

**Angel**  
**AFF-Fire Fighter**  
**1230** FK-5-1-12 FIRE SUPPRESSION SYSTEM

**Angel**  
**AFF-Fire Fighter**  
**200** HFC-227ea FIRE SUPPRESSION SYSTEM



 **TVPN.ID**  
TOTAL FIRE PROTECTION PRODUCTS - SERVICES - SOLUTIONS  
PT. TRINITAS VICTORI PYROGEN NUSANTARA

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**200** HFC-227ea FIRE SUPPRESSION SYSTEM

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# CLEAN AGENT FIRE SUPPRESSION SYSTEM



Angel  
AFF-Firefighter  
1230 FK-5-1-12 FIRE SUPPRESSION SYSTEM

Angel  
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200 HFC-227ea FIRE SUPPRESSION SYSTEM



## Clean Agent Fire Suppression System

Sistem Pemadaman Api Media Gas yang memadamkan api dengan cepat tanpa merusak peralatan, fasilitas, penghuni atau lingkungan

*Gaseous Fire Suppression Systems that suppress fires quickly without harming equipment, the facility, inhabitants or the environment*

### FK-5-1-12 - NOVEC-1230

Dalam hal Pemadaman Api, NOVEC-1230 / FK-5-1-12 adalah media paling ramah lingkungan yang tersedia. Tersimpan dalam bentuk cairan tetapi di keluarkan melalui TVPN.ID AFF-1230 Sistem Pemadaman Api dalam bentuk gas tidak berwarna dan tidak konduktif secara elektrik dan memiliki umur atmosfer yang sangat rendah.

*When it comes to Fire Suppression, NOVEC-1230 / FK-5-1-12 is the most environmentally friendly agent available. It is stored as liquid but it discharged through TVPN.ID's AFF-1230 Fire Suppression System as a colourless and electrically non-conductive gas vapour that has an extremely low atmospheric lifetime.*

### HFC-227ea - FM-200

TVPN.ID AFF-200 Sistem Pemadaman Api menggunakan FM-200 / HFC-227ea, media gas yang tidak meninggalkan residu, tidak berwarna, tidak berbau, tidak korosif, tidak konduktif secara elektrik dan memberikan lingkup perlindungan lebih besar dalam periode waktu yang lebih singkat dibanding Sistem Sprinkle Tradisional.

*TVPN.ID's AFF-200 Fire Suppression System uses FM-200 / HFC-227ea, a colourless, odourless, non-corrosive and electrically non-conductive gas agent that leaves no residue and which provides greater protection coverage in a shorter period of time than traditional Sprinkler Systems.*



Bangunan  
Komersial  
Commercial  
Building



Terowongan -  
Kereta Api  
Tunnel - Rail -  
Road



Petrokimia -  
Lepas Pantai  
Petrochemical  
- Offshore



Aset Bernilai  
Tinggi  
High Value  
Asset



Pusat Kontrol  
Control  
Center



Industri  
Industry



Telkom &  
Komputer  
TLC &  
Computer



Pesawat -  
Hangar  
Airplane -  
Hangar





# AFF-200 & AFF-1230

## Silinder - Cylinders



### Spesifikasi Silinder - Cylinders Specification

Silinder Las TPED TPED Welded Cylinders	Volume Silinder Cylinder Volume	Tekanan Pressure	Dimensi Silinder Cylinder Dimension	Ukuran Valve Valve Size	Tinggi Total Total Height	Tinggi Total dengan Valve Overall Height with Valve
Kode Barang - Part Number	(L)	(Bar)	(mm)	(Inch)	(mm)	(mm)
SPS020-MS-016B-EN	16.6	25	228.6	1" Thread	578	761
SPS020-MS-032B-EN	32	25	324	1-1/2" Thread	584	730
SPS020-MS-052-EN	52	25	324	1-1/2" Thread	844	990
SPS020-MS-70-EN	70	25	324	1-1/2" Thread	1042	1193
SPS020-MS-100-EN	100	25	406	1-1/2" Thread	1019	1187
SPS020-MS-120-EN	120	25	406	2" Thread	1192	1350
SPS020-MS-150-EN	150	25	406	2" Thread	1437	1596
SPS020-MS-180-EN	180	25	462	2" Thread	1317	1493
SPS020-MS-200-EN	200	25	462	2" Thread	1447	1623
SPS021-MS-240-EN	240	25	508	2" Thread	1468	1656
SPS2271-CS-240-80	240	25	508	3" Flange	1523	1656
SPS021-MS-300-EN	300	25	610	3" Flange	1363	1506
SPS022-MS-369-EN	369	25	610	3" Flange	1608	1751
SPS022-MS-420-EN	420	25	610	3" Flange	1798	1941

