WCC025
27-1D: to use with WCM9…25
27-2D: to use with WBC9...38
27-2D: to use with WBC9...38
67-1D: to use with WCM32…40
117-1D: to use with WCM95…105
117-2D: to use with WCM112…150
317-1D: to use with WCM112…300
407-1D: to use with WCM400…800

Overload Setting Current

WR17	WR117
D004: 0,28…0,40A	U080: 63…80A
U032: 11…32A	U112: 90…112A
WR27	**WR317**
DOO4: 0,28…0,40A	U150: 100…150A
U032: 11…32A	U420: 275…420A
WR67	**WR407**
U040: 25…40A	U600: 400…600A
U080: 63…80A	U840: 560…840A

For more details refer to selection table

Chart intended for reference only and not to create part numbers.

Multifunction Reset / Test Button

The thermal overload relay has a multifunction RESET / TEST button that can be set in four different positions:
A - Automatic RESET only;
AUTO - Automatic RESET / TEST;
HAND - Manual RESET / TEST;
H - Manual RESET only.
In HAND and **AUTO** positions, when RESET button is pressed, both NO (97-98) and NC (95-96) contacts change states.

Operation description:

In H (manual RESET only) or A (automatic RESET only) position, the test function is blocked . However in the positions HAND (manual RESET / TEST) or AUTO (automatic RESET / TEST) it is possible to simulate the test and the trip functions by pressing the RESET button .
When set in the H or HAND position the RESET button must be pressed manually to reset the overload relay after a tripping event . On the other hand, when set in A or AUTO position, the overload relay will reset automatically after a tripping event .
The H, HAND, AUTO and A function setting is carried out by rotating without pressing the red button and placing it on the desired position of the RESET button .
When changing from HAND to AUTO, the RESET button must be slightly pressed while the red button is rotated .

Functions	H	HAND	AUTO	A
Relay reset	Manual1)	Manual1)	Automatic	Automatic
Auxiliary contact trip test 95-96 (NC)	Function is disabled	Test is allowed	Test is allowed	Function is disabled
Auxiliary contact trip test 97-98 (NO)	Function is disabled	Test is allowed	Test is allowed	Function is disabled

Note: 1) A recovery time of a few minutes is necessary before resetting the thermal overload relay.

Recovery Time

The WR thermal overload relays have thermal memory.
After tripping due to an overload, the relay requires a certain period of time for the bimetal strips to cool down .This period of time is so-called recovery time. The relay can only be reset once it has cooled down . The recovery time depends on the characteristic tripping curves and the level of the tripping current . After tripping due to overload, the recovery time allows the load to cool down .

Operation in the Output Side of Frequency Inverters

The WR27-2D thermal overload relays are designed for operation on 50/60 Hz up to 400 Hz and the tripping values are related to the heating by currents within this frequency range . Depending on the design of the frequency inverter, the switching frequency can reach several kHz and generate harmonic currents at the output that result in additional temperature rise in the bimetal strips . In such applications, the temperature rise not only depends on the rms value of the current, but on the induction effects of the higher frequency currents in the metal parts of the device (skin effect caused by eddy currents).
Due to these effects, the current settings on the overload relay should be higher than the motor rated current .

Dial FLA Setting

The trip-current is set via an infinitely adjustable dial designed with the motor's full load current (FLA) in mind .

Temperature Compensation

Because WR overload relays include a forth bimetallic strip in addition to the three that are directly heated by the motor current, ambient temperature variations in the range of -4°F to +140°F are no obstacle for accurate protection of your motors even in the toughest conditions .

Phase Failure Sensitivity

WESTINGHOUSE overload relays include phase failure sensitivity protection as a standard This feature ensures fast tripping in case of phase loss, protecting your motor and avoiding expensive repairs/corrective maintenance .

