

TECHNICAL DATA SHEET

PMAFIX IP68 - NVNZ-M/P - Strain relief fitting

Straight, metric thread

PMA



IP68, metal thread strain relief fitting for flexible non-metallic conduit



Applications:

- In railway vehicle and heavy machine construction
- For separation of damp and dry areas

Features & Benefits:

- Very high impact resistance
- With integrated strain relief for optimal ingress protection at the cable (up to IP68 / 10 bar)
- High thread and system connection strength
- Vibration-resistant connection to PMA conduits
- Easy assembly
- High conduit pull-out strength
- Very good chemical properties
- Fits both conduit profiles - fine (T) and coarse (G)

Ingress protection:

- IP66, IP68 & IP69 (EN/IEC 60529)
- IP68 (up to 10 bar at the cable)
- IP69, 100 bar with Water impact protection (WPS-ring)

Materials:

- Fitting body: high-grade, specially formulated polyamide 6
- Thread: nickel-plated brass
- Sealing insert: TPE-V

Compatible with:

- PMAFLEX Pro Conduits
- PMAFLEX Multilayer Conduits
- PMAFLEX Conduits
- PMA Smart Line Conduits

Conforms to:

- EN 45545-2 HL3 (R23 & R23)
- NFPA 130
- UL 94 (V0)

Weathering resistance:

- Very good UV resistance and weathering characteristics

Colour:

- Black

Chemical properties:

- Please refer to www.pma.ch (Technical Information / Chemical Resistance)

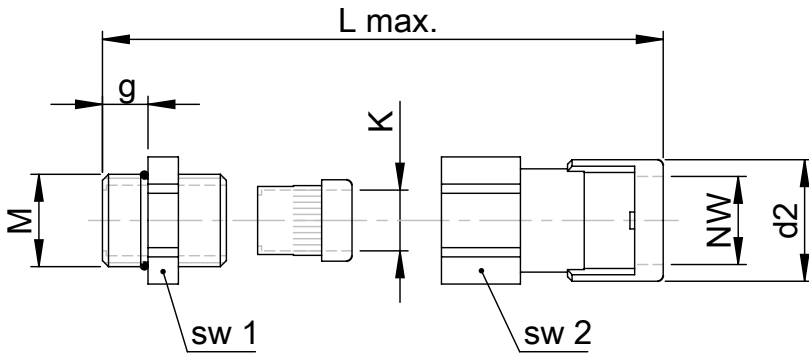
Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

Product selection:

Part no.			Thread size	Conduit size	Cable clamping range in mm	Dimensions in mm (nom.)					Weight	Packing unit
System S (black)	System R (black)	Sealing insert	metric	NW	K	g	L	d2	SW1	SW2	kg/100pcs	pcs/PU
NVNZ-M120S/P1	NVNZ-M120R/P	EK150p7	M12x1.5	10	4.0 - 6.5	5.0	48.5	23.0	17	21	1.7	50
NVNZ-M120S/P2		EK150p8	M12x1.5	10	5.0 - 8.0	5.0	48.5	23.0	17	21	1.7	50
NVNZ-M120S/P3		EK150p9	M12x1.5	10	6.5 - 9.5	5.0	48.5	23.0	17	21	1.7	50
NVNZ-M160S/P1	NVNZ-M160R/P	E150p7	M16x1.5	10	4.0 - 6.5	6.0	49.5	23.0	18	21	2.6	50
NVNZ-M160S/P2		E150p8	M16x1.5	10	5.0 - 8.0	6.0	49.5	23.0	18	21	2.6	50
NVNZ-M160S/P3		E150p9	M16x1.5	10	6.5 - 9.5	6.0	49.5	23.0	18	21	2.6	50
NVNZ-M162S/P4		EK151p11	M16x1.5	12	7.0 - 10.5	6.0	54.5	26.5	20	24	3.0	50
NVNZ-M202S/P1	NVNZ-M202R/P	E152p7	M20x1.5	12	4.0 - 6.5	6.5	54.0	28.5	22	26	3.6	50
NVNZ-M202S/P2		E152p8	M20x1.5	12	5.0 - 8.0	6.5	54.0	28.5	22	26	3.6	50
NVNZ-M202S/P3		E152p9	M20x1.5	12	6.5 - 9.5	6.5	54.0	28.5	22	26	3.6	50
NVNZ-M202S/P4		E152p11	M20x1.5	12	7.0 - 10.5	6.5	54.0	28.5	22	26	3.6	50
NVNZ-M207S/P1	NVNZ-M207R/P	E152p7	M20x1.5	17	4.0 - 6.5	6.5	60.0	31.0	22	28	4.3	50
NVNZ-M207S/P2		E152p8	M20x1.5	17	5.0 - 8.0	6.5	60.0	31.0	22	28	4.3	50
NVNZ-M207S/P3		E152p9	M20x1.5	17	6.5 - 9.5	6.5	60.0	31.0	22	28	4.3	50
NVNZ-M207S/P4		E152p11	M20x1.5	17	7.0 - 10.5	6.5	60.0	31.0	22	28	4.3	50
NVNZ-M207S/P5		E152p13	M20x1.5	17	9.0 - 13.0	6.5	60.0	31.0	22	28	4.3	50
NVNZ-M253S/P5	NVNZ-M253R/P	EK154p13	M25x1.5	23	9.0 - 13.0	7.5	72.5	39.5	30	36	8.2	30
NVNZ-M253S/P6		EK154p16	M25x1.5	23	11.5 - 15.5	7.5	72.5	39.5	30	36	8.2	30
		*NVNZ-M253R1/P	M25x1.5	23		7.5	72.5	39.5	30	36	8.2	30
NVNZ-M257S/P1	NVNZ-M257R/P	E153p7	M25x1.5	17	4.0 - 6.5	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M257S/P2		E153p8	M25x1.5	17	5.0 - 8.0	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M257S/P3		E153p9	M25x1.5	17	6.5 - 9.5	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M257S/P4		E153p11	M25x1.5	17	7.0 - 10.5	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M257S/P5		E153p13	M25x1.5	17	9.0 - 13.0	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M257S/P6		E153p16	M25x1.5	17	11.5 - 15.5	7.5	61.5	31.0	28	28	6.1	50
NVNZ-M323S/P4	NVNZ-M323R/P	E154p18	M32x1.5	23	14.0 - 18.0	8.0	73.0	39.5	35	36	10.9	30
NVNZ-M323S/P5	*NVNZ-M323R1/P	E154p20	M32x1.5	23	17.0 - 20.5	8.0	73.0	39.5	35	36	10.9	30
NVNZ-M329S/P2	NVNZ-M329R/P	EK155p18	M32x1.5	29	14.0 - 18.0	8.0	73.0	46.5	40	43	14.3	20
NVNZ-M329S/P3		EK155p20	M32x1.5	29	17.0 - 20.5	8.0	73.0	46.5	40	43	14.3	20
NVNZ-M329S/P4		EK155p25	M32x1.5	29	20.0 - 25.0	8.0	73.0	46.5	40	43	14.3	20
NVNZ-M406S/P1	NVNZ-M406R/P	E156p25HF	M40x1.5	36	20.0 - 25.0	9.0	87.0	60.5	50	55	19.5	20
NVNZ-M406S/P2		EK156p28	M40x1.5	36	24.0 - 28.0	9.0	87.0	60.5	50	55	19.5	20
NVNZ-M406S/P3		EK156p32	M40x1.5	36	27.0 - 32.0	9.0	87.0	60.5	50	55	19.5	20
NVNZ-M406S/P5		EK156p36	M40x1.5	36	32.0 - 36.0	9.0	87.0	60.5	50	55	19.5	20
NVNZ-M409S/P1	NVNZ-M409R/P	E155p16	M40x1.5	29	11.5 - 15.5	8.0	73.0	47.0	43	43	16.4	20
NVNZ-M409S/P2		E155p18	M40x1.5	29	14.0 - 18.0	8.0	73.0	47.0	43	43	16.4	20
NVNZ-M409S/P3		E155p20	M40x1.5	29	17.0 - 20.5	8.0	73.0	47.0	43	43	16.4	20
NVNZ-M409S/P4		E155p25	M40x1.5	29	20.0 - 25.0	8.0	73.0	47.0	43	43	16.4	20
NVNZ-M409S/P5		E155p28	M40x1.5	29	24.0 - 28.0	8.0	73.0	47.0	43	43	16.4	20
NVNZ-M506S/P1	NVNZ-M506R/P	E156p32	M50x1.5	36	27.0 - 32.0	10.0	89.5	60.5	54	55	22.9	20
NVNZ-M506S/P2		E156p34	M50x1.5	36	29.0 - 34.0	10.0	89.5	60.5	54	55	22.9	20
NVNZ-M506S/P3		E156p36	M50x1.5	36	32.0 - 36.0	10.0	89.5	60.5	54	55	22.9	20
NVNZ-M508S/P2	NVNZ-M508R/P	E157p36HF	M50x1.5	48	32.0 - 36.0	10.0	92.0	66.0	57	60	25.2	10
NVNZ-M508S/P3		E157p40HF	M50x1.5	48	36.0 - 40.0	10.0	92.0	66.0	57	60	25.2	10
NVNZ-M638S/P1	NVNZ-M638R/P	E158pm1x35	M63x1.5	48	32.0 - 35.0	10.0	90.5	76.5	68	70	40.0	10
NVNZ-M638S/P2		E158p44	M63x1.5	48	39.0 - 44.0	10.0	90.5	76.5	68	70	40.0	10