Silinder Tanpa Las TPED TPED Seamless Cylinders	Volume Silinder Cylinder Volume	Tekanan Pressure	Dimensi Silinder Cylinder Dimension	Ukuran Valve Valve Size	Tinggi Total Total Height	Tinggi Total dengan Valve Overall Height with Valve
Part Number	(L)	(Bar)	(mm)	(Inch)	(mm)	(mm)
SPS200-MS-030B-EN	30	42/50	232	1-1/2" Thread	986	10199
SPS200-MS-050B-EN	50	42/50	232	1-1/2" Thread	1506	1619
SPS200-MS-080B-EN	80	42/50	406	2" Thread	890	1020
SPS200-MS-100B-EN	100	42/50	406	2" Thread	1055	1185
SPS200-MS-140B-EN	140	42/50	406	2" Thread	1385	1515
SPS200-MS-180-EN	180	42/50	406	2" Thread	1715	1845

Silinder Las DOT DOT Welded Cylinders	Volume Silinder Cylinder Volume	Tekanan Pressure	Dimensi Silinder Cylinder Dimension	Ukuran Valve Valve Size	Tinggi Total Total Height	Tinggi Total dengan Valve Overall Height with Valve
Part Number	(L)	(Bar)	(mm)	(Inch)	(mm)	(mm)
SPS030-MS-29-DT	29	25	254	1-1/2" Thread	753	877
SPS030-MS-52-DT	52	25	406	1-1/2" Thread	600	748
SPS030-MS-106-DT	106	25	406	1-1/2" Thread	1035	1188
SPS030-MS-147-DT	147	25	406	2" Thread	1377	1590
SPS031-MS-227-DT	227	25	508	2" Thread	1408	1530
SPS031-MS-275-DT	275	25	508	3" Thread	1666	1828
SPS032-MS-369-DT	369	25	610	3" Thread	1572	1726

**Catatan - Notes:**

- Tersedia liquid level indicator, tergantung ukuran tabung  
*Option for liquid indicator available, subject to cylinder size*
- Semua dimensi tabung tercantum diatas hanya sebagai pedoman saja. Toleransi ±15mm  
*All Cylinder dimensions listed below are only for guideline purpose. Tolerance of ±15mm.*



**NOVEC-1230**  
**FIRE SUPPRESSION SYSTEM**

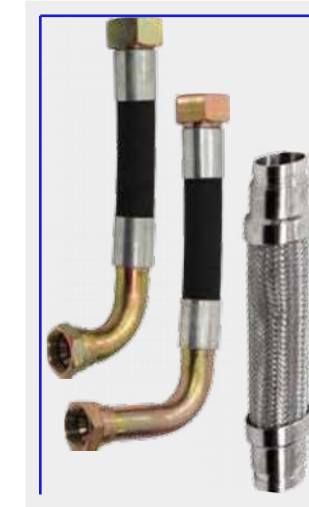
# AFF-200 & AFF-1230

## Komponen - Components



### Discharge Valve

Kode Barang - Part Number	SPS100-GM-025-UL SPS100-GM-025-VC	SPS100-GM-038-UL SPS100-GM-038-VC	SPS100-GM-050-UL SPS100-GM-050-VC	SPS100-GM-080-UL SPS100-GM-080-VC
Ukuran Valve Valve Size	1"	1-1/2"	2"	3"
Bahan Badan Valve Valve Body Material	Kuningan Brass	Kuningan Brass	Kuningan Brass	Kuningan Brass
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Sambungan Aktuator Actuator Connection	1-1/4" X 18UNEF	1-1/4" X 18UNEF	1-1/4" X 18UNEF	1-1/4" X 18UNEF
Sambungan Pilot Hose Pilot Hose Connection	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT
Sambungan Pressure Gauge Pressure Gauge Connection	1/8" NPT	1/8" NPT	1/8" NPT	1/8" NPT
Sambungan Outlet Valve Valve Outlet Connection	1-7/16" X 12 UN	1-7/8" X 12 UN	2-1/2" X 12 UN	3" Grooved Connection



