## DATASHEET - NZM1-XU60DC

## Undervoltage release, 60 V DC

NZM1-XU60DC

259454

Part no.



TypeAccessory Undervoltage releaseSpecial featuresSpecial features<	General specifications	
EA4 A 1920F39541   Product height A 1920F39541   Product height B an intere   Product height B an intere   Product height B an intere   Compliance B an intere   Product Tradumente B an intere   Pr		Eaton Moeller series NZM release
Podect udig/Upph   F allinetice     Podect udig/   6 milletice     Podect Udig/	Part no.	NZM1-XU60DC
Product vig/th     Construction     Construction       Product vig/th     Construction     Construction       Derivative officience     Construction     Construction       Product vig/the non-state of non	EAN	4015082594541
Pradectwidth Image: Section of the s	Product Length/Depth	37 millimetre
Product weight Image: Second	Product height	66 millimetre
Compliance IC IC   Certification IC IC   Certification IC IC   Control Support IC IC   Protect Survive IC IC   Survive IC IC <t< td=""><td>Product width</td><td>32 millimetre</td></t<>	Product width	32 millimetre
Image: Section in the section is a section in the section in the section is a section in the section in th	Product weight	0.044 kilogram
Protect Indexame   ICE SMAY <sup>1</sup> SMA (Cleas Prof. STAP 10) SMA (Cleas Prof. STA	Compliances	UL/CSA
Product Sype   Accessories     Product Sub Type   Release     Interpret or option   Release     Type   Release     Special features   Non-delayed disconnection of MZM circuit-breaker or N switch-disconnector when the control vortage release     Special features   Non-delayed disconnection of MZM circuit-breaker or N switch-disconnector when the control vortage release     Frame   Non-delayed disconnection of MZM circuit-breaker or N switch-disconnector when the undervortage release cannot be installed a sinutraneously witch-orditage release cannot be installed a switched off. Dedavertage release cannot be installed as witched off. Dedavertage release cannot be installed aswitched off. Dedavertage release cannot be installed as	Certifications	IEC60947 CSA (File No. 22086) UL listed UL489 CSA-C22.2 No. 5-09 CSA (Class No. 1437-01) CSA certified UL (File No. E140305)
Product Support   Pelase     Type   Accessory Undervoltage release     Special features   Non-delayed disconnection of NLM circuit-breaker or N switch-disconnection NLM circuit-breaker or NLM circuit-breaker or N Switch-distreaker or N Switch-disconection NLM circuit-breaker or	Product Tradename	NZM
Interpretation     Interpr	Product Type	Accessories
Type     Accessory Undervolage release       Special features     Non-delayed disconnector of NZM circuic-bracker of a worth-disconnector of NZM circuic-bracker of NZM circuit-bracker	Product Sub Type	Release
Special features     Non-delayed disconnection of NZM circuit-breaker or N switch-disconnector when the control stage sinks below 35 – 7%; US, For use with amergency-stage diverses in connector with amergency-stage diverses in connector with the circuit breaker's primary contact is prive to devices in connector with NLM_entry Untage set Special features       Frame     NZM1       Suitable for     Difficient connector with NLM_entry-make auxiliary contact or NZMXAL.       Usade with     NZM1       Sectorical Data - Electrical     Off-load switch       Voltage type     AC       Rated control supply voltage (sla) at AC; 50 Hz - min     OV       Rated control supply voltage (Us) at AC; 50 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV       Rated control supply voltage (Us) at AC; 60 Hz - min     OV	Delivery program	
Arrow of the control water with the circuit bracket's primary contract is prive water with an emergency step with a water ency step with	Туре	Accessory Undervoltage release
Suitable for     Off-load switch       Used with     Mit-load switch       Submited Data - Electrical     ZMI(-4, NI(-4)       working     AC       Notage type     AC       Rated control supply voltage (Us) at AC, 50 Hz - min     60 V DC       Rated control supply voltage (Us) at AC, 50 Hz - min     0V       Rated control supply voltage (Us) at AC, 50 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - min     0V       Voltage tolerance - min     0V       Voltage tolerance - min     0.5       Voltage tolerance - min     0.5 x Us       Pore- out voltage of undervoltage release AC/DC - min     0.5 x Us       Power consumption     0.5 x Us       Power consumption at AC (undervoltage release)     0.5 x Us       Fick-up power consumption at AC (undervoltage release)     1.5 VA	Special features	when the control voltage sinks below 35 – 70% US. For use with emergency-stop devices in connection with an emergency-stop button. When the under-voltage trip is switched off, accidental contact with the circuit breaker's primary contacts is prevented when switched on. Undervoltage releases cannot be installed simultaneously with NZMXHIV early-make auxiliary contact or NZMXA