* R1 version has to be used in combination with multiple sealing inserts.
IP68GT available. Please replace „S“ or „R“ with GT (e.g. NVNZ-M202GT/P1) (See PMA Info 25 for further details of IP68GT fittings)
Our customer service dept. or local distribution partner will be pleased to help you concerning product availability and lead time

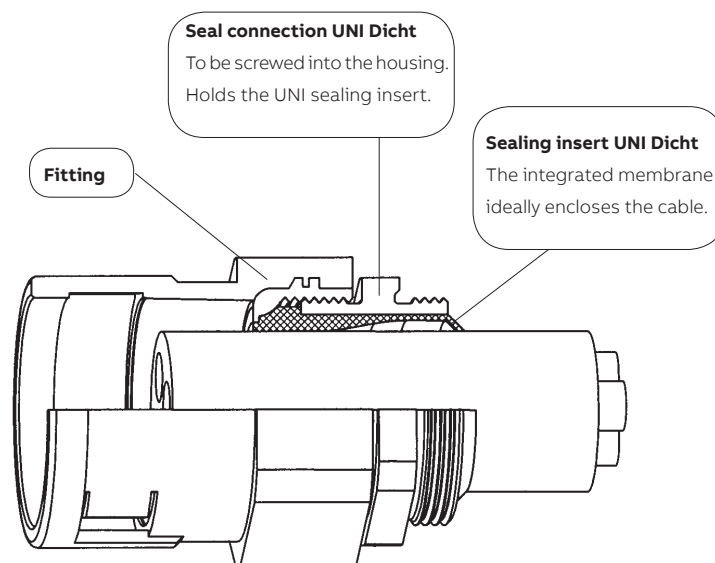


Sealing system

Graduation of the clamping area in the UNI sealing system achieves optimal transfer of the clamping force to the cables. Distribution of the pressure through the sealing insert avoids damage to the cables. At the same time optimal sealing and strain relief are provided. Even when not completely tightened the sealing insert membrane offers sealing to IP54.

Temperature range sealing insert Pflitsch: $-40 \dots +135 \text{ }^\circ\text{C}$

If several conductors are used with the connector multiple sealing inserts should be considered.



Mechanical Properties:	Value:	Test parameters:	Test method:
Tensile modulus	1'200 ... 3'700 N/mm ²		ISO 527
Tensile strength	45 ... 65 N/mm ²		ISO 527
Notched bar impact test	4 ... 20 kJ/m ²		ISO 180/1C
Vibration and shock standard	Cat. 2		IEC 61373, IEC 60068-2-27 / -64

Thermal properties:	Value:	Test parameters:	Test method:
Continuous application temperature	- 50 ... + 105 °C		PMA DO 9.21-4510
Upper application temperature	+ 120°C	(20'000 h)	PMA DO 9.21-4360
Short-term	+ 160 °C	(168 h)	PMA DO 9.21-4360

Fire safety properties:	Value:	Test parameters:	Test method:
Fire performance	non flame-propagating		IEC EN 61386-1
Flame class	V0		UL 94
Fire hazard level	HL3		EN 45545-2 (R22)
Oxygen index	> 32 %		EN ISO 4589-2
Smoke density	< 150 Ds max.		EN ISO 5659-2 (25 kW/m ²)
Toxicity	< 0.75 CIT _{NLP}		NF X 70-100-1/-2: (600°C)
Fire hazard level	HL3		EN 45545-2 (R23)
Oxygen index	> 32 %		EN ISO 4589-2
Smoke density	< 300 Ds max.		EN ISO 5659-2 (25 kW/m ²)
Toxicity	< 1.5 CIT _{NLP}		NF X 70-100-1/-2: (600°C)
Fire performance NFPA 130:			NFPA 130
- Flammability	compliant		ASTM E 162
- Smoke density	compliant		ASTM E 662
Heat and visible smoke	26.00 MJ/kg		ASTM E 1354
Smoke emission toxicity	compliant		Bombardier SMP 800-C
Smoke emission toxicity	compliant		Boeing BSS 7239

Note: Fire safety properties only applicable for PMA raw material

Content of delivery:

- System S: Fitting with conduit locking clip (OVN2)
- Conduit gasket (NVN3)
- Pflitsch double thread element with pre-installed O-ring (OR)
- Pflitsch sealing insert

- System R: Fitting with conduit locking clip (OVN2)
- Conduit gasket (NVN3)
- Pflitsch double thread element with pre-installed O-ring (OR)

Assembly instructions:

- Please consider the appropriate assembly instructions on www.pma.ch

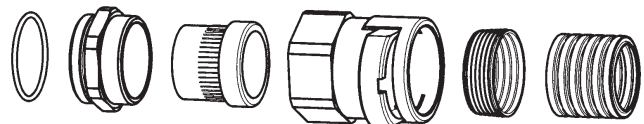


ABB Switzerland Ltd,
PMA Cable Protection
Aathalstrasse 90
8610 Uster, Switzerland
Phone: +41 58 585 00 11
pma-info@ch.abb.com
www.pma.ch

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