### Discharge Hose

Kode Barang - Part Number	SPS-SR-010-38MM	SPS-SR-012-38MM	SPS-SR-010-50MM	SPS-SR-012-50MM	*SPS-SR-011-50MM	SPS-SR-012-80MM FITP90-GRV080-OR
Bahan Material	Selang Karet Sintetis dengan lapis tunggal anyaman kawat baja <i>Synthetic Rubber Hose with high tensile steel wire Single braid reinforcement</i>					Selang SS 304 lapis ganda anyaman kawat <i>Stainless steel SS 304 hose double wire braids reinforcement</i>
Tekanan Kerja Maks. Max. Working Pressre	50 Bar	90 Bar	40 Bar	80 Bar	40 Bar	28 Bar
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Panjang dari Elbow Inlet Length from Elbow Inlet	465 mm	465 mm	520 mm	520 mm	520 mm	480 mm
Elbow Inlet	1-7/8" X 12 UNJ	1-7/8" X 12 UNJ	2-1/2" X 12 UNJ	2-1/2" X 12 UNJ	2-1/2" X 12 UNJ	3" Grooved Connecton
Keluaran Outlet	2" BSP	2" BSP	2-1/2" BSP	2-1/2" BSP	2-1/2" BSP	3" Grooved Connecton

\* Discharge Hose dengan Elbow Lebih Panjang - *Extended Elbow Discharge Hose*



### Check Valve

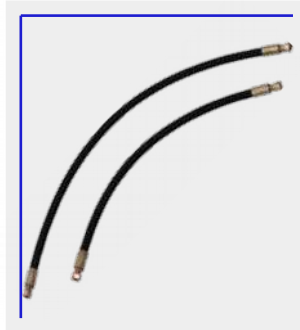
Kode Barang - Part Number	SPS101-GM-050-UL	SPS101-GM-065-UL	SPS101-GM-080-UL
Bahan Material	Kuningan Gun Metal	Kuningan Gun Metal	Baja Lapis Seng Zinc Plated Mild Steel
Dudukan Seat	Nilon Nylon	Nilon Nylon	Kuningan Gun Metal
Ring Washer	Baja Lapis Seng Zinc Plated Mild Steel	Baja Lapis Seng Zinc Plated Mild Steel	N/A
Mur Nut	Stainless Steel	Stainless Steel	N/A
Inti Spline	Stainless Steel	Stainless Steel	N/A
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Sambungan Inlet dan Outlet Inlet and Outlet Connections	2" BSP	2-1/2" BSP	6" x 3" Grooved Connection



**FM-200**  
**FIRE SUPPRESSION SYSTEM**

# AFF-200 & AFF-1230

## Silinder - Cylinders



### Pilot Line Hose

Kode Barang - Part Number	SPS-SR-008-560MM	SPS-SR-008-760MM
Panjang Total Overall Length	560 mm	560 mm
Bahan Material	Selang Karet Sintetis dengan 2 lapis anyaman kawat baja Synthetic Rubber Hose with 2 high tensile steel wire braid reinforcement	
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C
Sambungan Selang Hose Connection	1/8" BSP	1/8" BSP



### Pressure Gauge 25 Bar / 42 Bar / 50 Bar

Kode Barang AFF-200 Part Number For AFF-200	SPC170-PG-25B-HFC	SPC170-PG-42B-HFC	SPC170-PG-50B-HFC
Kode Barang AFF-1230 Part Number For AFF-1230	SPC170-PG-25B-FK	SPC170-PG-42B-FK	SPC170-PG-50B-FK
Tipe Type	Spring Tube Manometer	Spring Tube Manometer	Spring Tube Manometer
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Sambungan ke Valve Connection to Valve	1/8 NPT	1/8 NPT	1/8 NPT



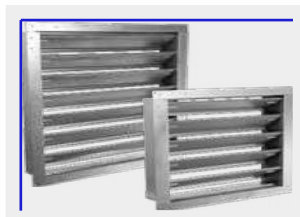
### Pressure Gauge with Low Pressure Switch

Kode Barang AFF-200 Part Number For AFF-200	SPC169-PS-25B-HFC	SPC169-PS-42B-HFC	SPC169-PS-50B-HFC
Kode Barang AFF-1230 Part Number For AFF-1230	SPC169-PS-25B-FK	SPC169-PS-42B-FK	SPC169-PS-50B-FK
Kabel Wire	18 Gauge SXL	18 Gauge SXL	18 Gauge SXL
Kisaran Suhu Temperature Range	-10°C ~ 60°C	-10°C ~ 60°C	-10°C ~ 60°C
Sambungan ke Valve Connection to Valve	1/8 NPT	1/8 NPT	1/8 NPT
Sinyal Crossover Crossover Signal	AFF-200	AFF-1230	
	20 Bar	20.5 Bar	
	32 Bar	35 Bar	
	36 Bar	42 Bar	