Overloads

WR Series - Bi-Metallic

For use with WCC and WCM Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +140F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WCC07…WCC016 WCCA0 (Mini-contactor)	0.28	0.40	15	WR17-1D3-D004	W605663	
	0.40	0.63	15	WR17-1D3-C063	W605664	
	0.56	0.80	15	WR17-1D3-D008	W605665	
	0.80	1.20	15	WR17-1D3-D012	W605666	
	1.20	1.80	15	WR17-1D3-D018	W605667	
	1.80	2.80	15	WR17-1D3-D028	W605668	
	2.80	4.00	15	WR17-1D3-U004	W605669	
	4.00	6.30	25	WR17-1D3-D063	W605670	
	5.60	8.00	30	WR17-1D3-U008	W605671	
	7.00	10.0	40	WR17-1D3-U010	W605672	
	8.00	12.5	50	WR17-1D3-D125	W605673	
	10.0	15.0	60	WR17-1D3-U015	W605674	
	11.0	17.0	60	WR17-1D3-U017	W605675	
WCC025 (Mini-contactor)	15.0	23.0	90	WR17-2D3-U023	W605676	
	22.0	32.0	100	WR17-2D3-U032	W605677	
WCM9...WCM40 WCM9N...WCM32N	0.28	0.40	15	WR27-1D3-D004	W605678	
	0.40	0.63	15	WR27-1D3-C063	W605679	
	0.56	0.80	15	WR27-1D3-D008	W605680	
	0.80	1.20	15	WR27-1D3-D012	W605681	
	1.20	1.80	15	WR27-1D3-D018	W605682	
	1.80	2.80	15	WR27-1D3-D028	W605683	
	2.80	4.00	15	WR27-1D3-U004	W605684	
	4.00	6.30	25	WR27-1D3-D063	W605685	
	5.60	8.00	30	WR27-1D3-U008	W605686	
	7.00	10.0	40	WR27-1D3-U010	W605687	Z2
	8.00	12.5	50	WR27-1D3-D125	W605688	
	10.0	15.0	60	WR27-1D3-U015	W605689	
	11.0	17.0	60	WR27-1D3-U017	W605690	
	15.0	23.0	90	WR27-1D3-U023	W605691	
	22.0	32.0	90	WR27-1D3-U032	W605692	
WCM32...WCM40 WCM32N	25.0	40.0	90	WR67-1D3-U040	W605693	
	32.0	50.0	125	WR67-1D3-U050	W605694	
WCM50...WCM80 WCM50N	25.0	40.0	90	WR67-2D3-U040	W605695	
	32.0	50.0	125	WR67-2D3-U050	W605696	
	40.0	57.0	150	WR67-2D3-U057	W605697	
	50.0	63.0	150	WR67-2D3-U063	W605698	
	57.0	70.0	175	WR67-2D3-U070	W605699	
	63.0	80.0	175	WR67-2D3-U080	W605700	
WCM95...WCM105 WCM95N	63.0	80.0	200	WR117-1D3-U080	W605701	
	75.0	97.0	225	WR117-1D3-U097	W605702	
	90.0	112	250	WR117-1D3-U112	W605703	
WCM112...WCM150 WCM150N	75.0	97	225	WR117-2D3-U097	W605704	
	90.0	112	250	WR117-2D3-U112	W605705	
WCM112…WCM300 WCM300N	100	150	300	WR317-1D3-U150	W605706	
	140	215	350	WR317-1D3-U215	W605707	
	200	310	500	WR317-1D3-U310	W605708	
WCM400...WCM800	275	420	700	WR317-1D3-U420	W605709	
	400	600	1000	WR407-1D3-U600	W605710	
	560	840	1250	WR407-1D3-U840	W605711	

Note: WR117-2D, WR317-1D and WR407-1D are for separate mounting -
Connector links for contactors WCM112…WCM300 are available as an accessory.

For use with WBC Contactors

Three-pole Thermal Overload Relay Class 10

- Adjustable Trip Current
- Phase Loss Sensitivity
- Trip Class 10
- Built-In Auxiliary Contacts: 1NO + 1NC
- Ambient Temperature Compensation: -4°F to +140°F
- Multi-Function Button: Hand/Auto/Reset

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WBC9 - WBC38	0.28	0.40	15	WR27-2D3-D004	W605712	Z2
	0.40	0.63	15	WR27-2D3-C063	W605713	
	0.56	0.80	15	WR27-2D3-D008	W605714	
	0.80	1.20	15	WR27-2D3-D012	W605715	
	1.20	1.80	15	WR27-2D3-D018	W605716	
	1.80	2.80	15	WR27-2D3-D028	W605717	
	2.80	4.00	15	WR27-2D3-U004	W605718	
	4.00	6.30	25	WR27-2D3-D063	W605719	
	5.60	8.00	30	WR27-2D3-U008	W605720	
	7.00	10.0	40	WR27-2D3-U010	W605721	
	8.00	12.5	50	WR27-2D3-D125	W605722	
	10.0	15.0	60	WR27-2D3-U015	W605723	
	11.0	17.0	60	WR27-2D3-U017	W605724	
	15.0	23.0	90	WR27-2D3-U023	W605725	
	22.0	32.0	90	WR27-2D3-U032	W605726	
	32.0	40.0	90	WR27-2D3-U040	W605727	
WBC40-WBC80	25.0	40.0	90	WR67-5D3-U040	W605728	Z2
	32.0	50.0	125	WR67-5D3-U050	W605729	
	40.0	57.0	150	WR67-5D3-U057	W605730	
	50.0	63.0	150	WR67-5D3-U063	W605731	
	57.0	70.0	175	WR67-5D3-U070	W605732	
	63.0	80.0	200	WR67-5D3-U080	W605733	