Used with     NZM(-4), N1(-4)       icchnical Data - Electrical     NZM(-4), N1(-4)       Voltage type     AC       Rated control voltage (relay contacts)     60 V DC       Rated control supply voltage     60 V DC       Rated control supply voltage (Us) at AC, 50 Hz - min     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Rated control supply voltage (Us) at AC, 60 Hz - max     0V       Voltage tolerance - min     085       Voltage tolerance - max     035 X Us       Torp-out voltage of undervoltage release AC/DC - max     11       Power consumption     15 VA (seeling AC) 8.8W (seeling AC) 8.8W (seeling AC)       File-up power consumption at DC (undervoltage release)     15 VA       File-up power consumption at DC (undervoltage release)     8.8W	Frame	NZM1
voltage type   AC     Rated control voltage (relay contacts)   60 V DC     Rated control voltage (relay contacts)   60 V DC     Rated control voltage (us) at AC, 50 Hz - min   0 V     Rated control supply voltage (Us) at AC, 50 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Voltage tolerance - min   0 S     Voltage tolerance - max   0 S     Drop-out voltage of undervoltage release AC/DC - max   0 S     Power consumption   1.5 VA (sealing AC) 0.8 W (sealing DC)     Pick-up power consum	Suitable for	Off-load switch
Voltage type     AC       Rated control voltage (relay contacts)     60 V DC       Rated control supply voltage     60 V DC       Rated control supply voltage (Us) at AC, 50 Hz - min     0 V       Rated control supply voltage (Us) at AC, 50 Hz - max     0 V       Rated control supply voltage (Us) at AC, 60 Hz - max     0 V       Rated control supply voltage (Us) at AC, 60 Hz - max     0 V       Rated control supply voltage (Us) at AC, 60 Hz - max     0 V       Rated control supply voltage (Us) at DC - max     0 V       Rated control supply voltage (Us) at DC - max     0 V       Voltage tolerance - min     0 V       Voltage tolerance - max     0 X       Drop-out voltage release AC/DC - max     0 X       Power consumption     0 X       Pick-up power consumption at AC (undervoltage release)     0 X       Pick-up power consumption at DC (undervoltage release)     0 X       Pick-up power consumption at DC (undervoltage release)     0 X       Pick-up power consumption at DC (undervoltage release)     0 X       Pick-up power consumption at DC (undervoltage release)     0 X       Pick-up power consumption at DC (undervoltage release)     0 X       Pick-	Used with	NZM1(-4), N1(-4)
Rated control voltage (relay contacts)60 V DCRated control supply voltage60 V DCRated control supply voltage (Us) at AC, 50 Hz - minVRated control supply voltage (Us) at AC, 50 Hz - maxVRated control supply voltage (Us) at AC, 60 Hz - minVRated control supply voltage (Us) at AC, 60 Hz - minVRated control supply voltage (Us) at AC, 60 Hz - maxVRated control supply voltage (Us) at AC, 60 Hz - maxVRated control supply voltage (Us) at DC - min0VRated control supply voltage (Us) at DC - max0VVoltage tolerance - min0SVoltage tolerance - max1.1Drop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption5.5 X/s (sealing AC) 8.0 (sealing DC)Pick-up power consumption at AC (undervoltage release)6.6 MPick-up power consumption at DC (undervoltage release)6.6 MReaction time0.8 W	Technical Data - Electrical	
Rated control supply voltage   60 V DC     Rated control supply voltage (Us) at AC, 50 Hz - min   0 V     Rated control supply voltage (Us) at AC, 50 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at DC - min   0 V     Rated control supply voltage (Us) at DC - max   0 V     Voltage tolerance - min   0 V     Voltage tolerance - min   0.85     Drop-out voltage of undervoltage release AC/DC - min   0.35 x Us     Drop-out voltage of undervoltage release AC/DC - max   0.5 V A (sealing AC)     Prower consumption   1.5 VA (sealing AC)     Pick-up power consumption at AC (undervoltage release)   6.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)	Voltage type	AC
Rated control supply voltage (Us) at AC, 50 Hz - minVRated control supply voltage (Us) at AC, 50 Hz - max0 VRated control supply voltage (Us) at AC, 60 Hz - min0 VRated control supply voltage (Us) at AC, 60 Hz - max0 VRated control supply voltage (Us) at DC - min60 VRated control supply voltage (Us) at DC - max60 VRated control supply voltage (Us) at DC - max60 VVoltage tolerance - min0.85Voltage tolerance - max1.1Drop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption0.5 x UsPick-up power consumption at AC (undervoltage release)1.5 VA (sealing AC) 0.88 W (sealing DC)Pick-up power consumption at DC (undervoltage release)60 SWPick-up power consumption at DC (undervoltage release)60 SWReaction time0.9 ms	Rated control voltage (relay contacts)	60 V DC
Rated control supply voltage (Us) at AC, 50 Hz - max   V     Rated control supply voltage (Us) at AC, 60 Hz - min   V     Rated control supply voltage (Us) at AC, 60 Hz - max   V     Rated control supply voltage (Us) at DC - max   V     Rated control supply voltage (Us) at DC - max   60 V     Voltage tolerance - min   60 V     Voltage tolerance - max   1.1     Drop-out voltage of undervoltage release AC/DC - max   0.35 x Us     Power consumption   0.7 x Us     Power consumption at AC (undervoltage release)   1.5 VA (sealing AC) (0.8 W)     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.9 ms	Rated control supply voltage	60 V DC