### Discharge Pressure Switch

Kode Barang Part Number	AFF-DPS-YZ101
Bahan Material	Kuningan Brass
Tekanan Kerja Working Pressure	≥ 3 bar
Kisaran Suhu Temperature Range	-20°C ~ 65°C



### Single Flow Vent

Kode Barang Part Number	SPS-SR-FV-RVS700	SPS-SR-FV-RVS1000
Kerangka Frame	Besi Galvanis Galvanized Steel	Besi Galvanis Galvanized Steel
Bilah Blade	Aluminium	Aluminium



# NOVEC-1230

## FIRE SUPPRESSION SYSTEM



# AFF-200 & AFF-1230

## Komponen - Components



### Manual Actuator Button

Kode Barang Part Number	SPS110-XX-MNL-UL
Bahan Material	Kuningan & Stainless Steel Brass & Stainless Steel
Kekuatan Aktuasi Actuating Force	12 – 14 Lbs
Sambungan Connection	1-1/8 X 18 UNEF



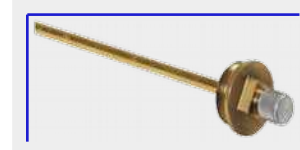
### Latching Solenoid Actuator

Kode Barang Part Number	SPS110-XX-LAT-UL
Bahan Material	Kuningan & Stainless Steel Brass & Stainless Steel
Kekuatan Aktuasi Actuating Force	12 – 14 Lbs
Sambungan Connection	1-1/8 X 18 UNEF
Arus Firing Current	Max. 0.5 Amp



### Pneumatic Actuator

Kode Barang Part Number	SPS111-BR-PNE-UL
Bahan Material	Kuningan Brass
Sambungan Connection	1-1/4 X 18 UNEF
Sambungan Pilot Hose Pilot Hose Connection	1/8" NPT



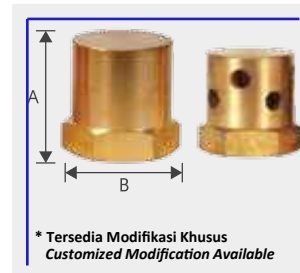
### Liquid Level Indicator

Kode Barang Part Number	SPS040-CU-010-UL
Ukuran Inlet Neck Ring Neck Ring Inlet Size	2"-11.5 NPSC



### Valve Outlet Adaptor

Kode Barang Part Number V	SPC227-CS-DN25 ADAPTOR	SPC227-CS-DN33 ADAPTOR	SPC227-CS-DN49 ADAPTOR
Ukuran Valve Valve Size	1"	1-1/2"	2"
Sambungan Outlet Valve Valve Outlet Connection	1-7/16" X 12 UN	1-7/8" X 12 UN	2-1/2" X 12 UN



### Discharge Nozzle

Kode Barang AFF-200 Part Number for AFF-200	SPC075-BR-015-UL	SPC075-BR-020-UL	SPC075-BR-025-UL	SPC075-BR-032-UL	SPC075-BR-040-UL	SPC075-BR-050-UL
Kode Barang AFF-1230 Part Number for AFF-1230	SPC076-BR-015-UL	SPC076-BR-020-UL	SPC076-BR-025-UL	SPC076-BR-032-UL	SPC076-BR-040-UL	SPC076-BR-050-UL
Ukuran Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Dim. A	45 mm	45 mm	56 mm	67 mm	70 mm	88 mm
Dim. B	31.75 mm	31.75 mm	44.45 mm	50.80 mm	63.50 mm	76.20 mm



# FM-200

## FIRE SUPPRESSION SYSTEM





# AFF-200 & AFF-1230

## Perangkat Deteksi & Notifikasi - Detection & Notification Equipment



### Fire Suppression Control Panel

Kode Barang Part Number	IPA-100 ADDRESSABLE	HCVR-3 CONVENTIONAL
Kapasitas Capacity	1 Loop - 100 Address	3 Zone
Kapasitas Releasing Releasing Capacity	Tanpa Batasan Unlimited	1 Zone
Keluaran Output	2 NAC @ 3 A Expandable : 188 NAC	3 NAC @ 1 A
Tambahan Auxiliary	2 Input/Output, Alarm Relay, Trouble Relay, Supervisory Relay	1st Stage Relay, 2nd Stage Relay, Extract Relay, Trouble Relay, Fire Relay, Local Fire
Komunikator Berbasis IP IP Communicator	Bawaan Panel Built-in	-
Jaringan & Integrasi Network & Integration	Graphical, Cloudbase Monitoring (PC & Mobile App) Modbus Link, BACnet Link, Peer to Peer Networking	-
Standar & Sertifikasi Standard & Approval	UL, FM	UL, FM