Overloads

WR Series - Bi-Metallic

For use with WCC and WCM Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40°F to +140°F
- Hand/Auto/Reset button

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WCM9...WCM40	0.28	0.40	15	WR27-1D2-D004	W605734	Z2
	0.40	0.63	15	WR27-1D2-C063	W605735	
	0.56	0.80	15	WR27-1D2-D008	W605736	
	0.80	1.20	15	WR27-1D2-D012	W605737	
	1.20	1.80	15	WR27-1D2-D018	W605738	
	1.80	2.80	15	WR27-1D2-D028	W605739	
	2.80	4.00	15	WR27-1D2-U004	W605740	
	4.00	6.30	25	WR27-1D2-D063	W605741	
	5.60	8.00	30	WR27-1D2-U008	W605742	
	7.00	10.0	40	WR27-1D2-U010	W605743	
	8.00	12.5	50	WR27-1D2-D125	W605744	
	10.0	15.0	60	WR27-1D2-U015	W605745	
	11.0	17.0	60	WR27-1D2-U017	W605746	
	15.0	23.0	90	WR27-1D2-U023	W605747	
	22.0	32.0	90	WR27-1D2-U032	W605748	
WCM32...WCM40	25.0	40.0	90	WR67-1D2-U040	W605749	
	32.0	50.0	125	WR67-1D2-U050	W605750	
WCM50...WCM80	25.0	40.0	90	WR67-2D2-U040	W605751	
	32.0	50.0	125	WR67-2D2-U050	W605752	
	40.0	57.0	150	WR67-2D2-U057	W605753	
	50.0	63.0	150	WR67-2D2-U063	W605754	
	57.0	70.0	175	WR67-2D2-U070	W605755	
	63.0	80.0	175	WR67-2D2-U080	W605756	

Note: 1 Availability upon request.

For use with WBC Contactors

Two-pole Thermal Overload Relays Class 10 (used for single phase applications)

- Adjustable tripping current
- Phase-loss sensitivity
- Tripping class 10
- Auxiliary contacts 1NO + 1NC
- Temperature compensation from -40F to +1400F
- Hand/Auto/Reset button

2 POLE THERMAL OVERLOAD RELAYS - CLASS 10

Matching Contactor	Setting Range [A]		Max. Fuse [A]	Catalog Number	Ref.No.	Multiplier
	Min.	Max.				
WBC9 - WBC38	0.28	0.40	15	WR27-2D2-D004	W605757	Z2
	0.40	0.63	15	WR27-2D2-C063	W605758	
	0.56	0.80	15	WR27-2D2-D008	W605759	
	0.80	1.20	15	WR27-2D2-D012	W605760	
	1.20	1.80	15	WR27-2D2-D018	W605761	
	1.80	2.80	15	WR27-2D2-D028	W605762	
	2.80	4	15	WR27-2D2-U004	W605763	
	4	6.30	25	WR27-2D2-D063	W605764	
	5.60	8.00	30	WR27-2D2-U008	W605765	
	7.00	10.0	40	WR27-2D2-U010	W605766	
	8.00	12.5	50	WR27-2D2-D125	W605767	
	10.0	15.0	60	WR27-2D2-U015	W605768	
	11.0	17.0	60	WR27-2D2-U017	W605769	
	15.0	23.0	90	WR27-2D2-U023	W605770	
	22.0	32.0	90	WR27-2D2-U032	W605771	
	32.0	40.0	90	WR27-2D2-U040	W605772	
WBC40-WBC80	25.0	40.0	90	WR67-1D2-U040	W605773	Z2
	32.0	50.0	125	WR67-1D2-U050	W605774	
	25.0	40.0	90	WR67-2D2-U040	W605775	
	32.0	50.0	125	WR67-2D2-U050	W605776	
	40.0	57.0	150	WR67-2D2-U057	W605777	
	50.0	63.0	150	WR67-2D2-U063	W605778	
	57.0	70.0	175	WR67-2D2-U070	W605779	
	63.0	80.0	200	WR67-2D2-U080	W605780	