Rated control supply voltage (Us) at AC, 60 Hz - min   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at AC, 60 Hz - max   60 V     Rated control supply voltage (Us) at DC - min   60 V     Rated control supply voltage (Us) at DC - max   60 V     Voltage tolerance - min   0.85     Voltage tolerance - max   0.35 x Us     Drop-out voltage of undervoltage release AC/DC - max   0.7 x Us     Power consumption   0.7 x Us     Power consumption at AC (undervoltage release)   1.5 VA (sealing AC) (0.8 W (sealing DC))     Pick-up power consumption at DC (undervoltage release)   0.8 W (sealing DC)     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W     Pick-up power consumption at DC (undervoltage release)   0.8 W	Rated control supply voltage (Us) at AC, 50 Hz - min	0 V
Rated control supply voltage (Us) at AC, 60 Hz - max   0 V     Rated control supply voltage (Us) at DC - min   60 V     Rated control supply voltage (Us) at DC - max   60 V     Voltage tolerance - min   0.85     Voltage tolerance - max   1.1     Drop-out voltage of undervoltage release AC/DC - max   0.7 x Us     Power consumption   1.5 VA (sealing AC)     Pick-up power consumption at AC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   0.80     Pick-up power consumption at DC (undervoltage release)   0.80     Pick-up power consumption at DC (undervoltage release)   0.80     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick-up power consumption at DC (undervoltage release)   1.5 VA     Pick - up power consumption at DC (undervoltage release)   1.5 VA     Pick - up power consumption	Rated control supply voltage (Us) at AC, 50 Hz - max	0 V
Rated control supply voltage (Us) at DC - min   60 V     Rated control supply voltage (Us) at DC - max   60 V     Voltage tolerance - min   60 V     Voltage tolerance - max   1.1     Drop-out voltage of undervoltage release AC/DC - max   0.35 x Us     Drop-out voltage of undervoltage release AC/DC - max   0.7 x Us     Power consumption   1.5 VA (sealing AC)     Pick-up power consumption at AC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervoltage release)   60 V     Pick-up power consumption at DC (undervolt	Rated control supply voltage (Us) at AC, 60 Hz - min	0 V
Rated control supply voltage (Us) at DC - max60 VVoltage tolerance - min60 VVoltage tolerance - max1.1Drop-out voltage of undervoltage release AC/DC - min0.35 x UsDrop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption1.5 VA (sealing AC) 0.8 W (sealing DC)Pick-up power consumption at AC (undervoltage release)60 VPick-up power consumption at DC (undervoltage release)70 VPick-up power consumption at DC (undervoltage release)70 VPick-up power consumption at DC (undervoltage release) </td <td>Rated control supply voltage (Us) at AC, 60 Hz - max</td> <td>0 V</td>	Rated control supply voltage (Us) at AC, 60 Hz - max	0 V
Voltage tolerance - min666.85Voltage tolerance - max1.10.35 x UsDrop-out voltage of undervoltage release AC/DC - min0.35 x UsDrop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption66Power consumption at AC (undervoltage release)6Pick-up power consumption at DC (undervoltage release)7Pick-up power consumption at DC (undervoltage release)7Pick-up power consumpti	Rated control supply voltage (Us) at DC - min	60 V
Voltage tolerance - max1.1Drop-out voltage of undervoltage release AC/DC - min0.35 x UsDrop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption646Pick-up power consumption at AC (undervoltage release)646Pick-up power consumption at DC (undervoltage release)646Reaction time64619 ms	Rated control supply voltage (Us) at DC - max	60 V
Drop-out voltage of undervoltage release AC/DC - min0.35 x UsDrop-out voltage of undervoltage release AC/DC - max0.35 x UsPower consumption0.7 x UsPower consumption at AC (undervoltage release)1.5 VA (sealing AC) 0.8 W (sealing DC)Pick-up power consumption at DC (undervoltage release)0.35 x UsPick-up power consumption at DC (undervoltage release)0.8 WPick-up power consumption at DC (undervoltage release)0.9 ms	Voltage tolerance - min	0.85
Drop-out voltage of undervoltage release AC/DC - max0.7 x UsPower consumption1.5 VA (sealing AC) 0.8 W (sealing DC)Pick-up power consumption at AC (undervoltage release)1.5 VAPick-up power consumption at DC (undervoltage release)0.6 WReaction time1.5 VA	Voltage tolerance - max	1.1
Power consumptionIS VA (sealing AC) 0.8 W (sealing DC)Pick-up power consumption at AC (undervoltage release)1.5 VAPick-up power consumption at DC (undervoltage release)0.8 WReaction time1.5 VA	Drop-out voltage of undervoltage release AC/DC - min	0.35 x Us
Pick-up power consumption at AC (undervoltage release) 0.8 W (sealing DC)   Pick-up power consumption at DC (undervoltage release) 1.5 V-A   Reaction time 0.8 W	Drop-out voltage of undervoltage release AC/DC - max	0.7 x Us
Pick-up power consumption at DC (undervoltage release) 0.8 W   Reaction time 19 ms	Power consumption	
Reaction time 19 ms	Pick-up power consumption at AC (undervoltage release)	1.5 V·A
	Pick-up power consumption at DC (undervoltage release)	0.8 W
Minimum command time - min 10 ms	Reaction time	19 ms
	Minimum command time - min	10 ms