### Manual Release Station

Kode Barang Part Number	PAD100-PSDA ADDRESSABLE	HPS-DAK CONVENTIONAL
Bahan Material	Metal Diecast	Metal Diecast
Rating Kontak Contact Rating	1 A @ 30 VDC	1 A @ 30 VDC
Standar & Sertifikasi Standard & Approval	UL, FM	UL, FM



### Abort Switch

Kode Barang Part Number	Abort-R ADDRESSABLE	HCVR-AS CONVENTIONAL
Rating Kontak Contact Rating	1 NO, 2.5 A @ 24 VDC	1 A @ 30 VDC
Standar & Sertifikasi Standard & Approval	UL, FM	UL, FM



### Maintenance / Disable Switch

Kode Barang Part Number	RCDS ADDRESSABLE	HCVR-DS CONVENTIONAL
Rating Kontak Contact Rating	1 A @ 40 VDC	1 A @ 30 VDC
Standar & Sertifikasi Standard & Approval	UL	UL, FM



### Photoelectric Smoke Detector

Kode Barang Part Number	PAD200-PD ADDRESSABLE	SD-651 CONVENTIONAL
Kisaran Sensitivitas Sensitivity Range	1% - 3.7% / ft	1% - 3.18% / ft
Arus Standby & Alarm Standby & Alarm Current	300 mA	85 mA & 100 mA
Standar & Sertifikasi Standard & Approval	UL, FM	UL



# NOVEC-1230

## FIRE SUPPRESSION SYSTEM



# AFF-200 & AFF-1230

## Perangkat Deteksi & Notifikasi - Detection & Notification Equipment



### Fixed / Rate of Rise Heat Detector

Kode Barang Part Number	PAD100-HD ADDRESSABLE	5151 CONVENTIONAL
Suhu Alarm Sensitivity Range	Fixed : 57 °C - 85 °C ROR : 8.3 °C / Min	Fixed : 57 °C ROR : 8.3 °C / Min
Arus Standby & Alarm Standby & Alarm Current	300 mA	80 mA & 130 mA
Standar & Sertifikasi Standard & Approval	UL, FM	UL, FM



### Horn Strobe

Kode Barang Part Number	HS-24 ADDRESSABLE	SYS-HS CONVENTIONAL
Keluaran Suara Horn Output	66 – 82 dBA (10 feet / 3 meter)	70 – 82 dBA (10 feet / 3 meter)
Kandela Strobo Strobe Candela	15, 30, 60, 75, 110 cd	15, 75, 110 cd
Tegangan Operasional Operation Voltage	24 VDC	24 VDC
Standar & Sertifikasi Standard & Approval	UL	UL



### Alarm Bell

Kode Barang Part Number	PDC-6-24 ADDRESSABLE	SSM-24-6 CONVENTIONAL
Keluaran Suara Horn Output	95 dBA (10 feet / 3 meter)	82 dBA (10 feet / 3 meter)
Tegangan Operasional Operation Voltage	24 VDC	24 VDC
Arus Alarm Alarm Current	20 mA	32 mA
Standar & Sertifikasi Standard & Approval	UL	UL



### Indication Lamp

Kode Barang Part Number	EFL-2412-LED-SMT-EAI	EFL-2412-LED-SMT-GD
Tipe Indikasi Indication Type	EVACUATE AREA IMMEDIATELY	GAS DISCHARGED
Mode Indikasi Indication Mode	Berkedip secara Elektronik Electronic Flashing	Berkedip secara Elektronik Electronic Flashing
Tegangan Operasional Operation Voltage	24 VDC	24 VDC
Arus Alarm Alarm Current	80 mA	80 mA



### Indication Sign

Kode Barang Part Number	AFF FSS-AIS-WS	AFF FSS-AIS-MRS
Tipe Indikasi Indication Type	WARNING SIGN	MANUAL RELEASE SIGN
Bahan Material	Akrilik Acrylic	Akrilik Acrylic
Ukuran Size	30 cm X 25 cm	30 cm X 25 cm



# FM-200

## FIRE SUPPRESSION SYSTEM