Overloads

WR Series - Bi-Metallic

Separate Mounting Bracket

Description	Mounting on Overload Relays (2 or 3 pole)	Catalog Number	Ref.No.	Multiplier
Enables overload relay to be directly mounted to a back panel via screws or DIN rail	WR27-1D	WBF27D	W605781	Z2
	WR27-2D	WBF27-2D	W605782	
	WR67-1D and WR67-2D	WBF67.1D	W605783	
	WR117-1D	WBF117D	W605784	

External Reset Button

Description	Mounting in Cover of Control Panel	Catalog Number	Ref.No.	Multiplier
Enables overload relay to be Reset from control panel, without opening the cover	22 MM Flush Reset PB Blue 'R'	WCS-WRSBF4R	W605785	Z5
	30 MM Flush Reset PB Black 'Reset'	WCS30-WRSBW	W605786	

Connector links (3 per package)

Description	Contactor	Overload Relay	Catalog Number	Ref.No.	Multiplier
Link connectors for easier WCM contactors and WR overload relays assembly	WCM112	WR117-2D3	WGA117D	W605787	Z2
	WCM150	WR317-1D3	WGA317-1D	W605788	
	WCM180	WR317-1D3	WGA317-2D	W605789	
	WCM250 / WCM300	WR317-1D3	WGA317-3D	W605790	
	WCM400	WR317-1D3	WGA317-10D	W605791	

Lugs for WR Series (Overload Relay) (3 units per package)

Description / Wire Range	Mounting on Overloads	Catalog Number	Ref.No.	Multiplier
(2) 600 MCM...2AWG	WR407-2D (400A-840A)	LW1-2S600-B	W605792	Z2
600 MCM…4AWG	WR317-1D (200A-420A)	LW2-S600	W605793	
300 MCM...6AWG	WR317-1D (100A-215A)	LW3-S300	W605794	

General Data and Main Contacts

Catalog Number			WR17	WR27	WR67	WR117	WR317	WR407
Standards		Units	IEC 60947 / UL 508					
Setting current		(A)	0.28...17	0.28...32	25...80	75...112	100...420	400...840
Tripping class			10					
Temperature compensation			Continuous					
Rated insulation voltage Ui (pollution degree 3)	IEC 60947	(V)	690				1,000	
	UL/CSA	(V)	600					
Rated impulse withstand voltage Uimp		(kV)	6				8	
Rated operational frequency		(Hz)	0...400					
Degree of protection Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536)			IP 20 Finger and back-of-hand proof					
Ambient temperature Operating temperature Storage temperature			-25 °C to +60 °C -40 °C to +70 °C					
Climating proof IEC 60 068-2-3 IEC 60 068-2-30			Damp heat. constant Damp heat. constant					
Current heat loss Lower value of setting range Higher value of setting range		(W) (W)	0.9 1.4	0.9 1.7	1.5 4.7	2.3 4.7	1 1.9	

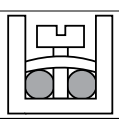
Auxiliary Contacts

Models			WR17	WR27	WR67	WR117	WR317	WR407
Standards			IEC 60 947-4-1 and UL 508					
Rated insulation voltage Ui (pollution degree 3)	IEC	(V)	690					
	UL, CSA	(V)	600					
Rated operational voltage Ue	IEC	(V)	690					
	UL, CSA	(V)	600					
Rated thermal current Ith (≤55 °C)		(A)	6					
Rated operational current Ie								
AC-14 / AC-15 (IEC 60947-5-1)	24 V	(A)	4					
	60 V	(A)	3.5					
	125 V	(A)	3					
	230 V	(A)	2					
	400 V	(A)	1.5					
	500 V	(A)	0.5					
	690 V	(A)	0.3					
UL, CSA			C600					
DC-13 / DC-14 (IEC 60947-5-1)	24 V	(A)	1					
	60 V	(A)	0.5					
	110 V	(A)	0.25					
	220 V	(A)	0.1					
UL, CSA			R300					
Short-circuit protection with fuse (gL/gG)		(A)	6					
Minimum voltage / admissible current (IEC 60947-5-4)			17 V / 5 mA					