Minimum command time - max	15 ms
Electric connection type	Screw connection
Technical Data - Mechanical	
Number of contacts (change-over contacts)	0
Number of contacts (normally closed contacts)	0
Number of contacts (normally open contacts)	0
Connection type	With terminal block on the left-hand switch side
Special features	Non-delayed disconnection of NZM circuit-breaker or N switch-disconnector when the control voltage sinks below 35 – 70% US. For use with emergency-stop devices in connection with an emergency-stop button. When the under-voltage trip is switched off, accidental contact with the circuit breaker's primary contacts is prevented when switched on. Undervoltage releases cannot be installed simultaneously with NZMXHIV early-make auxiliary contact or NZMXA shunt release.
Technical Data - Mechanical - Terminals	
Terminal capacity (solid/flexible conductor)	0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) at shunt release with ferrule 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) for undervoltage releases, off-delayed with ferrule 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (2x) at shunt release with ferrule 18 - 14 AWG (1x) at shunt release 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (2x) for undervoltage releases, off-delayed with ferrule 18 - 14 AWG (2x) for undervoltage releases, off-delayed 18 - 14 AWG (2x) at shunt release 18 - 14 AWG (1x) for undervoltage releases, off-delayed
Design verification as per IEC/EN 61439	
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 9.0**

Low-voltage industrial components (EG000017) / Under voltage coil (EC001022)					
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Undervoltage trip (ecl@ss13-27-37-04-17 [AKF015018])					
Rated control supply voltage AC 50 Hz		V	0 - 0		
Rated control supply voltage AC 60 Hz		V	0 - 0		
Rated control supply voltage DC		V	60 - 60		
Voltage type for actuating			AC		
Type of electric connection			Screw connection		
Number of contacts as normally open contact			0		
Number of contacts as normally closed contact			0		
Number of contacts as change-over contact			0		
Delayed			No		

Suitable for power circuit breaker	No
Suitable for off-load switch	Yes
Suitable for motor safety switch	No
Suitable for overload relay	No