Terminal Capacity and Tightening Torque - Main Contacts

Reference			WR17	WR27	WR67	WR117	WR317		WR407
Current setting	(A)		0.28...17	0.28...32	25...80	75...112	100...215	200...420	400...840
Cable size (75 °C / Cu cable)									
Flexible cable	1 cable	(mm^2)	1,5...10		6,0...35	25...35	35...120	95...150	-
	2 cables	(mm^2)			-	-			
Cable with terminal or rigid cable	1 cable	(mm^2)	1,5...6,0		6,0...35	25...35	35...120	95...150	-
	2 cables	(mm^2)			-	-			
Busbar	(mm^2)		-				Max 2x (25x5)		Max 2x (60x10)
Tightening torque	(N.m)		2,3		4,0	6,0	16,0	26,0	26,0
UL cable size (75 °C - Cu cable)	AWG		16...8		10...3	6...1/0	3–300 kc-mil	3/0 – 600 kcmil	2x 600 kcmil 2x (1/4"x2")
Tightening torque (UL)	(lb.in)		20		35	53	141	230	230

Terminal Capacity and Tightening Torque - Auxiliary Contacts

Models			WR17	WR27	WR67	WR117	WR317	WR407
Type of screws			M3.5 x 10 Philips					
Cable size (75 °C / Cu cable)								
Cable with or without terminal	(mm^2)		2 x 1...2.5					
AWG-wire			16...12					
Tightening torque	(N.m / lb.in)		1.5 / 13					

Overloads

WR Series - Bi-Metallic

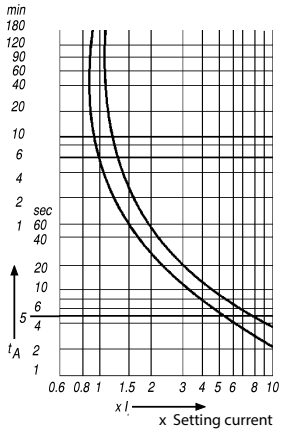
Technical Data

Main Data

Models			WR27
Standards			IEC 60947-1 and UL 508
Rated insulation voltage Ui (pollution degree 3)	IEC 60947-4-1	(V)	690
	UL, CSA	(V)	600
Rated impulse withstand voltage Uimp (IEC 60947-1)		(kV)	6
Rated operational frequency		(Hz)	25...400
Use with direct current			Yes
Maximum operation per hour		(ops./h)	15
Protection degree (IEC 60529)	Main contacts		IP10
	Auxiliary contacts		IP20
	Frontal		IP20
Mounting			Direct on the contactor
Resistance to impact (IEC 60068-2-27 - 1/2 sinusoid)		(g/ms)	10/11
Ambient temperature	Transport and storage		-50 °C...+80 °C
	Operating		-20 °C...+70 °C
	Temperature compensation		-20 °C...+60 °C
Altitude		(m)	2000

Main Contacts

Models			WR27
Rated operational voltage Ue	IEC 60947-4-1	(V)	690
	UL, CSA	(V)	600
Setting current / max fuse (gL/gG)1)		(A)	0.28...0.4 / 2
			0.43...0.63 /2
			0.56...0.8 / 2
			0.8...1.2 / 4
			1.2...1.8 / 6
			1.8...2.8 / 6
			2.8...4 / 10
			4...6.3 / 16
			5.6... 8 / 20
			7...10 / 25
			8...12.5 / 25
			10...15 / 35
			11...17 / 40
			15...23 / 50
			22...32 / 63
			32...40 / 90
Average power dissipation per pole		(W)	≤3



WR Tripping Characteristics

These tripping characteristics show the tripping of WR in relation to the current. They show the mean values of the tolerance ranges at on ambient temperature of 68°F (20°C), starting from cold stats . The tripping time of the overload releases at operational temperature is reduced to approximately 25% of the values shown. Under normal operational conditions, all three phases of the WRs should be loaded .

Altitude & Temperature Derating

The derating of a WR overload relay has two possible factors:

1) Ambient temperature

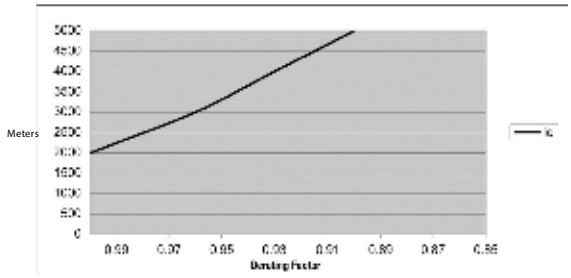
- Temperature compensation considers a factor according to which the rated current must be reduced when ambient temperature is higher than 60°C (140°F) .

2) Altitude

- Altitude compensation involves both, rated current and voltage .
- Current compensation considers a factor according to the rated current must be reduced.
- For voltage, altitude limits the higher operating voltage the overload relay can be used .

Temperature Compensation		Current Correction ffactor
149°F	(65°C)	0.94
158°F	(70°C)	0.87
167°F	(75°C)	0.81
176°F	(80°C)	0.73

Altitude	Voltage Correction [Ue]
Up to 2,000m (6,667ft)	690
Up to 3,000m (10,000ft)	550
Up to 4,000m (13,333ft)	480
Up to 5,000m (16,667ft)	420



The derating of the permissible operating current for installation altitudes above 2,000m (6,667 ft) and ambient temperatures over 60°C (140°F) is calculated according to:

Total derating = Derating altitude x Derating ambient temperature

Example;
Altitude: 3,000 m (10,000 ft)
K1 = 0 .96
Ambient temperature: 70°C (158°F)
K2 = 0 .87

Total current derating = 0 .96 x 0 .87 = 0 .84 x Ie
In this case, the maximum rated voltage we can connect to our WR overload relay is 550V .

In order to select the proper overload relay, you have to choose a device with a current range that accommodates:
Overload Setting Point = FLA motor / (K1 x K2)

As in the example above, K1 x K2 = 0.84
For a motor with FLA = 20Amps

Overload Setting Point = 20 / 0.84 = 23 .8Amps

Overloads

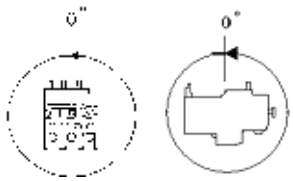
WR Series - Bi-Metallic

Operating Positions[1]

WR17D, WR27D, WR67D, WR117D, WR317D, WR407D

Mounting without contactor

The overload relays can be mounted at any position .



WR17D with WCC Series

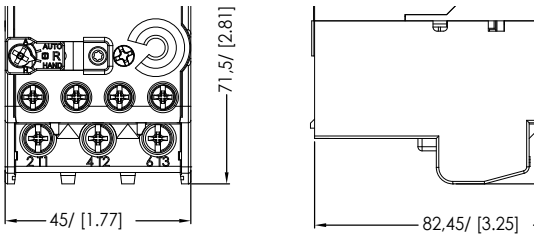
As showed at the left figure below, the inclination can not exceed ± 30º degrees for a perfectly functioning of the contactor . Laterally, as showed at the right figure below, the mounting position is equivalent to 0º degrees - not requiring a correction factor on the dial of the relay . The assembly can work with mounting variations of 0º to 180º

WR27D, WR67D, WR117D, WR317D, WR407

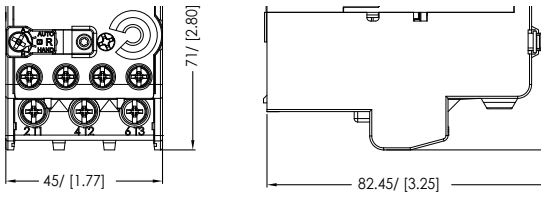
The mounting position showed at the left figure below is equivalent to 0º degrees - not requiring a correction factor on the dial of the relay . The assembly can work with mounting variations of 0º to 135º for each side, however the mounting with the relay above the contactor, position between 135º and 225º, is required a correction factor of +10% on the dial of the relay . Laterally, as showed at the right figure below, the inclination can not exceed ± 30º for a perfect functioning of the contactor. D with WCM/WCM Series

Note: 1)Please consult WESTINGHOUSE for different mounting positions.

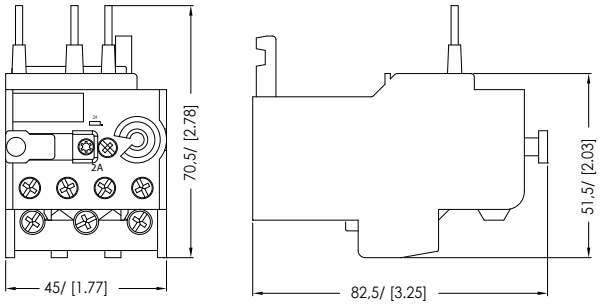
WR17-1D



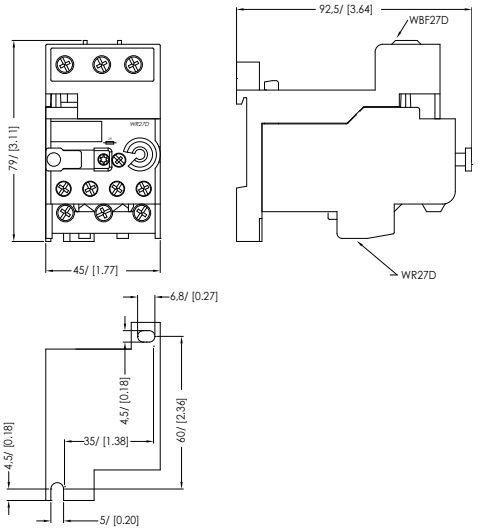
WR17-2D



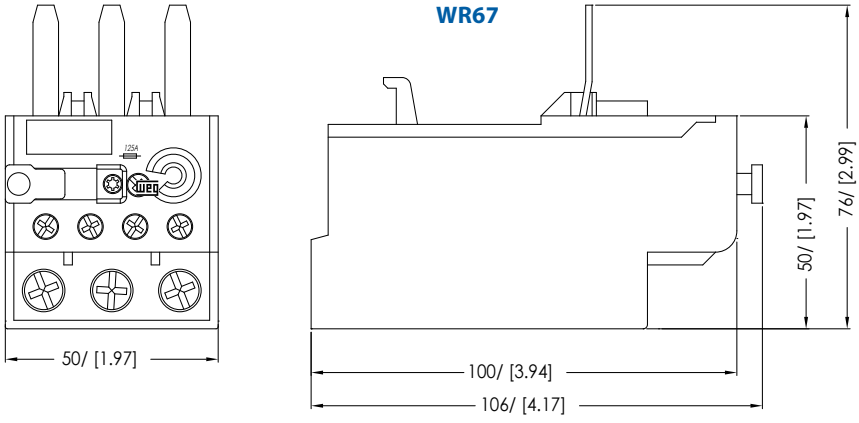
WR27



WR27 + WBF27



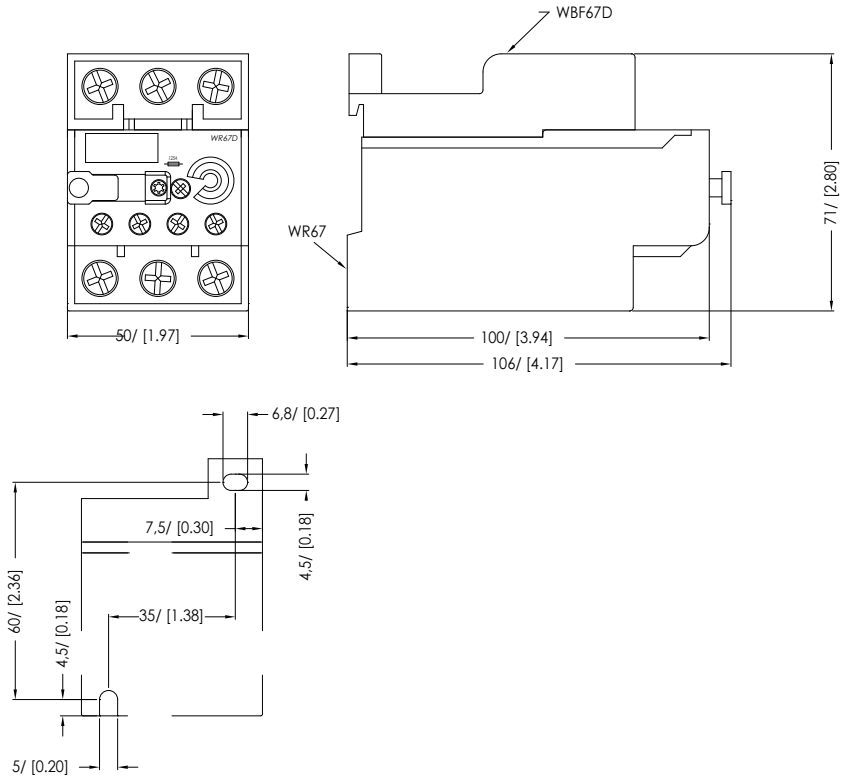
WR67



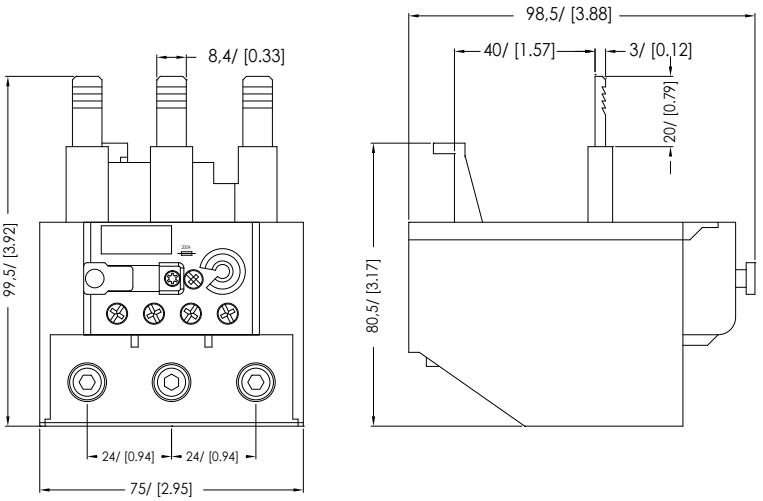
Overloads

WR Series - Bi-Metallic

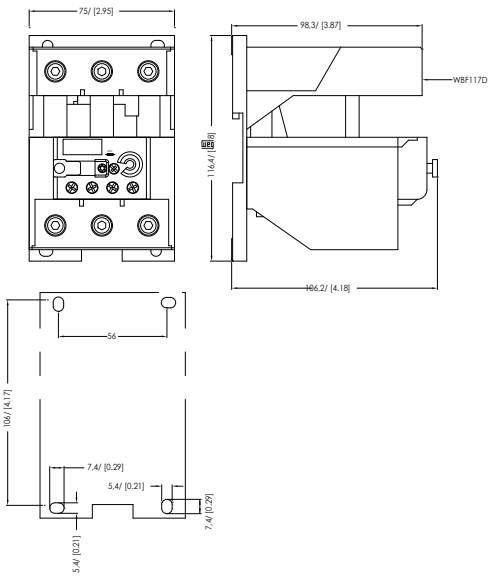
WR67 + WBF67



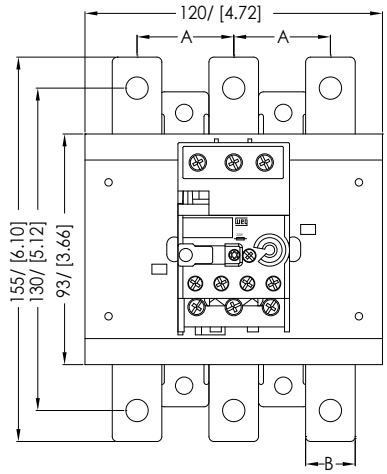
WR117-1D

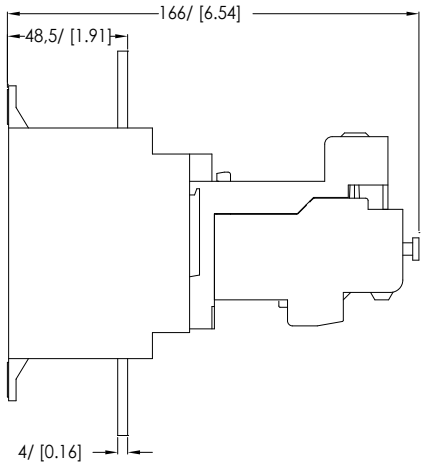


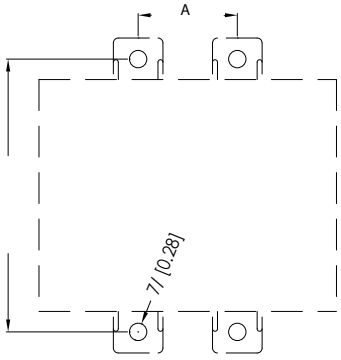
WR117-2D



WR317







Current ranges	A	B
100...150A	39(1.5)	20(0.8)
140...215A		
200...310A	45(1.8)	25(1.0)
275...420A		

WR407